

Background Information Documents

JULY 2020

**ENVIRONMENTAL IMPACT ASSESSMENT
AND
PUBLIC PARTICIPATION PROCESS**

**PROPOSED DEVELOPMENT OF THE
UPILENGA SOLAR PARK AND
ASSOCIATED INFRASTRUCTURE
NORTHERN CAPE PROVINCE**

savannah
environmental

BACKGROUND INFORMATION DOCUMENT (BID)



Envelo Capital Projects (Pty) Ltd, an independent power developer of solar power plants in South Africa proposes the development of the Upington Ilanga Solar Park (Upilanga Solar Park) comprising photovoltaic (PV) solar energy facilities and CSP facilities with associated infrastructure, to be implemented in a phased approach. The proposed sites are located ~30km south-east of the town of Upington in the Northern Cape Province. Upilanga Solar Park already includes various authorised CSP facilities, including the operational Karoshoek Solar One facility, and will ultimately comprise of a number of solar projects when completed. The projects are intended to assist in addressing South Africa's energy challenge and to align with the Department of Mineral Resources and Energy (DMRE's) Integrated Resource Plan (IRP) 2019, to pursue a diversified energy mix that reduces reliance on a single or a few primary energy sources. It is the Developer's intention to bid each solar PV facility under the Department of Mineral Resources and Energy's Independent Power Producers Procurement Programmes, while simultaneously diversifying South Africa's electricity mix, and positively contributing towards socio-economic and environmentally sustainable growth.

The first phase of the additional projects proposed as part of the Upilanga Solar Park consists of two 100MW PV facilities, i.e. Upilanga PV1 and Upilanga PV2. Each solar PV facility will be constructed as a separate stand-alone project, with a separate project development company, or Special Purpose Vehicle (SPV) as the applicant for each project.

Additional projects (as listed below) will be considered in future phases of the proposed development, and will undergo separate EIA processes.

AIM OF THIS BACKGROUND INFORMATION DOCUMENT

This document aims to provide you, as an Interested and / or Affected Party (I&AP), with:

- » An overview of the projects proposed to form part of the Upilanga Solar Park.
- » An overview of the first phase of the project (Upilanga PV1 and Upilanga PV2).
- » An overview of the Basic Assessment processes, public participation process, and specialist studies being undertaken to assess the potential positive and negative direct, indirect, and cumulative impacts of the various projects under consideration.
- » Details of how you can become involved in the Basic Assessment processes, receive information, or raise issues which may concern and / or interest you.

OVERVIEW OF THE PROPOSED PROJECTS

Nine PV projects are proposed to form part of the Upilanga Solar Park. The projects are proposed within the Remaining Extent of Matjesrivier 41, Portion 2 & 3 of the farm Matjesrivier 41 and Lot 944 and will form part of the Upilanga Solar Park located approximately 30 km east of Upington. The locations and property details of the remaining PVs proposed from site 3 to site 9 are to be confirmed within future Basic Assessment processes. The site falls within the jurisdiction of the Dawid Kruijer Local Municipality and the greater ZF Mgcawu District Municipality, Northern Cape Province. The projects will include the following:

Site reference	Project Name and Description
Site 1	Upilanga PV 1 (1 x 100 MW PV facility)
Site 2	Upilanga PV 2 (1 x 100 MW PV facility)
Site 3	Upilanga PV 3 (1 x 350 MW PV facility)
Site 4	Upilanga PV 4 (1 x 350 MW PV facility)
Site 5	Upilanga PV 5 (1 x 350 MW PV facility)
Site 6	Upilanga PV 6 (1 x 100 MW PV facility)
Site 7	Upilanga PV 7 (1 x 100 MW PV facility)
Site 8	Upilanga PV 8 (1 x 100 MW PV facility)
Site 9	Upilanga PV 9 (1 x 100 MW PV facility)

The development footprint for the Upilanga Solar Park is approximately 7000 ha in extent. Currently only the basic assessment processes for the 100MW Upilanga PV1 and Upilanga PV2 facilities are to be undertaken as the first phase of the new projects proposed as part of the Upilanga Solar Park. Potential and registered Stakeholders and I&APs will be notified upon commencement of the environmental processes for the remaining facilities when these proceed.

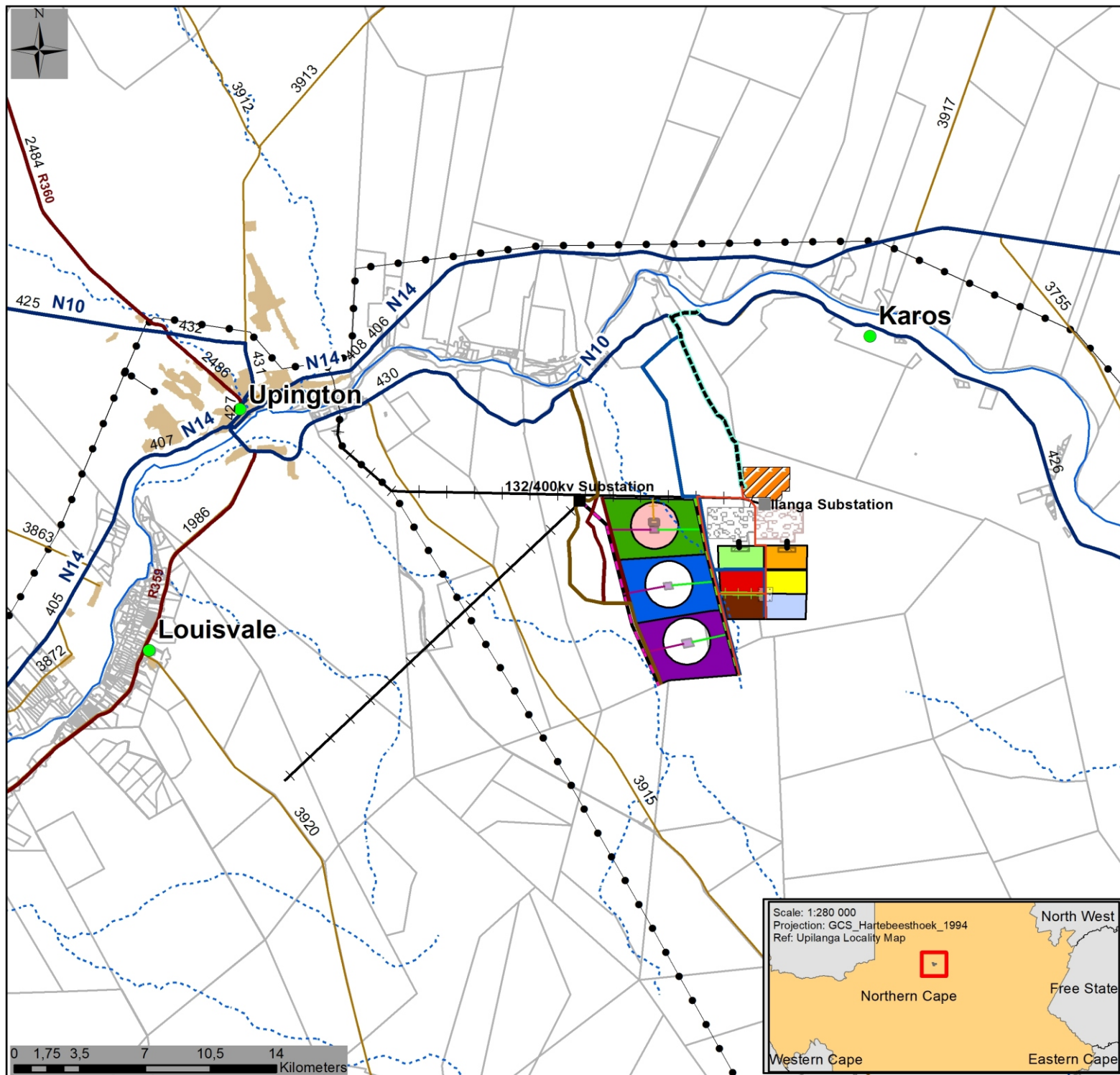
Through a previous environmental process undertaken on the proposed broader Upilanga Solar Park, a number of solar power plants were authorised. These are detailed in the table below:

