savannah environmental

BACKGROUND INFORMATION DOCUMENT (BID)

MARCH
2022

BASIC ASSESSMENT AND PUBLIC PARTICIPATION PROCESS

PROPOSED DEVELOPMENT OF THE 10MWAC BECRUX TWO SOLAR PHOTOVOLTAIC (PV) ENERGY FACILITY, NEAR SASOLBURG,

FREE STATE PROVINCE

Becrux Solar PV Project Two (Pty) Ltd is proposing to develop a 10MWac Solar Photovoltaic (PV) Energy Facility and associated infrastructure on Portion 1 of the Farm Saltberry Plain 137 and the Remaining Extent of Portion 1 of the Farm Roseberry Plain 250, located 4km southeast of the town Sasolburg, within the jurisdiction of the Metsimaholo Local Municipality and the Fezile Dabi District Municipality in the Free State Province. The purpose of the facility will be to generate electricity for exclusive use by Sasol Limited at its Sasolburg operations.

Power generated at the facility will be delivered to Sasol Limited by feeding into the grid through a Wheeling Agreement signed with Eskom and/or direct embedded generation. To evacuate the generated power to Sasol Limited, an 11kV overhead power line will be established to connect the proposed 11kV onsite containerised/non-containerised substation to the existing Sigma Substation. A grid connection corridor up to 200m wide, extending up to ~400m around the footprint of the Sigma Substation, and up to 500m in length, has been identified for the assessment and suitable placement of the grid connection infrastructure within the corridor. This corridor will provide for the avoidance of sensitive environmental areas and features and allow for the micro-siting of the overhead power line within the corridor.

A development area of up to ~30ha and a development footprint of up to ~19.99ha have been identified within the project site (~339.87ha) by Becrux Solar PV Project Two (Pty) Ltd for the development of the Becrux Two Solar PV Energy Facility. Infrastructure associated with the Solar PV Energy Facility will include the following:

- Solar PV array comprising PV modules and mounting structures.
- Inverters and transformers.
- Cabling between the panels.
- 11kV onsite containerised/non-containerised substation.
- 11kV overhead power line for the distribution of the generated power, which will be connected to the existing Sigma Substation.
- Main access gravel road and internal gravel roads.
- Operations and Maintenance (O&M) building, including a sewage/conservancy tank and water storage tanks.
- Site office, workshop area, storage area, and laydown area.
- Fire break and fencing around the site, including an access gate.

AIM OF THIS BACKGROUND INFORMATION DOCUMENT

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

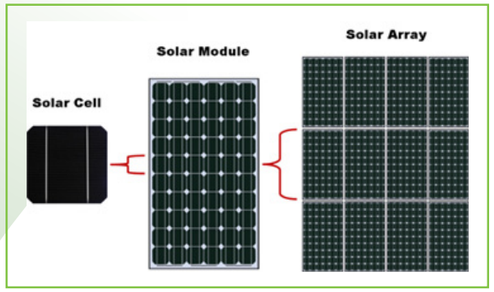
- An overview of the proposed Becrux Two Solar PV Energy Facility and associated infrastructure.
- An overview of the Basic Assessment (BA) process and specialist studies being undertaken to assess the Solar PV Energy Facility, and its associated infrastructure.
- Details of how you can become involved in the BA 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.



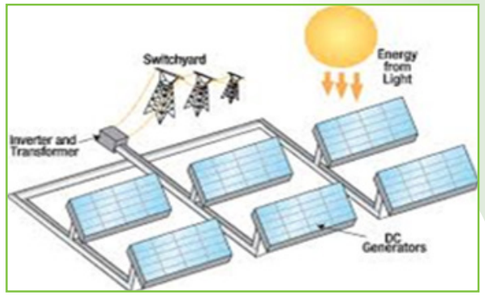


Figure 2: Overview of a PV cell, module, and array / panel (Source: pveducation.com).

Inverters
Inverters are used to convert 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 which 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 which utilise tracking support structures track the movement of the sun throughout the day, to receive the maximum amount of solar irradiation.

