

APPENDIX C3
BACKGROUND INFORMATION DOCUMENT



MAY
2022



ENVIRONMENTAL IMPACT ASSESSMENT, WATER USE LISENCE APPLICATION AND
PUBLIC PARTICIPATION PROCESSES

**DEVELOPMENT OF THREE SOLAR PV FACILITIES, ASSOCIATED INFRASTRUCTURE AND GRID
CONNECTION FOR THE SA PGM PV PROJECTS LOCATED WITHIN RUSTERNBURG AND
MARIKANA**

NORTH WEST PROVINCE

The development of renewable energy facilities is proposed by various Special Purpose Vehicles (SPVs). The project entails the development of three (3) separate solar Photovoltaic (PV) facilities with a combined contracted capacity of up to 205MW and will be known as SRPM Solar PV, Karee Solar PV, and Marikana Solar PV respectively, each including a grid connection and other associated infrastructure. The Solar PV facilities are based near current Sibanye Stillwater mining operations ~6km east of the town of Rustenburg, 3km east of the town of Photshaneng and 8km east from the town of Marikana within the Rustenburg and Madibeng Local Municipalities respectively, and within the greater Bonjanala Platinum District Municipality, North West Province (NWP). The projects will all tie-in to the electricity grid behind the Eskom meter at the respective Sibanye customer substations.

As of 2019, the Industrial Sector was the leading electricity consumer in South Africa, with up to 56 percent of the total consumption (Ratshomo 2019). Mining and quarrying accounted for 10% of the industrial consumption while non-ferrous metals and non-metallic both accounted for 8% and 5%, respectively (Chamber of Mines of South Africa, 2017,). The NWP is rated as the fourth largest electricity consuming province in South Africa and consumes approximately 12% of the available electricity (Department of Economic Development, Environment, Conservation and Tourism (DEDECT) 2012). This is mainly due to the high demand of the electrical energy-intensive mining and related industrial sector. Approximately 63% of the electricity supplied to the NWP is consumed in its mining sector (DEDECT 2012)

The North West DEDECT's renewable energy strategy aims to improve the North West Province's environment, reduce the NWP's contribution to climate change, and alleviate energy poverty, whilst promoting economic development and job creation in the province whilst developing its green economy. Sibanye Stillwater aims to comply with the Mining industry's Mission to decarbonise.

The successful development of the renewable energy projects will enable Sibanye Stillwater to make a valuable and meaningful contribution towards growing the green economy within the province and South Africa. This will assist the NWP in creating green jobs and reducing Green House Gas emissions, whilst reducing the energy demand on the National Grid.

AIM OF THIS BACKGROUND INFORMATION DOCUMENT

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

- » An overview of the solar PV facilities which form part of the Rustenburg Solar development, and their associated grid connection solutions.
- » An overview of the Scoping and Environmental Impact Assessment (S&EIA) processes for the solar PV facilities, associated grid connection infrastructures, and specialist studies being undertaken to assess the solar PV facilities and their associated grid connection solutions.
- » An overview of the Water Use Licence Application process.
- » Details of how you can become involved in the S&EIA processes, receive information, raise comments that may concern and/or interest you.



OVERVIEW OF THE PROPOSED PROJECTS

A development footprint of approximately up to 230 ha for SRPM Solar PV, up to 210 ha for Karee Solar PV and up to 100 ha for Marikana Solar PV has been identified within the broader combined project sites (approximately 780 ha in extent) for the development of the Rustenburg Solar facilities. Infrastructure associated with each solar PV facility will include the following:

The onsite infrastructure will include:

- » Solar PV array comprising bifacial PV modules and mounting structures, using single axis tracking technology. Once installed, the entire structure will stand up to 5m above ground level.
- » Inverters and transformers.
- » Cabling between the project components.
- » Balance of Plant.
- » On-site facility substation to facilitate the connection between the solar PV facility and Eskom electricity grid. The size and capacity of each of the on-site stations will be 80MVA, 95MVA and 30MVA respectively.
- » An onsite Medium Voltage (MV) switching station forming part of the collector substation.
- » 100MWh Battery Energy Storage System (BESS) per site.
- » Temporary Laydown areas.
- » Access roads, internal roads and fencing around the development area.
- » Up to 132kV Overhead Power Lines (OHPL) – maximum of 30m height with a 15m servitude width
- » Underground LV cabling will be used on the PV sites.