Site reference	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 1.2	Ilanga CSP 1 (1 x 100MW CSP facility – operational facility)	12/12/20/2056
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 or 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 or Parabolic Trough or Tower)	14/12/16/3/3/2/296



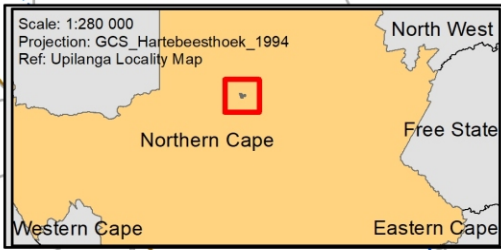
Upilanga Solar Park, Northern Cape Province

Locality Map



Legend

- Town
- Ilanga Substation
- 132/400KV Substation
- Access Roads
- Access Road 1
- Access Road 2
- Authorised and operational Ilanga Access Road
- National Road
- Regional Road
- Main Road
- Authorised and operational Ilanga Water Pipeline
- Water_Pipelines
- 100MW Preferred Grid Connection (PV 6,7,8 and 9)
- New Powerline
- 350MW Grid Connection Alternative 1 to New Powerline
- 350MW Grid Connection Alternative 2 to Authorised Powerline
- Authorised Powerline
- Existing Authorised Powerlines
- Existing Power Line
- Perennial River
- Non-perennial River
- Invertor Underground cable conection
- 350MW CSP Switching Station Connection
- Collector Substation (PV 6,7,8 and 9)
- Invertors
- 350MW PV Switching/Step-up Stations
- 350MW CSP Switching Station
- Ilanga Authorised 1 CSP - Operating
- Ilanga Authorised CSP Site 1.4
- Ilanga Authorised CSP Site 1.3
- Authorised Site 3 CSP
- PV 1 100MW (305,63 ha)
- PV 2 100MW (283,05 ha)
- PV 3 350MW (1018,24 ha)
- PV 4 350MW (1021,57 ha)
- PV 5 350MW (1007,92 ha)
- PV 6 100MW (297,68 ha)
- PV 7 100MW (278,51 ha)
- PV 8 100MW (300,66 ha)
- PV 9 100MW (295,97 ha)
- Urban / Built-up Area



Site reference	Project Name and Description	DEA Reference number
Site 5	Karoshhoek LFTT 2 (1 X 100 MW Linear Fresnel or Parabolic Trough or Tower)	14/12/16/3/3/2/295
Grid connection	Onsite substation/ switching yard and 400kV powerline from site 1.4, 3, 4 and 5 to the Eskom CSP MTS 400kV Powerline proposed to the west of the site	14/12/16/3/3/2/288

DETAILS OF THE PROJECT COMPONENTS

Collectively up to 2 GW will be generated by the facilities already authorised and proposed for the Upilanga Solar Park. The Upilanga PV1 and Upilanga PV2 facilities will comprise of the following key infrastructure and components:

- » Arrays of PV solar panels with a contracted capacity of up to 100MW each.
- » Mounting structures to support the PV panels (utilising either fixed-tilt / static, single-axis tracking, or double-axis tracking systems).
- » On-site inverters (step up facility) to convert power from Direct Current (DC) to an Alternative (AC)
- » 11kV/22kV/33kV collector substation to receive, convert and step up electricity from the PV facility to the 132kV Ilanga Substation;
- » Underground cables to connect to the on-site substations at authorised sites 1.3 and 1.4 and authorised grid connection to the Ilanga substation for PV facilities located at site 1 and 2.
- » Loop in and loop out of the 132kV lines connecting Ilanga Substation to Gordonia Substation or connect to the onsite- collector substation at authorised site 1.3 and 1.4 using underground cables.
- » Cabling between the project's components, to be laid underground where practical.
- » Water pipeline
- » Auxiliary buildings such as offices and workshop areas for maintenance and storage.
- » Temporary laydown areas required during construction.
- » Internal access roads and perimeter security fencing around the development area

OVERVIEW OF SOLAR PV TECHNOLOGY

Solar energy facilities, such as those which utilise PV technology use the energy from the sun to generate electricity through a process known as the **Photovoltaic Effect**. Generating electricity using the Photovoltaic Effect is achieved through the use of the following components:

Photovoltaic Modules

PV cells are made of crystalline silicon, the commercially predominant PV technology, that includes materials such as polysilicon and monocrystalline silicon. PV cells are arranged in multiples / arrays and placed behind a protective glass sheet to form a PV module (Solar Panel). Each PV cell is positively charged on one side and negatively charged on the opposite side, with electrical conductors attached to either side to form a circuit. This circuit

captures the released electrons in the form of an electric current (i.e. Direct Current (DC)). When sunlight hits the PV panels free electrons are released and flow through the panels to produce direct electrical (DC) current. DC then needs to be converted to alternating current (AC) using an inverter before it can be directly fed into the electrical grid.

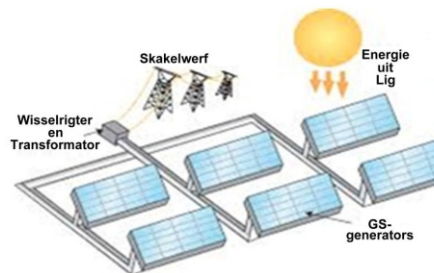


Figure 2: Overview of a PV cell, module and array / panel (Source: pveducation.com).

Inverters

Inverters are used to convert electricity produced by the PV panels from DC into Alternating Current (AC), to enable the facility to be connected to the national electricity grid. In order to connect a large solar facility such as the one being proposed to the national electricity grid, numerous inverters will be arranged in several arrays to collect, and convert power produced by the facility.