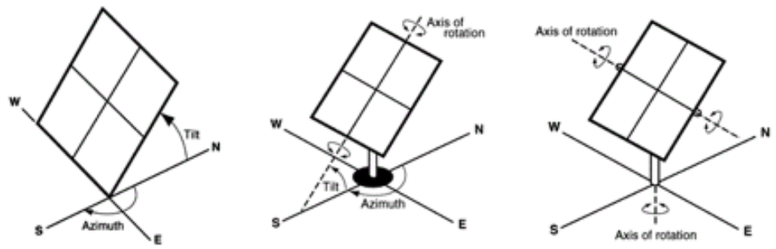


Figure 3: Overview of different PV tracking systems (from left to right: fixed-tilt, single-axis tracking, and double-axis tracking (Source: pveducation.com).

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).

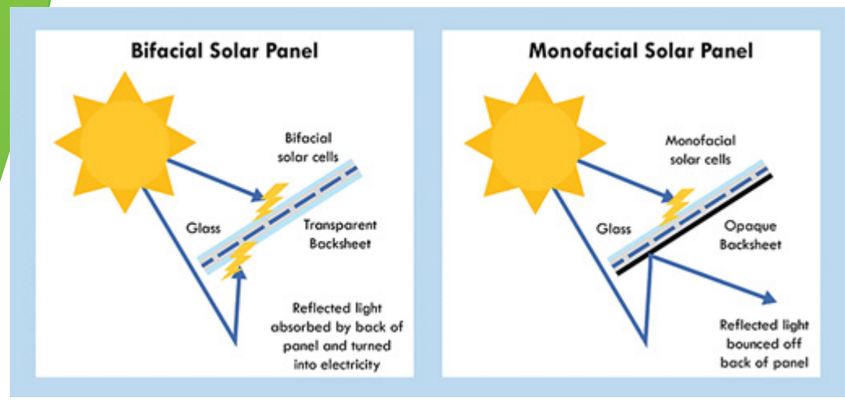


Figure 4: Diagram showing how bifacial and monofacial Solar PV panels work (Source: https://www.solarkobo.com/post/bifacial-solar-panels)

BASIC ASSESSMENT PROCESS

In accordance with the Environmental Impact Assessment (EIA) Regulations, 2014, as amended, published in terms of Section 24(5) of the National Environmental Management Act (No. 107 of 1998) (NEMA), Becrux Solar PV Project Two (Pty) Ltd requires Environmental Authorisation (EA) from the Free State Department of Economic, Small Business Development, Tourism & Environmental Affairs (FSDESTEA) for the development of the proposed project. In terms of Section 24(5) of the NEMA, EIA Regulations 2014 (as amended), Listing Notice 1 (GNR 327) and Listing Notice 3 (GNR 324), the application for EA for the Solar PV Energy Facility is subject to the completion of a Basic Assessment (BA) 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.

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 dialogue with key stakeholders and I&APs.

Savannah Environmental has been appointed as the independent environmental consultant responsible for managing the application for EA, undertaking the supporting BA process required to identify and assess potential environmental impacts associated with the project, and proposing 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 PROJECT?

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 and identified corridors, 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. Specialist studies that are to be undertaken as part of the BA process 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).
- **Avifauna Impact Assessment** – includes an assessment of the impact on avifaunal habitats and sensitive species.
- **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.
- **Soils, Land Use, Land Capability, and Agricultural Potential** - includes land types and assesses the significance of the loss of agricultural land and soil degradation and/or erosion.
- **Heritage (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 Facility and grid connection solution on the aesthetics within the area.
- **Social Impact Assessment** - which assesses the positive and negative social impacts.

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 BA process. Comments and inputs from I&APs are encouraged to ensure that potential impacts are considered throughout the BA 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 Basic Assessment Report.

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.
- 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 BID (this document).
- Making information available on the project, via a dedicated webpage.
- Providing an opportunity for I&APs to engage with the project team.
- Placing site notices at the affected properties.
- Placing an advertisement in a local newspaper.
- Notifying I&APs of the release of the BA Report for a 30-day review and comment period.
- Notifying I&APs of FSDESTEA's decision on whether to grant or refuse the EA, and the manner in which such a 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:

- In order to participate in the 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 timeframe.
- 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.