The details on the PV Facilities and grid connection infrastructure are listed below:

PV facilities:

Applicant	Project Name	Generating capacity	Farm Name and No.	Portion No.
SRPM Solar (Pty) Ltd	SRPM Solar PV	80MW	Farm Waterval No. 303	5, 6, 8, 16, and 48
K4 Solar (Pty) Ltd	Karee Solar PV	95MW	Farm Brakspruit No. 299	23
Marikana Solar (Pty) Ltd	Marikana Solar PV	30MW	Farm Middelkraal No. 466	9



Grid connection infrastructure:

Applicant	Project Name	Capacity	Farm Name/s and no/s.	Alternatives	Infrastructure components
SRPM Solar (Pty) Ltd	SRPM Solar PV	11kV	Farm Waterval No. 303	<ul style="list-style-type: none"> » Alternative 1: Farm Waterval 303, RE/16, 14, 9, RE10 RE303,19 » Alternative 2: RE16, 14, 9, RE10, RE303, 19 » Alternative 3: RE16, 14, 9, RE10, RE303, 19 » Alternative to option 2, of both MV rooms with an OHL RE16, 14 	Power line to the Paardekraal and UG2 sub-station
K4 Solar (Pty) Ltd	Karee Solar PV	33kV	Farm Brakspruit No. 299 Portion 23	<ul style="list-style-type: none"> » Alternative 1: Farm Rooikoppies 297, RE/276, 277 » Alternative 2: is an option to avoid some infrastructure and is an extension of Alternative 1 with the addition of crossing portion 42/297 157, 159 » Alternative 3: RE/276, 223, 135, RE/116, 123, 171, 170, 169, 168, 164, 158, 156,155 » Alternative 3b: RE/276, 223, 135, RE/116,297, 123, 171, 170, 169, 168, 164, 158, 156,155, 157, 42 	Power line to the Karee sub-station
Marikana Solar (Pty) Ltd	Marikana Solar PV	88Kv	Farm Middeldkraal No. 466 Portions 9, 12, 7, 36, 5, 3	<ul style="list-style-type: none"> » Alternative 1: farm Middeldkraal 466, Portions 9, 12, 7, 15, 14, 3 » Alternative 2: farm Middeldkraal 466, RE/9, 12, 7, 15, 14, RE/3. » Alternative 3: farm Middeldkraal 466: RE/9, 12, 7, 36, RE/5, River crossing, 18, RE/3. » Alternative addition to Alternative 1 to reach tie in point: RE/3. 	Power line to the Marikana sub-station
N/A	Marikana alternatives from Karee			<ul style="list-style-type: none"> » Alternative 1: Farm Brakspruit No. 299 Portion 23, Farm Rooikoppies 297: 280, RE/329,RE/281,RE/282, 283, 1, 221, 248, 250, 249, 247, RE/415, 244, 122, RE/333; Farm Elandsdrift 467: RE/2, 100, RE/21, 56, 38; Farm Middeldkraal No. 466: RE/22, 48, RE/23, 49, RE/1, 29, 30, 47, 16, 14, Unmarked, RE/3; » Alternative 2: Farm Brakspruit No. 299 Portion 23, Farm Rooikoppies 297: 280, RE/314, RE/5; Farm Elandsdrift 467; Farm Middeldkraal No. 466: 14, Unmarked, RE/3; 	

Refer to Figure 4 for the Locality Map.

OVERVIEW OF SOLAR PV TECHNOLOGY

Solar energy facilities use energy from the sun to generate electricity through a process known as the **Photovoltaic Effect**. This effect refers to photons of light colliding with electrons, and therefore placing the electrons into a higher state of energy to create electricity. The solar fields of the PV facilities will comprise the following components:

Photovoltaic Cells:

A photovoltaic (PV) cell is made of silicone that acts as a semiconductor used to produce the photovoltaic effect. PV cells are arranged in multiples/arrays and placed behind a protective glass sheet to form a PV 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)).

