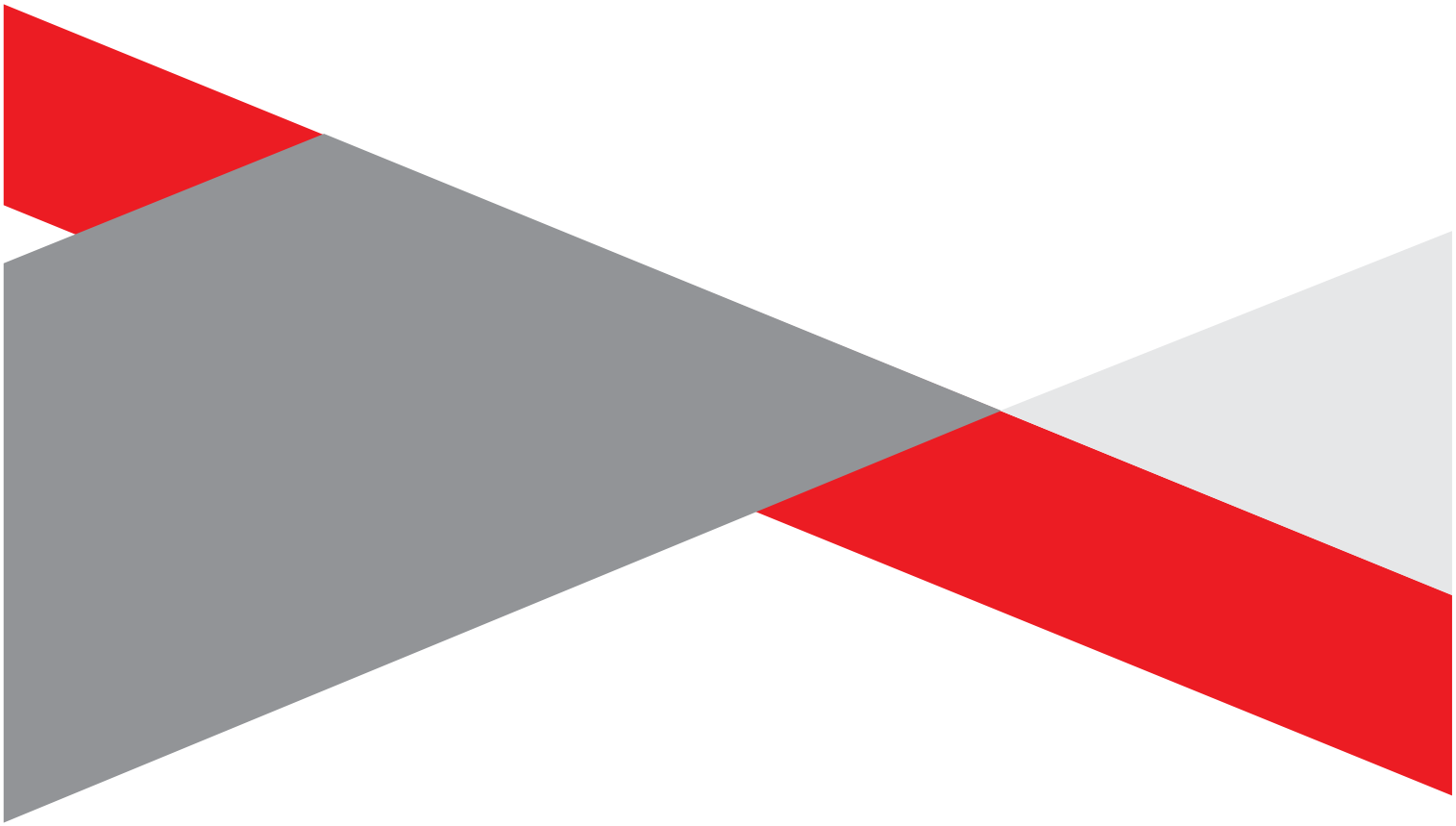
APPENDIX C3

BACKGROUND INFORMATION DOCUMENT



BACKGROUND INFORMATION DOCUMENT (BID)