Support Structures

PV panels will be fixed to a support structure. PV panels can either utilise fixed / static support structures, or alternatively they can utilise single or double axis tracking support structures. PV panels which utilise fixed / static support structures are set at an angle (fixed-tilt PV system) so as to optimise the amount of solar irradiation. With fixed / static support structures the angle of the PV panel is dependent on the latitude of the proposed development, and may be adjusted to optimise for summer and winter solar radiation characteristics. PV panels which utilise tracking support structures track the movement of the sun throughout the day so as to receive the maximum amount of solar irradiation.

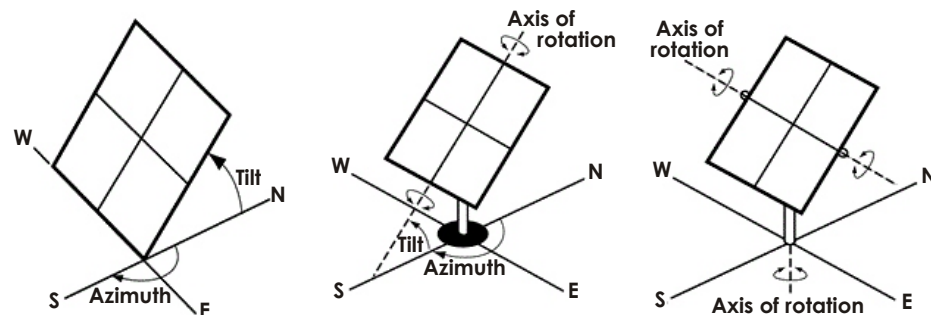


Figure 3: Overview of different PV tracking systems (from left to right: fixed-tilt, single-axis tracking, and double-axis tracking (Source: pveducation.com)).

PV panels are designed to operate continuously for more than 20 years, unattended and with low maintenance.

BASIC ASSESSMENT PROCESS

According to the 2014 EIA Regulations (GNR 326) published in terms of Section 24(5) of the National Environmental Management Act (No. 107 of 1998) (NEMA) (as amended), Emvelo Capital Projects (Pty) Ltd require Environmental Authorisation (EA) from the National Department of Environmental Affairs (DEA) in consultation with the Northern Cape of Environment and Nature Conservation (DENC) for the development and operation of the PV facilities with associated infrastructure associated with the Upilanga Solar Park.

In terms of Section 24(5) of NEMA, the EIA Regulations, 2014 (GNR 326), GNR 114 and Listing Notices (GNR 327, GNR 325, and GNR 324), the applications for EAs for Upilanga PV1 and Upilanga PV2 are subject to the completion of BA processes, as the entire extent of the study area for the projects is located within the Upington REDZ. Each application is required to be supported by comprehensive, independent environmental specialist studies undertaken in accordance with the EIA Regulations, 2014 (as amended).

A BA is an effective planning and decision-making tool. It allows for potential environmental consequences resulting from a proposed activity to be identified and appropriately managed during the construction, operation, and decommissioning phases of development. It also provides an opportunity for the project applicant to be forewarned of potential environmental issues, allows for the resolution of issue(s) identified and reported on as part of the BA processes, and provides opportunity for dialogue with key stakeholders and Interested and Affected Parties (I&APs).

Savannah Environmental has been appointed as the independent environmental consultants responsible for managing the application for Environmental Authorisation (EA) and undertaking the supporting basic assessment processes required to identify and assess potential environmental impacts associated with the project, as well as propose appropriate mitigation and management measures to be contained within an Environmental Management Programme (EMPr). I&APs will be actively involved through the public participation process.

WHAT ARE THE POTENTIAL ENVIRONMENTAL IMPACTS ASSOCIATED WITH THE PROPOSED PROJECT?

The project site will be assessed by specialists to identify the potential for environmental impacts. Specialist studies that are proposed as part of the BA processes include the following:

- » **Ecology and Avifauna:** considering impacts on, fauna, flora and avifaunal impacts, the construction of the solar park and the associated disturbance of vegetation and habitats may affect the ecology and biodiversity of the site.
- » **Soils, Land Use, Land Capability, and Agricultural Potential:** the construction of the facility

may result in soil degradation and/or resource loss through erosion.

- » **Aquatic:** the construction and operation of facility may result in loss of riparian systems, impact on secondary alluvial water courses and increase in sedimentation and erosion within the development footprint.
- » **Heritage (Archaeology and Palaeontology):** disturbance to or destruction of heritage sites and fossils may result during the construction phase through excavation activities.
- » **Visual:** the establishment of an industrial facility of this nature has the potential to affect the visual aesthetics within the area.
- » **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

Site-specific studies will be undertaken to assess the localised impact of the proposed development, in order to delineate areas of sensitivity within the affected farm portions. Once the constraining environmental factors have been determined, the layout for the proposed Upilanga PV1 and Upilanga PV2 facilities can be finalised and presented in the final report to be submitted to the decision-making authority.

PUBLIC PARTICIPATION PROCESS

The sharing of information forms the basis of the public participation process and offers Interested and Affected Parties (I&APs) the opportunity to become actively involved in the Basic Assessment processes. The restrictions enforced in terms of Government Gazette 43096 which placed the country in a national state of disaster limiting the movement of people to curb the spread of the COVID-19 virus has placed some limitations on the commencement and continuation of the public consultation as part of an BA process. Alternative means of undertaking consultation has been designed and will be implemented by Savannah Environmental to ensure that I&APs are afforded sufficient opportunity to raise comments on the project through an interactive web-based platform readily available and accessible to any person illustrating interest in the project and enables the public participation process to be undertaken in line with Regulations 41 to 44 of the EIA Regulations, 2014, as amended. Comments and inputs are encouraged from Interested and Affected Parties (I&APs) during the BA process in order to ensure that potential impacts are considered within the environmental studies.

The public participation process aims to ensure that:

- » Information containing all 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 reasonable opportunity to comment on the proposed project.
- » Adequate review periods are provided for I&APs to comment on the findings of the BA Reports respectively.



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

- » Identifying I&APs, including affected and adjacent landowners and occupiers of land, and relevant Organs of State.
- » Placing site notices at the affected properties.
- » Placing advertisements in a local newspaper.
- » Compiling and maintaining a database of I&APs throughout the BA process.
- » Notifying I&APs of the commencement of the BA process, and distributing the Background Information Document (BID).
- » Notifying I&APs of relevant milestones throughout the BA process.
- » Notifying I&APs of the release of the Basic Assessment Reports for 30-day public review periods.
- » Holding consultation meetings with I&APs at various intervals throughout the process as applicable to provide an opportunity for I&APs to engage with the EIA project team.
- » Notifying I&APs of DEA's final decision on whether to grant or refuse Environmental Authorisation (EA), and the manner in which such a decision may be appealed.

YOUR RESPONSIBILITIES AS AN I&AP

In terms of the 2014 EIA Regulations (GNR 326), your attention is drawn to your responsibilities as an I&AP:

- » In order to participate in this BA process, you must register yourself on the I&AP 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 that you may have in the approval or refusal of the application for the proposed project.