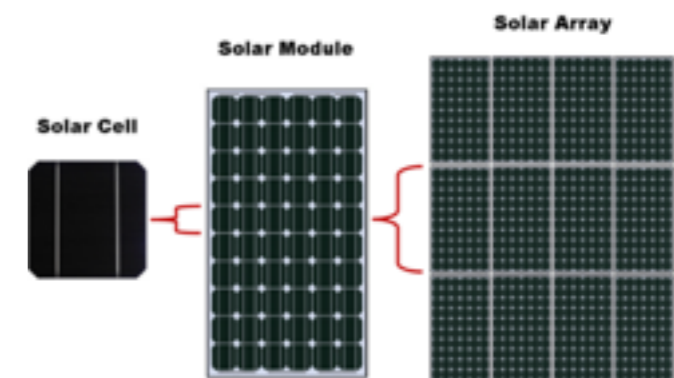


Figure 2: Overview of a PV cell, module, and array/panel (Source: pveducation.com)

A solar PV module is made up of individual solar PV cells connected, whereas a solar PV array is a system made up of a group of individual solar PV modules electrically wired together to form a much larger PV installation. The PV panels will be fixed to support structures to maximise exposure to the sun.



Inverters

Inverters are used to convert electricity produced by the PV cells from Direct Current (DC) into Alternating Current (AC) to enable the facility to be connected to the electricity grid. Numerous inverters will be arranged in several arrays to collect and convert power produced by the facilities.

Support Structures

PV panels will be fixed to support structures. 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) to optimise the amount of solar irradiation received. 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 to receive the maximum amount of solar irradiation.

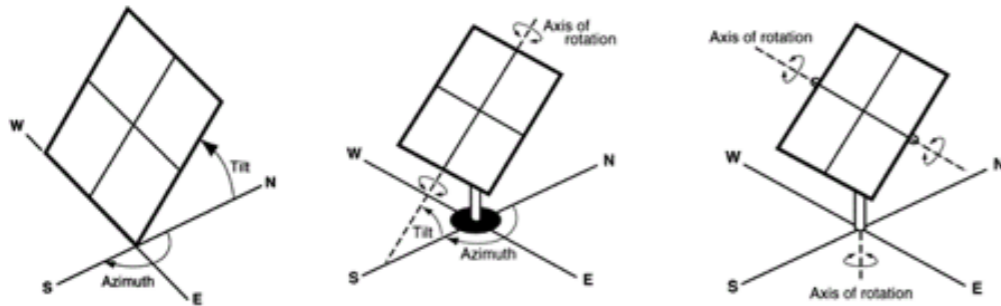


Figure 3: Overview of different PV tracking systems (from left to right: fixed-tilt, single-axis tracking, and double-axis tracking (Source: pveducation.com))

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

Battery Energy Storage System (BESS)

The need for a BESS stems from the fact that electricity is only produced by the Renewable Energy Facility while the sun is shining, while the peak demand may not necessarily occur during the daytime. Therefore, the storage of electricity and supply thereof during peak-demand will mean that the facility is more efficient, reliable and electricity supply more constant.

The BESS will:

- » Store and integrate a greater amount of renewable energy from the Solar PV Facilities into the electricity grid.
- » This will assist with the objective to generate electricity by means of renewable energy to feed into the mine's private grid connection as part of their energy reduction strategy.
- » Proposed footprint of BESS area: ~54000 Square foot.
- » Proposed capacity of battery storage: 100MWh.
- » Proposed technology to be used: Lithium-ion batteries (LFP/NMC or others) (Li-Ion), Lithium capacitors/Electrochemical capacitors (LiC), Redox-flow batteries (RFB).
- » Battery types to be considered: Solid State Batteries and Redox Flow Batteries.

OVERVIEW OF WATER USE LICENCE APPLICATION PROCESS

Water use is defined broadly, and includes taking and storing water, activities which reduce stream flow, waste discharges and disposals, controlled activities (activities which impact detrimentally on a water resource), altering a watercourse, removing water found underground for certain purposes, and recreation. The National Water Act (NWA) (No 36 of 1998) outlines 11 consumptive and non-consumptive water uses:

- » 21(a): Taking water from a water resource;
- » 21(b): Storing water;
- » 21(c): Impeding or diverting the flow of water in a watercourse;
- » 21(d): Engaging in a stream flow reduction activity;
- » 21(e): Engaging in a controlled activity;
- » 21(f): Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, or other conduit;
- » 21(g): Disposing of waste in a manner which may detrimentally impact on a water resource;
- » 21(h): Disposing in any manner of water which contains waste from, or which has been heated in any industrial or power generation process;
- » 21(i): Altering the bed, banks, course, or characteristics of a watercourse;
- » 21(j): Removing, discharging, or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people; and
- » 21(k): Using water for recreational purposes.