SEPTEMBER
2022

ENVIRONMENTAL IMPACT ASSESSMENT AND PUBLIC PARTICIPATION PROCESS

PROPOSED DEVELOPMENT OF THE 100MW ZONDEREINDE SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITY AND ASSOCIATED INFRASTRUCTURE NEAR NORTHAM,

LIMPOPO PROVINCE

Letsatsi PV (Pty) Ltd proposes the construction and operation of a Solar Photovoltaic (PV) Energy Facility and associated infrastructure on Portion 1 of the Farm Kopje Alleen 422KQ, located approximately 35km south of Thabazimbi and 18km northwest of Northam, between the R510 in the west and the R511 in the east in the Thabazimbi Local Municipality and Waterberg District in the Limpopo Province (Figure 1).

The Solar PV Energy Facility will have a contracted capacity of up to 100MW and will use single axis or double axis tracking PV technology to harness the solar resource on the project site. The purpose of the facility is to generate electricity for exclusive use by Zondereinde Mine. The construction of the Solar PV Energy Facility aims to increase the Zondereinde Mine's security of electricity supply, enhance the sustainability of its operations, and reduce carbon emissions. The proposed 100MW Zondereinde Solar PV Energy Facility is central to achieving these goals, while simultaneously generating employment opportunities through the construction and operation of the facility.

The grid connection infrastructure for the facility will include underground cabling between project components to the 33kV on-site substation including a battery energy storage system (BESS) preferably constructed adjacent to the on-site substation. BESS sizing and technology specifications are finalised upon detailed design of the plant. 2 x 33kV overhead power lines will be utilised to evacuate the generated power to the consumer substations (i.e., the existing smelter substation and shaft substation).

A development area of up to ~265ha has been identified within the project site (~1185ha) by Letsatsi PV (Pty) Ltd for the development of the Zondereinde Solar PV Energy Facility. Within the development area, a smaller development footprint (~200ha) will be defined for assessment and the suitable placement of infrastructure. Infrastructure associated with the Solar PV Energy Facility will include the following:

» Solar PV array, comprising PV panels and mounting structures.
» Inverters and transformers.
» Cabling between project components.
» A 33kV on-site facility substation to facilitate the connection between the Solar PV Energy Facility and the mine electrical distribution system and a BESS (battery energy storage system).
» Offices, control room/s and a storage facility.
» 2 x 33kV overhead power lines for the distribution of the generated power, which will be connected to the existing smelter substation and shaft substation.
» Temporary laydown areas.
» Access road (gravel), internal gravel roads, firebreaks (4m width) and fencing around the development area.
» Water and sanitation infrastructure

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 proposed Zondereinde Solar PV Energy Facility and associated infrastructure.
» An overview of the Scoping and Environmental Impact Assessment (S&EIA) process and specialist studies being undertaken to assess the Solar PV Energy Facility and its associated infrastructure.
» Details of how you can become involved in the S&EIA process, receive information, or raise comments that may concern and/or interest you.

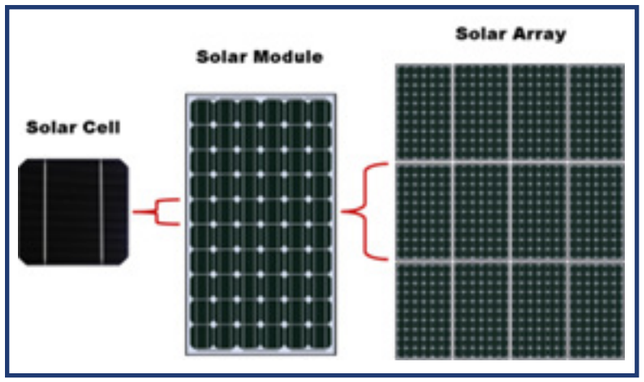
OVERVIEW OF SOLAR PV TECHNOLOGY

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, 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, Modules and Panels:

A 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 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)). A solar PV module is made up of individual solar PV cells connected together, 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.