HOW TO BECOME INVOLVED

1. By responding by phone, fax, or e-mail, to the invitation for your involvement.
2. By returning the reply form to the relevant contact person.
3. By taking up the opportunities provided to engage with the project team.
4. By contacting the environmental consultants with queries or comments.
5. By reviewing and commenting on the Basic Assessment Reports within the stipulated 30-day public review periods. Registered I&APs will automatically be notified of the release of the BA Reports for comment, and the closing dates by which comments must be received.

If you consider yourself an I&AP for this project, we urge you to make use of the opportunities created by the public participation process to provide comment, raise issues and concerns which affect and / or interest you, or request further information. Your input forms a key element of the BA 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:

Nicolene Venter

Savannah Environmental (Pty) Ltd

PO Box 148, Sunninghill, Johannesburg, 2157

Tel: 011 656 3237

Fax: 086 684 0547

E-mail: nicolene@savannahsa.com

**To visit the online stakeholder engagement platform
and view project documentation, visit**

www.savannahSA.com

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ENVIRONMENTAL IMPACT ASSESSMENT AND PUBLIC PARTICIPATION PROCESS

UPILENGA PV1 AND UPILENGA PV2 AND ASSOCIATED INFRASTRUCTURE NEAR UPINGTON, NORTHERN CAPE PROVINCE

Registration & Comment Form

July 2020

Return completed registration and comment form to: **Nicolene Venter** or **Ronald Baloyi** of **Savannah Environmental**

Phone: 011 656 3237 / **Mobile (incl. 'please call me'):** 060 978 8396 / **Fax:** 086 684 0547

E-mail: publicprocess@savannahsa.com

Postal Address: PO Box 148, Sunninghill, 2157

Your registration as an interested and/or affected party will be applicable for this project only and your contact details provided are protected by the PoPI Act of 2013

Please provide your complete contact details:

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

I would you like to register as an interested and affected party (I&AP) on the following project's database (please tick the relevant box)

Upilanga Solar Park PV1	<input type="checkbox"/>	Upilanga Solar Park PV2	<input type="checkbox"/>
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In terms of EIA Regulations, 2014, as amended, Regulation 43(1), you are required to register as an I&AP to receive further correspondence regarding the BA process for the projects and to disclose any direct business, financial, personal or other interest which you may have in the approval or refusal of the application (add additional pages if necessary):

Please list your comments regarding your project selection above (add additional pages if necessary):

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

Name & Surname:	
Postal Address:	
Telephone:	
Mobile:	
E-mail:	

SIEN KEERSY VIR AFRIKAANS

JULIE 2020

OMGEWINGSIMPAKEVALUERING
EN
OPENBARE DEELNAMEPROSES

BEOOGDE ONTWIKKELING VAN DIE
UPILANGA SONPARK EN
VERWANTE INFRASTRUKTUUR
NOORD-KAAPPROVINSIE

savannah
environmental

AGTERGRONDINLIGTINGSDOKUMENT (AID)



Emvelo Capital Projects (Edms.) Bpk., 'n onafhanklike kragontwikkelaar van sonkragaanlegte in Suid-Afrika, beoog die ontwikkeling van die Upington Ilanga Sonpark (Upilanga Sonpark) wat bestaan uit fotovoltaïese (FV-) sonkragaanlegte en Konsentrerende Sonkragaanlegte (KSK-aanlegte) met verwante infrastruktuur wat met 'n gefaseerde benadering in werking gestel sal word. Die beoogde terreine is ~30 km suidoos van die dorp Upington in die Noord-Kaaprovinsie geleë. Die Upilanga Sonpark sluit reeds verskeie gemagtige KSK-aanlegte in, insluitend die Karoshoek Een-sonkragaanleg wat reeds in bedryf is, en sal uiteindelik bestaan uit 'n aantal sonkragprojekte wanneer dit voltooi is. Die projekte is om te help om Suid-Afrika se kraguitdaging aan te spreek en om in lyn te wees met die Departement van Minerale Hulpbronne en Energie (DMHE) se Geïntegreerde Hulpbronplan (GHP) 2019, om 'n uiteenlopende kragmengsel na te streef wat afhanklikheid van 'n enkele of 'n paar primêre kragbronne verminder. Dit is die Ontwikkelaar se voorneme om elke FV-sonkragaanleg aan te bied onder die Departement van Minerale Hulpbronne en Energie se Verkrygingsprogram vir Onafhanklike Kragprodusente, terwyl dit terselfdertyd Suid-Afrika se elektrisiteitmengsel diversifiseer en positief bydra tot sosio-ekonomiese en omgewingsvolhoubare groei.

Die eerste fase van die bykomende projekte wat as deel van die Upilanga Sonpark beoog word, bestaan uit twee 100 MW FV-aanlegte, d.i. Upilanga FV 1 en Upilanga FV 2. Elke FV-sonkragaanleg sal as 'n afsonderlike, losstaande projek met 'n afsonderlike projekontwikkelingsmaatskappy, of Spesialedoelmedium (SDM) as die applikant vir elk van die projekte, opgerig word.

Bykomende projekte (soos hieronder gelys) sal oorweeg word in toekomstige fases van die beoogde ontwikkeling en sal aparte OIE-prosesse ondergaan.

DOEL VAN HIERDIE AGERGRONDINLIGTINGSDOKUMENT

Hierdie dokument stel dit ten doel om u, as 'n belangstellende en/of geaffekteerde party (B&GP), te voorsien van

- » 'n oorsig van die projekte wat beoog word om deel van die Upilanga Sonpark te vorm;
- » 'n oorsig van die eerste fase van die projek (Upilanga FV1 en Upilanga FV2);
- » 'n oorsig van die Basiese Evalueeringsprosesse, openbare deelnameproses en spesialisstudies wat onderneem word om die potensiële positiewe en negatiewe regstreekse, onregstreekse en kumulatiewe impakte van die onderskeie projekte wat oorweeg word, te evalueer; en
- » besonderhede van hoe u by die Basiese Evalueeringsprosesse betrokke kan raak, inligting kan ontvang of vraagstukke kan opper wat u dalk kan raak en/of vir u van belang kan wees.

OORSIG VAN DIE BEOOGDE PROJEKTE

Nege FV-projekte word beoog word om deel van die Upilanga Sonpark te vorm. Die projekte word beoog in die Restant van Matjesrivier 41, Gedeelte 2 & 3 van die plaas Matjesrivier 41 en Perseel 944 en sal deel vorm van die Upilanga Sonpark wat sowat 30 km oos van Upington geleë sal wees. Die liggings en eiendomsbesonderhede van die res van die FV's wat beoog

word vanaf terrein 3 tot terrein 9, sal in toekomstige Basiese Evalueeringsprosesse bevestig word. Die terrein is geleë in die regsgebied van die Dawid Kruiper Plaaslike Munisipaliteit en die ZF Mgcawu Distriksmunisipaliteit en omstreke, Noord-Kaaprovinsie. Die projekte sal die volgende insluit:

Terreinverwysing	Projeknaam en Beskrywing
Terrein 1	Upilanga FV 1 (1 x 100 MW FV-aanleg)
Terrein 2	Upilanga FV 2 (1 x 100 MW FV-aanleg)
Terrein 3	Upilanga FV 3 (1 x 350 MW FV-aanleg)
Terrein 4	Upilanga FV 4 (1 x 350 MW FV-aanleg)
Terrein 5	Upilanga FV 5 (1 x 350 MW FV-aanleg)
Terrein 6	Upilanga FV 6 (1 x 100 MW FV-aanleg)
Terrein 7	Upilanga FV 7 (1 x 100 MW FV-aanleg)
Terrein 8	Upilanga FV 8 (1 x 100 MW FV-aanleg)
Terrein 9	Upilanga FV 9 (1 x 100 MW FV-aanleg)

Die ontwikkelingsvoetspoor vir die Upilanga Sonpark is sowat 7 000 ha in omvang. Tans gaan net die basiese evalueeringsprosesse vir die 100 MW Upilanga FV 1- en Upilanga FV 2-aanleg onderneem word as die eerste fase van die nuwe projekte wat as deel van die Upilanga Sonpark beoog word. Potensiële en geregistreerde Belanghebbers en B&GP's sal in kennis gestel word met die aanvang van die omgewingsprosesse vir die res van die aanlegte wanneer hulle voortgaan.

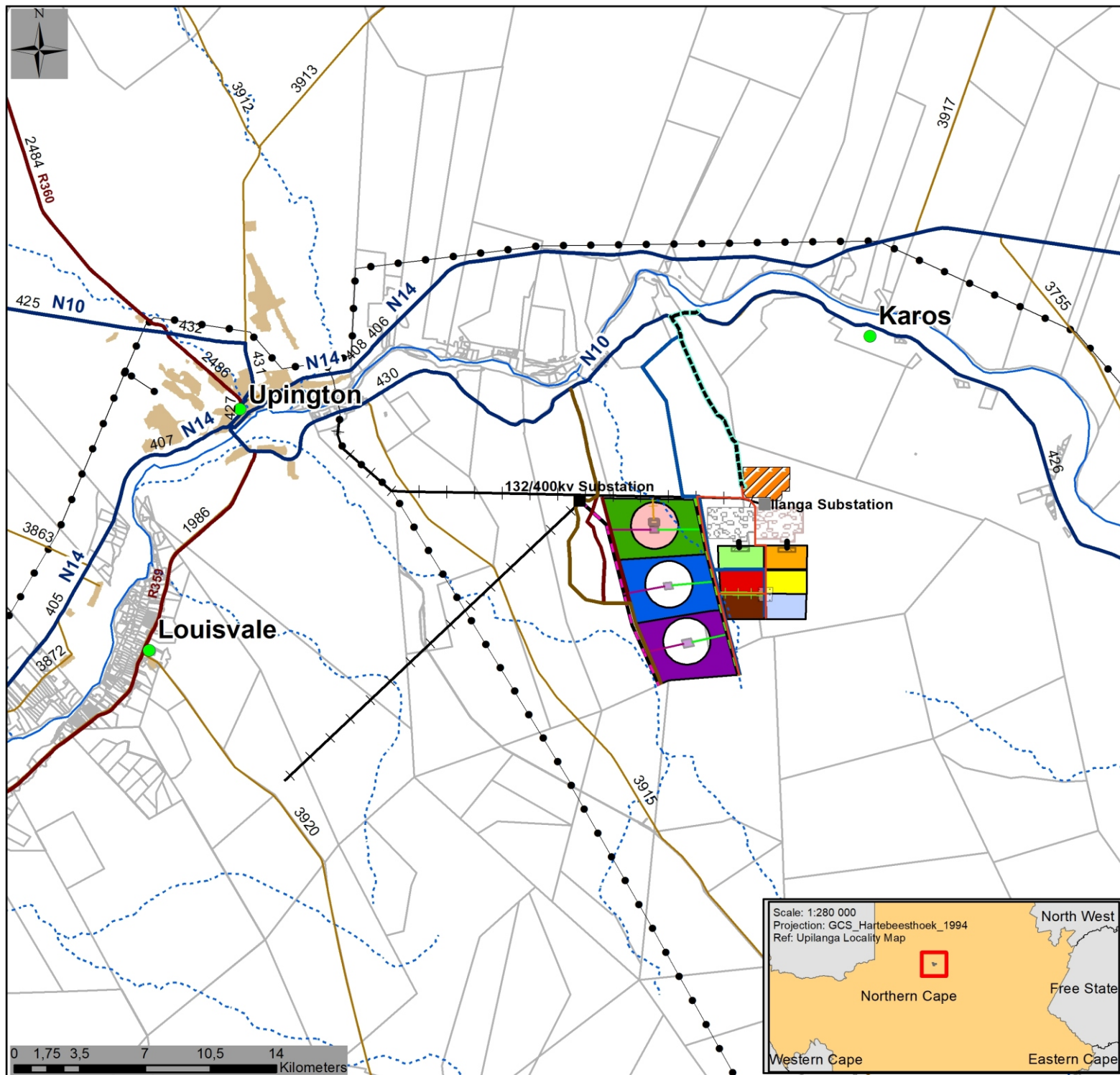
Deur 'n vorige omgewingsproses wat op die beoogde breër Upilanga Sonpark onderneem is, is 'n aantal sonkragaanlegte gemagtig. Dit word in die tabel hieronder uiteengesit:

Terreinverwysing	Projeknaam en Beskrywing	DO-verwysingsnommer
Terrein 2	Karoshoek KFVPS 1 (1 x 25 MW Konsentrerende fotovoltaïese of paraboliese skotteltechnologieprojek)	14/12/16/3/3/2/292
	Karoshoek KFVPS 2 (1 x 25 MW Konsentrerende fotovoltaïese of paraboliese skotteltechnologieprojek)	14/12/16/3/3/2/291
	Karoshoek KFVPS 3 (1 x 25 MW Konsentrerende fotovoltaïese of paraboliese skotteltechnologieprojek)	14/12/16/3/3/2/290
	Karoshoek KFVPS 4 (1 x 25 MW Konsentrerende fotovoltaïese of paraboliese skotteltechnologieprojek)	14/12/16/3/3/2/289
Terrein 1.1	Karoshoek LF 1 (1 x 100 MW Liniêre Fresnel)	14/12/16/3/3/2/293
Terrein 1.2	Ilanga KSK 1 (1 x 100 MW KSK-aanleg – aanleg in bedryf)	12/12/20/2056
Terrein 1.3	Karoshoek PT (1 x 100 MW Paraboliese Trog)	14/12/16/3/3/2/294
Terrein 1.4	Karoshoek LFT 2 (1 x 100 MW Liniêre Fresnel of 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



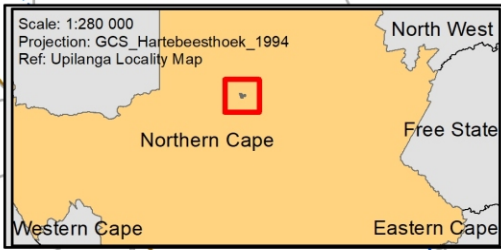
Upilanga Solar Park, Northern Cape Province