Depending on the nature of the development and infrastructure to be constructed, a Water Use Licence (WUL) may be required, and an application must be submitted and approved by the Department of Water and Sanitation (DWS), if listed activities are triggered in terms of Section 21 of the National Water Act.

The WUL application process includes a public participation process, strong B-BBEE motivation and specialist studies (e.g., geohydrological, hydrological, flood line, watercourse delineation, offset studies) to determine the sustainability of the proposed water use. A comprehensive report must be submitted to the DWS for their approval, subject to the availability of free water in the catchment. The applicant is responsible for all costs incurred during the water use licence application process. Subsequent to the issuance of a water use licence, the licensee is bound by compliance conditions that need to be adhered to.



Guidelines to Water Use authorisation

WUL applications are submitted online via the eWULAA (Electronic Water Use Licence (WUL) Application and Authorisation) portal. This ensures that all information presented is kept safely, it allows users to see the current stage of their application and the party responsible for providing information.

There are generally six steps to processing any Water Use Licence Application. The application process is broken up into 3 Phases which need to be completed thoroughly. These steps aim to test the application against the principle of beneficial use in the public interest and specifically against Section 27 of the National Water Act, 1998 (Act No. 36 of 1998) (NWA).

These steps are:

- » Step 1 - Pre-Application process (Phase 1)
- » Step 2 - Application Initiation (Phase 2)
- » Step 3 – Screening (Phase 3)
- » Step 4 - Processing and Finalising
- » Step 5 - Decision by the Delegated Authority
- » Step 6 – Implementation

The Regional Office starts with the implementation of the licence, including issuance and highlighting any conditions that might be attached to the water use licence. An application for a water uses licence can take up to 300 days to process, depending on the complexity of the application, its benefits to the general public and its possible impacts.

Public Participation (PP) is requested by Sections 40 and 42 of the NWA which provide for the responsible authority as well as assessing the likely effect of the proposed licence on the protection, preservation, use, management, development, and control of the water source. A combined Public Participation Process was approved by the DWS & DFFE and the different timeframes regarding consultation have been taken into consideration.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

In accordance with the EIA Regulations, 2014 (as amended) published in terms of Section 24(5) of the National Environmental Management Act (No. 107 of 1998) (NEMA), the applicant requires Environmental Authorisation (EA) from the North West DEDECT, for the development of the proposed projects. In terms of Section 24(5) of NEMA, the EIA Regulations 2014 (as amended) and Listing Notices (GNR 982, GNR 983, GNR 984 and GNR 985). A combined three (3) applications for Environmental Authorisation (EA) will be followed.

Each application is required to be supported by comprehensive, independent environmental studies undertaken in accordance with the EIA Regulations, 2014 as amended.

An EIA is an effective planning and decision-making tools. 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 and allows for the resolution of issue(s) identified and reported on as part of the EIA processes, as well as provides opportunity for dialogue with key stakeholders and Interested and Affected Parties (I&APs).

Savannah Environmental has been appointed as the independent environmental consultant responsible for managing the separate applications for EA and undertaking the supporting EIA processes required to identify and assess potential environmental impacts associated with the projects detailed above, as well as propose appropriate mitigation and management measures to be contained within the Environmental Management Programmes (EMPrs). As the projects are located in close proximity to one another in the same area, a consolidated public consultation process will be undertaken considering all projects detailed above.

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

The development area and the grid connection corridors will be assessed by independent environmental specialists to identify the potential for environmental impacts. Specialist studies that are proposed as part of the EIA processes include the following:

- » **Biodiversity Impact Assessment** – includes ecology, fauna and flora and assesses the potential impact and the associated disturbance of vegetation on the biodiversity of the area (including critical biodiversity areas and broad-scale processes).
- » **Heritage Impact Assessment (Archaeology and Palaeontology)** – which includes archaeology and palaeontology and assesses the potential of disturbance to or destruction of heritage sites and fossils during the construction phase through excavation activities.
- » **Visual Impact Assessment** – which includes the visual quality of the area and assesses the impact of the solar PV facilities and the grid connection solution on the aesthetics within the area.
- » **Social Impact Assessment** – which assesses the positive and negative social impacts associated with the construction and operation of the PV facilities and associated grid connection solution.
- » **Traffic Impact Assessment** – assesses the impact of the developments on traffic and road networks in the area, specifically during the construction phase.