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



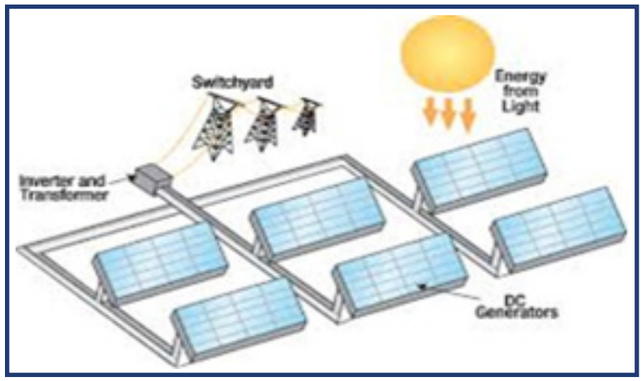


Figure 2: Overview of a PV cell, module, and array / panel (Source: pveducation.com).

Inverters

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

Support Structures

The PV panels will be fixed to support structures to maximise exposure to the sun. They can either utilise fixed / static support structures or alternatively single or double axis tracking support structures. PV panels that utilise fixed / static support structures are set at an angle (fixed-tilt PV system), 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 that utilise tracking support structures track the movement of the sun throughout the day, to receive the maximum amount of solar irradiation.

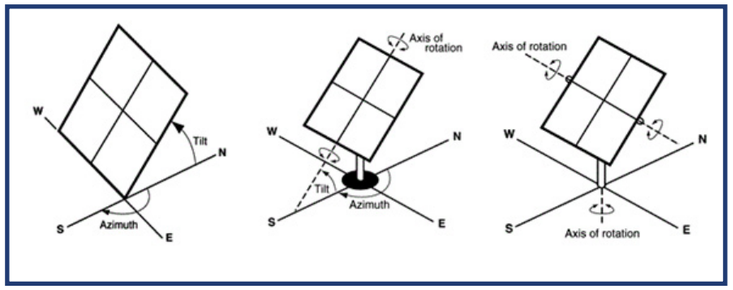


Figure 3: Overview of different PV tracking systems (from left to right: fixed-tilt, single-axis tracking, and double-axis tracking (Source: pveducation.com)).

Bifacial and Monofacial Solar Panel Technology

Bifacial ("two-faced") modules produce solar power from both sides of the panel. Bifacial solar panels have solar cells on both sides, which enables the panels to absorb light from the back and the front (refer to **Figure 4**). Practically speaking, this means that a bifacial solar panel can absorb light reflected off the ground or another material. In general, more power can be generated from bifacial modules for the same area, without having to increase the development footprint.

The optimum tilt for a bifacial module has to be designed so as to capture a big fraction of the reflected irradiation. The use of trackers is recommended so the modules can track the sun's movement across the sky, enabling them to stay directed to receive the maximum possible sunlight to generate power.

Monofacial solar panels capture sunlight on one light-absorbing side. The light energy that cannot be captured is simply reflected away (refer to **Figure 4**).