Locality Map



Legend

- Town
- Ilanga Substation
- 132/400KV Substation
- Access Roads
- Access Road 1
- Access Road 2
- Authorised and operational Ilanga Access Road
- National Road
- Regional Road
- Main Road
- Authorised and operational Ilanga Water Pipeline
- Water_Pipelines
- 100MW Preferred Grid Connection (PV 6,7,8 and 9)
- New Powerline
- 350MW Grid Connection Alternative 1 to New Powerline
- 350MW Grid Connection Alternative 2 to Authorised Powerline
- Authorised Powerline
- Existing Authorised Powerlines
- Existing Power Line
- Perennial River
- Non-perennial River
- Invertor Underground cable conection
- 350MW CSP Switching Station Connection
- Collector Substation (PV 6,7,8 and 9)
- Invertors
- 350MW PV Switching/Step-up Stations
- 350MW CSP Switching Station
- Ilanga Authorised 1 CSP - Operating
- Ilanga Authorised CSP Site 1.4
- Ilanga Authorised CSP Site 1.3
- Authorised Site 3 CSP
- PV 1 100MW (305,63 ha)
- PV 2 100MW (283,05 ha)
- PV 3 350MW (1018,24 ha)
- PV 4 350MW (1021,57 ha)
- PV 5 350MW (1007,92 ha)
- PV 6 100MW (297,68 ha)
- PV 7 100MW (278,51 ha)
- PV 8 100MW (300,66 ha)
- PV 9 100MW (295,97 ha)
- Urban / Built-up Area



Terreinverwysing	Projeknaam en Beskrywing	DO-verwysingsnommer
Terrein 4	Karshoek LFTT 1 (1 x 100 MW Liniêre Fresnel of Paraboliese Trog of Toring)	14/12/16/3/3/2/296
Terrein 5	Karshoek LFTT 2 (1 x 100 MW Liniêre Fresnel of Paraboliese Trog of Toring)	14/12/16/3/3/2/295
Roosterkonneksie	Interne substasie/skakelwerf en 400 kV kraglyn vanaf terrein 1.4, 3, 4 en 5 tot by die Eskom KSK HTS 400 kV kraglyn wat na die weste van die terrein beoog word	14/12/16/3/3/2/288

BESONDERHEDE VAN DIE PROJEKOMPONENTE

Altesaam sal hoogstens 2 GW opgewek word deur die aanlegte wat reeds gemagtig is en beoog word vir die Uphilanga Sonpark. Die Uphilanga FV 1- en Uphilanga FV 2-aanleg sal uit die volgende belangrike infrastruktuur en komponente bestaan:

- » Reekse FV-sonpanele met 'n gekontrakteerde vermoë van hoogstens 100 MW elk.
- » Monteerstrukture om die FV-panele te dra (aan die hand van hetsy vastehoek-/stilstaande, enkelas- of dubbelasnaspoorstelsels).
- » Interne wisselrigters (verhogingsaanleg) om die krag van 'n gelykstrom (GS) om te sit is 'n wisselstroom (WS).
- » 11 kV/22 kV/33 kV kollektorsubstasie om elektrisiteit van die FV-aanleg af te ontvang, dit om te sit en te verhoog tot by die 132 kV Ilanga Substasie.
- » Ondergrondse kables om die interne substasies te verbind met gemagtigde terrein 1.3 en 1.4 en gemagtigde roosterkonneksie tot by die Ilanga Substasie vir FV-aanlegte wat by terrein 1 en 2 geleë is.
- » In- en uitlus van die 132 kV kraglyne wat die Ilanga Substasie met die Gordonia Substasie of met die interne kollektorsubstasie by gemagtigde terrein 1.3 en 1.4 aan die hand van ondergrondse kables verbind.
- » Kables tussen die projek se komponente, wat ondergronds gelê moet word waar dit prakties moontlik is.
- » n Waterpyplyn.
- » Bygeboue, soos kantore en werkswinkelgebiede vir instandhouding en berging.
- » Tydelike stapelwerfgebiede wat tydens oprigting benodig word.
- » Interne toegangspaaie en 'n sekerheidsheining om die ontwikkelingsgebied se grense.

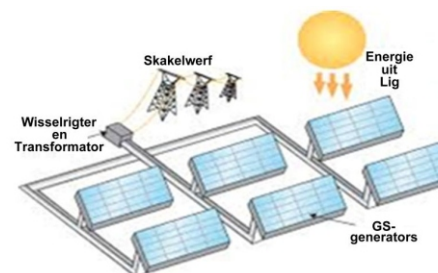
OORSIG VAN FV-SONKRAAGTEGNOLOGIE

Sonkragaanlegte, soos dié wat van FV-tegnologie gebruik maak, benut die son se energie om elektrisiteit op te wek deur 'n proses wat as die **Fotovoltaïese Effek** bekend staan. Opwekking van elektrisiteit aan die hand van die Fotovoltaïese Effek, word verweselik deur die volgende komponente te gebruik:

Fotovoltaïese modules

FV-selle word gemaak van kristalliensilikon, die kommersieel oorheersende FV-tegnologie, wat materiaal soos polisilikon en monokristalliensilikon insluit. FV-selle word in veelvoude/rangskikkings agter 'n beskermende glaspaneel geplaas om 'n FV-module (sonpaneel) te vorm. Elke FV-sel se een kant is positief en die teenoorgestelde kant negatief

gelaai, met elektriese geleiers wat aan beide kante aangebring is om 'n stroombaan te vorm. Hierdie stroombaan vang die vrygestelde elektrone vas in die vorm van 'n elektriese stroom (d.i. gelykstrom (GS)). Wanneer sonlig die FV-panele tref, word vry elektrone vrygestel en dit vloei deur die panele om elektriese gelykstrom (GS) voort te bring. GS moet dan omgesit word na wisselstroom (WS) deur 'n wisselrigter te gebruik voordat dit direk by die kragnet ingevoer kan word.



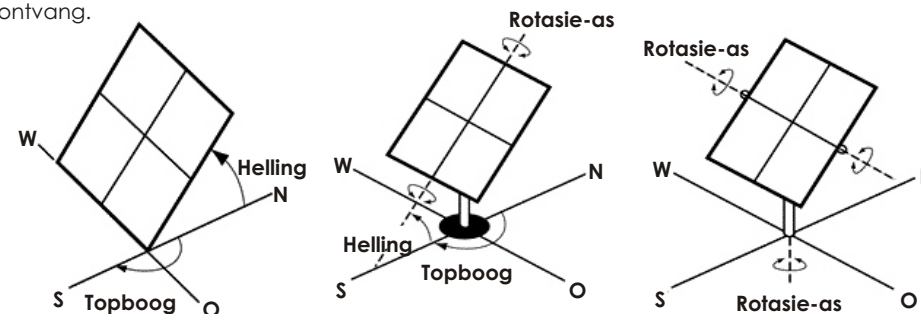
Figuur 2: Oorsig van 'n FV-sel, module en reeks/paneel (bron: pveducation.com).