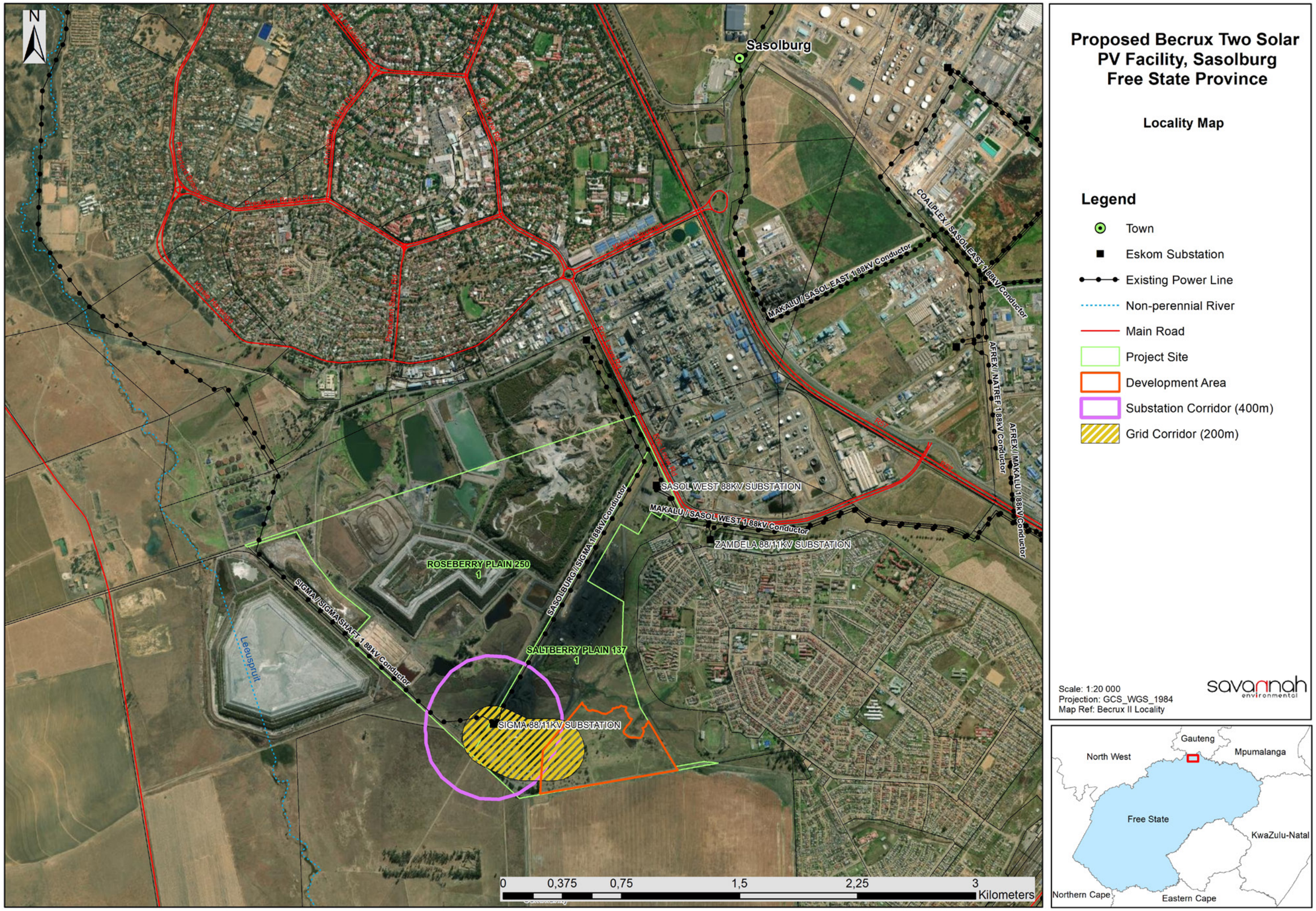
HOW TO BECOME INVOLVED

- 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 on the online stakeholder engagement platform during the BA process.
- By contacting the environmental consultant with queries or comments.
- By reviewing and commenting on the BA Report within the stipulated 30-day review and comment period.

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 BA 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.

Figure 1: Locality Map of the proposed 10MWac Becrux Two Solar PV Energy Facility.



COMMENTS AND QUERIES

Direct all comments, queries or responses to:

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To visit the online stakeholder engagement platform and view project documentation, visit
www.savannahsa.com