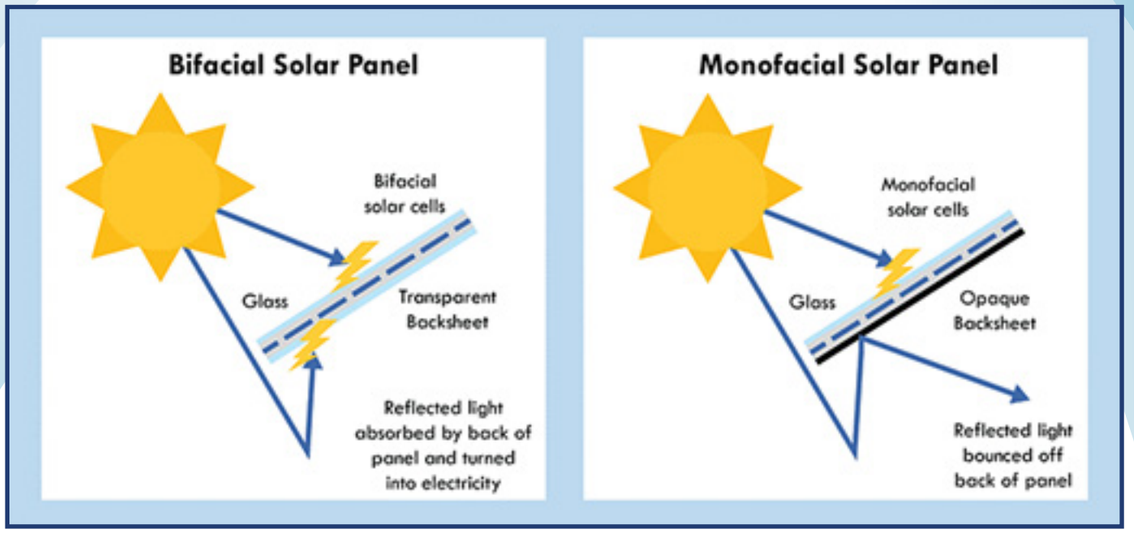


Figure 4: Diagram showing how bifacial and monofacial Solar PV panels work (Source: https://www.solarkobo.com/post/bifacial-solar-panels)

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 Limpopo Department of Economic Development, Environment and Tourism (LDEDET) for the development of the proposed project. In terms of Section 24(5) of NEMA, the EIA Regulations 2014 (as amended) and Listing Notice 1 (GNR 327), Listing Notice 2 (GNR 325) and Listing Notice 3 (GNR 324), the application for the EA for the Zondereinde Solar PV Energy Facility is subject to the completion of a S&EIA process. The application for EA is required to be supported by comprehensive, independent environmental studies undertaken in accordance with Appendix 6 of the EIA Regulations, 2014, as amended, and where relevant, in line with the gazetted protocols.

An EIA 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 and allows for the resolution of issue(s) identified and reported on as part of the EIA process, 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 application for EA and undertaking the supporting S&EIA process 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 the Environmental Management Programme (EMPr) for the facility.

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

Site-specific studies will be undertaken to assess the potential impact of the proposed development in order to delineate areas of sensitivity within the development area, assess impacts associated with the project 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 layout for the proposed facility can be determined and presented in the EIA reporting. Specialist studies that are proposed as part of the EIA process include the following:

- **Terrestrial Ecology 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).
- **Wetland and freshwater Impact Assessment** – includes an assessment of impacts and associated disturbance to drainage lines, rivers, and wetlands at a broad and fine scale.
- **Avifauna Impact Assessment** – includes pre-construction monitoring in terms of the relevant guidelines and assesses the impact on avifaunal habitats and sensitive species.
- **Soils and Agricultural Potential Assessment** – includes land types and assesses the significance of loss of agricultural land and soil degradation and/or erosion.
- **Heritage Impact Assessment (Archaeology and Palaeontology)** – 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** – includes the visual quality of the area and assesses the impact of the Solar PV Energy Facility and associated infrastructure on the aesthetics within the area.
- **Social Impact Assessment** – assesses the positive and negative social impacts.
- **Traffic Impact Assessment** – assesses the impact of the developments on traffic and road networks in the area.

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 process. Comments and inputs from I&APs are encouraged in order to ensure that potential impacts are considered throughout the EIA process. 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.
- An adequate review period is provided for I&APs to comment on the findings of the Scoping and EIA Reports.

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, and recording details within a database.
- Notifying registered I&APs of the commencement of the EIA process and distributing the Background Information Document (BID).
- Providing access to registered parties to an online stakeholder engagement platform, which centralises project information and stakeholder input in a single digital platform.
- Providing an opportunity for I&APs to engage with the project team.
- Placing site notices at the affected property and in the study area.
- Placing an advertisement in a local newspaper.
- Notifying I&APs of the release of the Scoping and EIA Reports for review and comment, meetings to be held and the closing dates by which comments must be received.
- Providing an opportunity to engage with the project team via an appropriate virtual platform and face-to-face consultations, where required.
- Notifying I&APs of LDEDET'S decision on whether to grant or refuse the EA, and the manner in which such decision may be appealed.

YOUR RESPONSIBILITIES AS AN I&AP

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

- To participate in the EIA process, you must register yourself on the I&AP database.
- 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.
- You must ensure that any comments regarding the proposed project are submitted within the stipulated timeframes.