Wisselrigters

Wisselrigters word gebruik om elektrisiteit wat deur die FV-panele opgewek word van GS na wisselstroom (WS) om te sit sodat die aanleg met die nasionale kragnet verbind kan word. Ten einde 'n groot sonkragaanleg, soos dié een wat beoog word, met die nasionale kragnet te verbind, sal verskeie wisselrigters in verskeie reekse gerangskik word om die krag wat by die aanleg opgewek word, te versamel en om te sit.

Steunstrukture

FV-panele sal op 'n steunstruktuur gemonteer word. FV-panele kan hetsy vaste/stilstaande steunstrukture gebruik, of andersins kan hulle enkel- of dubbelas naspoorsteunstrukture gebruik. FV-panele wat vaste/stilstaande steunstrukture gebruik, word teen 'n hoek gestel (vastehoek FV-stelsel) ten einde die hoeveelheid sonbestraling ten volle te benut. Met vaste/stilstaande steunstrukture, hang die hoek van die FV-paneel af van die breedteligging van die beoogde ontwikkeling en kan verstel word om die kenmerke van somer- en wintersonbestraling ten volle te benut. FV-panele wat naspoorsteunstrukture gebruik, volg die son se beweging deur die dag ten einde die maksimum hoeveelheid sonbestraling te ontvang.



Figuur 3: Oorsig van verskillende FV-naspoorstelsels (van links na regs: vastehoek-, enkelasnaspooring en dubbelasnaspooring (bron: pveducation.com)).

FV-panele is ontwerp om vir meer as 20 jaar ononderbroke, onbeman en met min instandhouding in bedryf te staan.

BASIESE EVALUERINGSPROSES

Ooreenkomstig die OIE-regulasies, 2014 (Staatskennisgewing R326), wat kragtens Artikel 24(5) van die Nasionale Wet op Omgewingsbestuur (Wet 107 van 1998) (NEMA) (soos gewysig) gepubliseer is, benodig Emvelo Capital Projects (Edms.) Bpk. Omgewingsmagtiging (OM) van die Nasionale Departement van Omgewingsake (DO), in ooreenstemming met die Noord-Kaapse Departement van Omgewingsake en Natuurbewaring (DENC), vir die ontwikkeling en bedryf van die FV-aanlegte met verwante infrastruktuur wat verband hou met die Upilanga Sonpark.

Ingevolge Artikel 24(5) van NEMA, die OIE-regulasies, 2014 (Staatskennisgewing R326), Staatskennisgewing R114 en Lyskennisgewings (Staatskennisgewing R327, R325 en R324), is die aansoek om OM's vir Upilanga FV 1 en Upilanga FV 2 onderhewig aan die voltooiing van BE-prosesse aangesien die hele omvang van die studiegebied vir die projekte in die Upington REDZ geleë is. Elke aansoek moet gerugsteun word deur omvattende, onafhanklike spesialisomgewingsstudies wat ingevolge die OIE-regulasies, 2014 (soos gewysig), onderneem word.

'n BE is 'n doeltreffende beplannings- en besluitnemingswerktuig. Dit bring mee dat potensiële omgewingsverwante gevolge wat voortspruit 'n beoogde aktiviteit, geïdentifiseer en na behore tydens die oprigtings-, bedryfs- en uitbedryfstellingsfase van ontwikkeling bestuur word. Dit bied ook 'n geleentheid vir die projekapplikant om vooraf gewaarsku te wees van potensiële omgewingskwessies en maak voorsiening vir die oplossing van ('n) kwessie(s) wat geïdentifiseer en as deel van die BE-prosesse oor verslag gedoen is, en bied ook die geleentheid vir dialoog met sleutelbelanghebbers en belangstellende en geïdentifiseerde partye (B&GP's).

Savannah Environmental is aangestel as die onafhanklike omgewingskonsultant wat verantwoordelik is vir die bestuur van die aansoek om Omgewingsmagtiging (OM) en om die stuwende basiese evalueringprosesse te onderneem wat vereis word om potensiële omgewingsimpakte wat verband hou met die projek te identifiseer en te evalueer, asook om gepaste versagtings- en bestuursmaatreëls aan die hand te doen wat in 'n Omgewingsbestuursprogram (OBPr) vervat moet word. B&GP's sal regdeur die openbare deelnameproses aktief betrokke wees.

WAT IS DIE POTENSIEËLE OMGEWINGSIMPakte WAT VERBAND HOU MET DIE BEOOGDE PROJEK?

Die projekterrein sal deur spesialiste geëvalueer word om die potensiaal vir omgewingsimpakte te identifiseer. Spesialisstudies wat as deel van die BE-prosesse beoog word, sluit die volgende in:

» **Ekologie en Avifauna:** Met inagneming van impakte op fauna, flora en avifauna kan die

oprigting van die sonpark en die gevolglike versteuring van plantegroei en habitats die terrein se ekologie en biodiversiteit dalk affekteer.

- » **Grondsoorte, Grondgebruik, Grondvermoë en Landboupotensiaal:** Die oprigting van die aanleg kan lei tot gronddegradasie en/of 'n hulpbronverlies weens erosie.
- » **Akwaties:** Die oprigting en bedryf van 'n aanleg kan verlies aan oewerstelsels, impak op sekondêre alluviale waterlope en 'n toename in sedimentasie en erosie in die ontwikkelingsvoetspoor tot gevolg hê.
- » **Erfenis (Argeologie en Paleontologie):** Die versteuring of vernietiging van erfenisterreine en fossiele kan tydens die oprigtingsfase voortspruit weens uitgrawingsbedrywighede.
- » **Visueel:** Die oprigting van 'n industriële aanleg van hierdie aard het die potensiaal om die visuele estetika in 'n gebied te beïnvloed.
- » **Maatskaplik:** Die oprigting en bedryf van die aanleg kan 'n positiewe impak op sosio-ekonomiese geleenthede bied betreffende plaaslike werkgeleenthede, asook negatiewe impakte inhou ten opsigte van veiligheid en sekerheid en die kenmerkende grondgebruik.

Terreinspesifieke studies sal onderneem word ten einde die gelokaliseerde impak van die beoogde ontwikkeling te evalueer om sensitiewe gebiede op die geïdentifiseerde plaasgedeeltes af te baken. Sodra die beperkende omgewingsfaktore bepaal is, kan die uitleg vir die beoogde Upilanga FV 1- en Upilanga FV 2-aanleg afgehandel en in die finale verslag voorgelê word wat by die besluitnemende owerheid ingedien sal word.