Site-specific studies will be undertaken to assess the potential impact of the proposed development, to delineate areas of sensitivity within the affected farm portions, assess impacts associated with the projects and make recommendations regarding avoidance, management, and mitigation of impacts. Studies will be informed by available information and detailed field investigations undertaken in accordance with the relevant guidelines and protocols. Once the constraining environmental factors have been determined, the layouts for the proposed facilities can be determined and presented in the EIA reporting.



PUBLIC PARTICIPATION PROCESS

The sharing of information forms the basis of the public participation process and offers I&APs the opportunity to become actively involved in the EIA processes. Comments and inputs from I&APs are encouraged to ensure that potential impacts are considered throughout the EIA processes. The public participation process aims to ensure that:

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

In order to ensure effective participation, the public participation processes include the following:

- » Identifying I&APs, including affected and adjacent landowners and occupiers of land, and relevant Organs of State, and recording details within a database.
- » Notifying I&APs of the commencement of the EIA processes in the local printed media and distributing this Background Information Document (BID) to registered I&APs.
- » Providing access to registered parties to an online stakeholder engagement platform, which centralises project information and stakeholder input in a single digital / multi-media (WhatsApp) platform.
- » Providing an opportunity for I&APs to engage with the project team.
- » Placing site notices at the affected project development properties.
- » Placing an advertisement in a local newspaper and using a local radio station announcing the availability of the reports' review and comment period.
- » Notifying I&APs of the release of the reports for review and comment, by which dates written comments must be received and inviting them to attend the public meetings to be held.
- » Virtual meetings with key stakeholders to be held.
- » Providing an opportunity to engage with the project team via appropriate virtual platform (MS Teams / Zoom, etc), multi-media (i.e., SMS / WhatsApp) (to reduce the risks associated with COVID-19) or telephone.

YOUR RESPONSIBILITIES AS AN I&AP

In terms of the EIA Regulations, 2014 as amended) and the DFFE Public Participation Guidelines, 2017, your attention is drawn to your responsibilities as an I&AP:

- » To participate in the EIA processes, you must register yourself on the I&AP database by completing the Registration and Comment Form included in the BID.
- » You are required to disclose any direct business, financial, personal, or other interest that you may have in the approval or refusal of the applications.
- » You must ensure that any comments regarding the proposed projects are submitted within the stipulated timeframes.