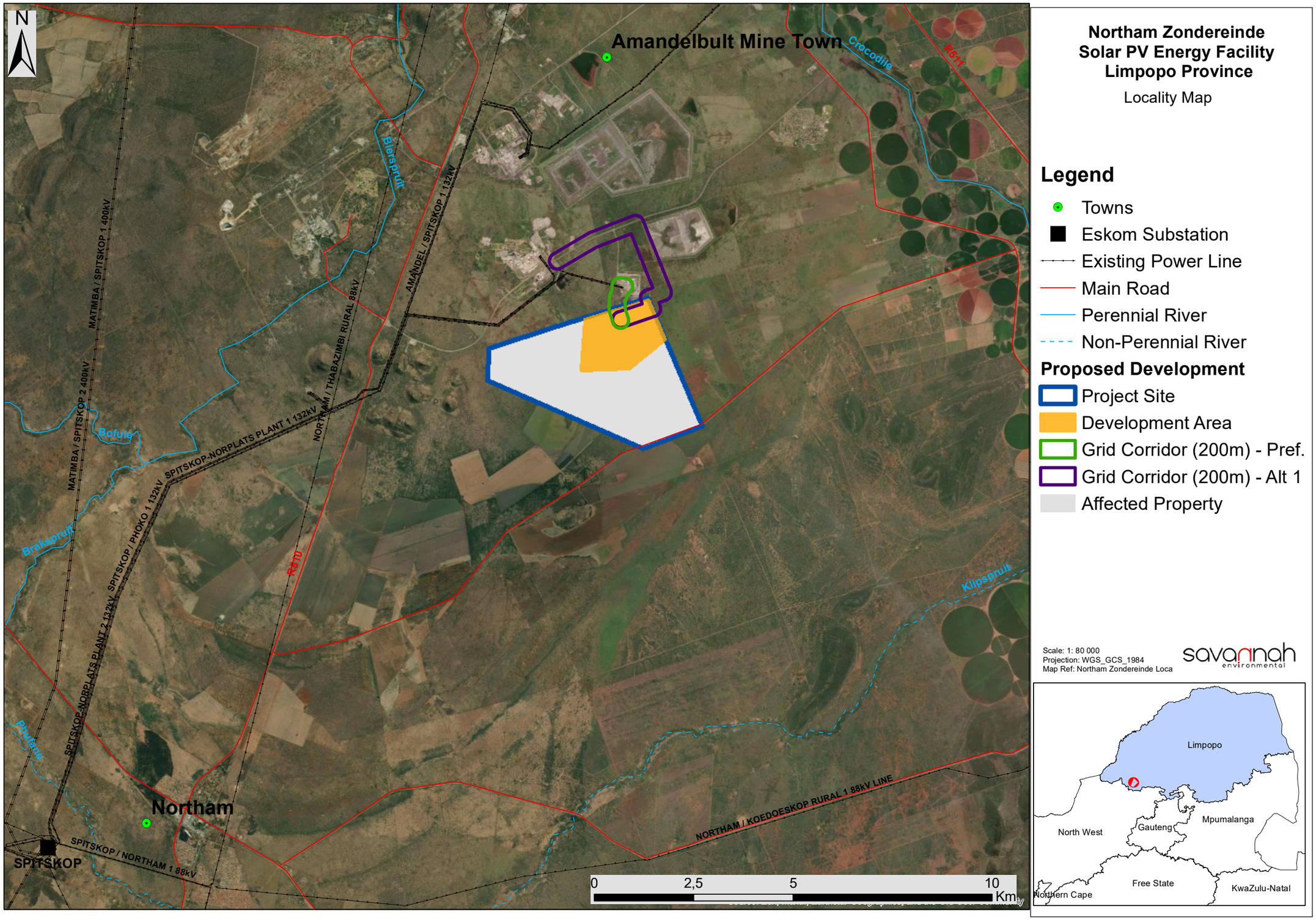
HOW TO BECOME INVOLVED

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

If you consider yourself an I&AP for the proposed 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 EIA process.

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

Figure 1: Locality map



COMMENTS AND QUERIES

Direct all comments, queries or responses to:

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To view project documentation, visit
www.savannahsa.com/public-documents/energy-generation/