OPENBARE DEELNAMEPROSES

Die deel van inligting vorm die grondslag van die openbare deelnameproses en bied belangstellende en geïdentifiseerde partye (B&GP's) die geleentheid om aktief by die Basiese Evalueringprosesse betrokke te raak. Die beperkings wat ingevolge Staatskoerant 43096 van krag is, wat die land in 'n nasionale ramptoestand geplaas het en die beweging van mense beperk om die verspreiding van die COVID-19-virus te stuit, het sekere beperkings op die aanvang en hervatting van die openbare ooreenlegging as deel van die BE-proses geplaas. Alternatiewe maniere om ooreenlegging te onderneem is ontwerp en sal deur Savannah Environmental in werking gestel word om te verseker dat B&GP's 'n behoorlike geleentheid kry om kommentaar te oop oor die projek deur 'n interaktiewe webgebaseerde platform wat geredelik beskikbaar en toeganklik is vir enigiemand wat belangstelling in die projek toon en dit moontlik maak dat die openbare deelnameproses wel in lyn met Regulasie 41 tot 44 van die OIE-regulasies, 2014, soos gewysig, onderneem kan word. Kommentaar en insette van belangstellende en geïdentifiseerde partye (B&GP's) tydens die BE-proses word aangemoedig om te verseker dat die omgewingsstudies ooreenlegging aan potensiële impakte skenk.

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 insae;
- » deelname deur B&GP's op so 'n wyse gefasiliteer word dat hulle 'n redelike geleentheid gegun word om kommentaar op die beoogde projek te lewer; en
- » voldoende insaetydperke aan B&GP's gebied word om kommentaar te lewer oor die bevindinge van die onderskeie BE-verslae.



Om doeltreffende deelname te verseker, sluit die openbare deelnameproses in die:

- » identifisering van B&GP's, insluitend geaffekteerde en naburige grondeienaars en -bewoners en tersaaklike staatsinstansies;
- » plasing van terreinkennissgewings by die geaffekteerde eiendomme;
- » opstel en byhou van 'n databasis van B&GP's regdeur die BE-proses;
- » verwittiging van B&GP's van die aanvang van die BE-proses en die verspreiding van die Agtergrondinligtingsdokument (AID);
- » verwittiging van B&GP's van tersaaklike mylpale regdeur die BE-proses;
- » verwittiging van B&GP's van die vrystelling van die Basiese Evalueeringsverslae vir 30-dae openbare insaetydperke;
- » hou van oorlegplegingsvergaderings met B&GP's op verskillende tydstippe regdeur die proses, soos van toepassing, om B&GP's 'n geleentheid te bied om met die OIE-projekspan te skakel; en
- » verwittiging van B&GP's van die DO se finale besluit oor die toestaan of weiering van die Omgewingsmagtiging (OM) en die wyse waarop appèl teen sodanige besluit aangeteken kan word.

U VERANTWOORDELIKHEDE AS 'N B&GP

Kragtens die OIE-regulasies, 2014 (Staatskennissgewing R326), word u aandag gevestig op u verantwoordelikhede as 'n B&GP, naamlik:

- » om uself op die B&GP-databasis te registreer ten einde aan hierdie BE-proses deel te neem;
- » dat u moet toesien dat enige kommentaar rakende die beoogde projek binne die gestipuleerde tydsraamwerke ingedien word; en
- » dat u enige regstreekse sake-, finansiële-, persoonlike- of ander belang wat u dalk in die goedkeuring of weiering van die aansoek vir die beoogde projek kan hê, moet bekendmaak.

HOE OM BETROKKE TE RAAK

1. Deur telefonies, per faks of per e-pos te reageer op die uitnodiging vir u betrokkenheid.
2. Deur die antwoordvorm aan die tersaaklike kontakpersoon terug te besorg.
3. Deur gebruik te maak van die geleentheid wat gebied word om met die projekspan te skakel.
4. Deur die omgewingskonsultante met navrae of kommentaar te kontak.
5. Deur oorsig en kommentaar oor die Basiese Evalueeringsverslae te bied, en wel binne die gestipuleerde 30-dae openbare insaetydperke. Geregistreerde B&GP's sal outomaties in kennis gestel word van die vrystelling van die BE-verslae vir kommentaar, asook van die sluitingsdatums waarteen kommentaar ontvang moet word.

As u uself as 'n B&GP vir hierdie projek ag, moedig ons u aan om gebruik te maak van die geleentheid wat geskep word deur die openbare deelnameproses om kommentaar te lewer en kwessies en knelpunte te opper wat u raak en/of waarin u belangstel of waaroor u meer inligting verlang. U insette vorm 'n belangrike deel van die BE-proses.

Deur die meegaande antwoordvorm in te vul en in te dien, registreer u uself outomaties as 'n B&GP vir hierdie projek en verseker u dat kennis geneem sal word van u kommentaar, knelpunte of navrae wat u betreffende die projek opper.

KOMMENTAAR EN NAVRAE

Rig alle kommentaar, navrae of antwoorde aan:

Nicolene Venter

Savannah Environmental (Edms) Bpk

Posbus 148, Sunninghill, Johannesburg, 2157

Tel: 011 656 3237

Faks: 086 684 0547

E-pos: nicolene@savannahsa.com

Om die aanlynplatform as belanghebbende te besoek en projekdokumentasie te besigtig, besoek

www.savannahSA.com

Kopiereg: Savannah Environmental

OMGEWINGSIMPAAKEVALUERING EN OPENBARE DEELNAMEPROSES

**UPILANGA FV1 EN UPILANGA FV2 EN VERWANTE INFRASTRUKTUUR NABY UPINGTON, NOORD-KAAP
PROVINSIE**

Registrasie- en Kommentaarvorm

Julie 2020

Stuur voltooide registrasie- en kommentaarvorm aan: **Nicolene Venter** en **Ronald Baloyi** van **Savannah Environmental**

Foon: 011 656 3237 / **Selfoon (ook 'please call me'):** 060 978 8396 / **Faks:** 086 684 0547

E-pos: publicprocess@savannahsa.com

Posadres: Posbus 148, Sunninghill, 2157

U registrasie as 'n belanghebbende en/of geaffekteerde party is slegs van toepassing tot hierdie projekte en die voorsiening van u kontakinligting is beskerm deur die Beskerming van Persoonlike Inligting Wet van 2013 (PoPI Act, 2013)

Verskaf asseblief u persoonlike kontak besonderhede:

Naam & Van:			
Organisasie			
Amp- of Postitel			
Posadres:			
Telefoon:		Faks	
Selfoon			
E-pos:			

Stel u belang om te registreer as 'n belangstellende en/of geaffekteerde party (B&GP) op die volgende projekte se databases (merk asseblief toepaslike boks met 'n X)

Upilanga Sonpark FV1		Upilanga Sonpark FV2	
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In terme van die OIE Regulasies, 2014, soos gewysig, Regulasie 43(1), moet u as 'n B&BP registreer om verdere inligting rakende hierdie twee Basiese Evalueeringsprojekte te ontvang en u moet ook u direkte besigheid, finansiële, persoonlike of ander belang wat u mag hê rakende in die goedkeuring of afkeuring van die aansoek, vermeld (gebruik addisionele bladsye indien nodig):

--

Lys u kommentaar rakende die projek per u keuse bo (gebruik addisionele bladsye indien nodig):

--

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

Naam & Van:	
Posadres:	
Telefoon:	
Selfoon:	
E-pos:	

SEE REVERSE SIDE FOR ENGLISH