HOW TO BECOME INVOLVED

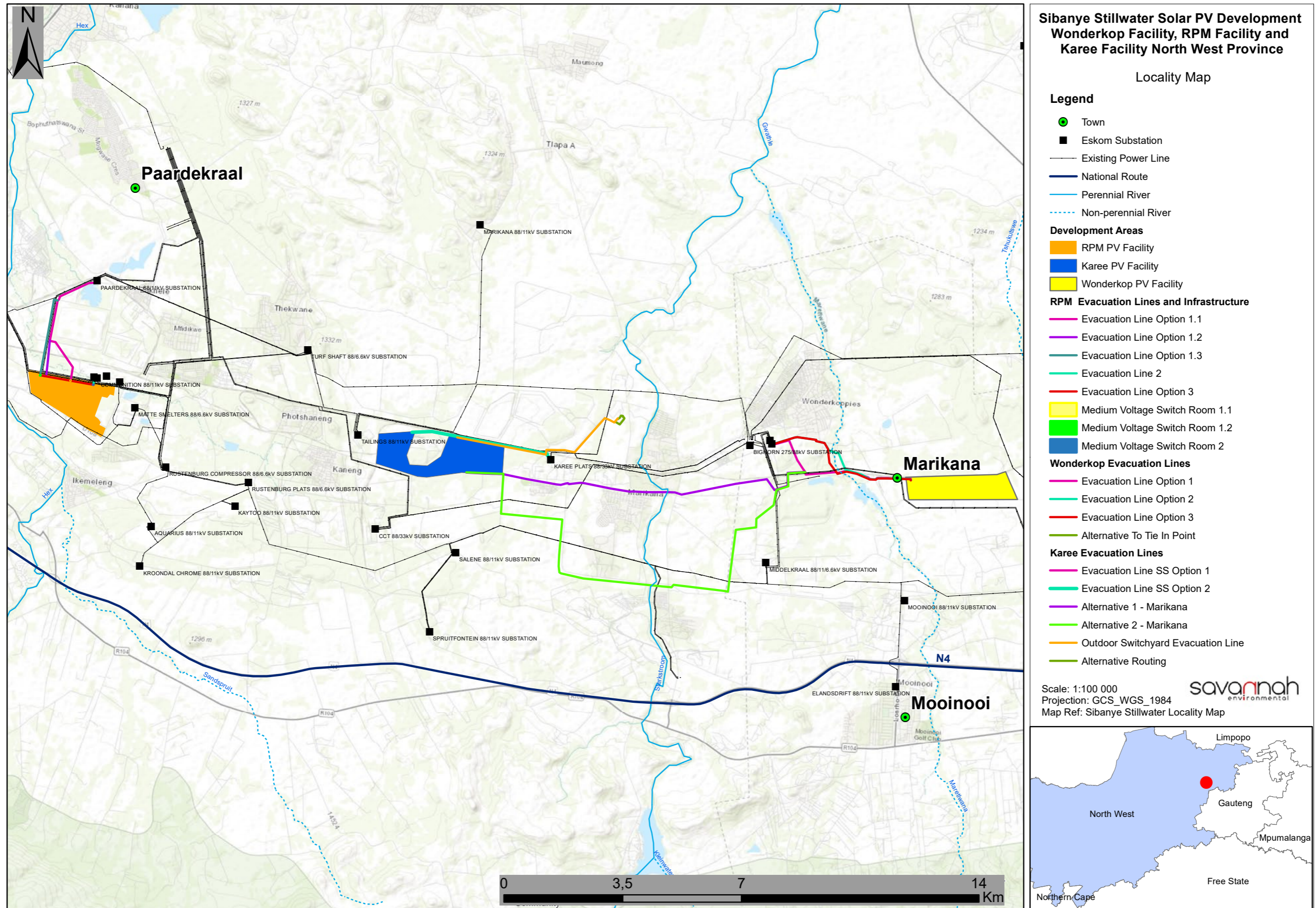
- » By responding by phone, fax, or e-mail to the invitation for your involvement.
- » By returning the reply form to the relevant contact person.
- » By engaging with the project team during the EIA processes.
- » By contacting the environmental consultant with technical queries or comments.
- » By reviewing and commenting on the reports within the stipulated review and comment periods.

If you consider yourself and I&AP for the proposed projects, 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 EIA processes.

By completing and submitting the accompanying reply form, you automatically register yourself as an I&AP for the proposed projects, and are ensured that your comments, concerns, or queries raised regarding the projects will be noted. Please note that all comments received will be included in the project documentation, and this may include personal information.



Figure 4: Locality map of the Sibanye Stillwater Renewable Energy Project





COMMENTS AND QUERIES

Direct all comments, queries or responses to:

Savannah Environmental

Nicolene Venter

P.O. Box 148, Sunninghill, 2157

Tel: 011 656 3237

Mobile: 060 978 8396 (including "please call me")

Fax: 086 684 0547

E-mail: publicprocess@savannahsa.com

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

www.savannahSA.com



ENVIRONMENTAL IMPACT ASSESSMENTS AND PUBLIC PARTICIPATION PROCESS

**DEVELOPMENT OF THREE SOLAR PV FACILITIES, ASSOCIATED INFRASTRUCTURE AND ELECTRICAL GRID
INFRASTRUCTURE FOR THE SA PGM PV PROJECTS LOCATED WITHIN RUSTERNBURG AND MARIKANA, NORTH WEST
PROVINCE**

(DFFE Ref. No.: To be Issued)

Registration & Comment Form

May 2022

*Return completed registration and comment form to: **Nicolene Venter** 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)

SRPM Solar PV Facility	<input type="checkbox"/>	Karee Solar PV Facility	<input type="checkbox"/>	Marikana Solar PV Facility	<input type="checkbox"/>
Electrical Grid Infrastructure	<input type="checkbox"/>				

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 Scoping & EIA 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:			

THANK YOU FOR YOUR REGISTRATION