



Background Information Document

June 2018

PROPOSED FARM ROODE PAN 150 20MW PHOTOVOLTAIC SOLAR ENERGY FACILITY

Orania

Northern Cape Province



DOCUMENT DESCRIPTION

Client: Solar Capital Pty Ltd

Project Name: The proposed construction of the Farms
Roode Pan 150 20MW PV Solar Energy
Facility in Orania, Northern Cape Province

Report Type: Background Information Document

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1. Introduction

Ecocompliance was appointed by Solar Capital Pty Ltd (herein referred to as Solar Capital) as the lead consultant to manage the Environmental Impact Assessment (EIA) process for the establishment of the proposed photovoltaic solar energy facility (PVSEF) and associated infrastructure located on Portion of Farm Roode Pan 150. The site is located approximately 2km from Orania town in the Northern Cape Province. The proposed project is envisaged to make use of the photovoltaic (PV) technology with a maximum output of approximately 20MW which will be connected to the existing Orania Substation located approximately 2km from the site boundary. The study area is located within the jurisdiction of the Pixley ka Seme District Municipality and Thembelihle Local Municipality. The nature and extent of the proposed facility is explored in more detail in this background document.

2. Aim of the Background information Document

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

- An overview of the proposed PV Solar Energy Facility.
- An overview of the Environmental Impact Assessment process and studies being undertaken to assess the potential impacts, both positive and negative, associated with the proposed project.
- Details of how you can become involved in the process, receive information, or raise issues, which may concern and/or interest you.

3. Project Overview

The facility is proposed on **Portion 2 of Farm Roode Pan (“Farm Roode Pan”)** which is located approximately 2km south of Orania. The western border of the study site is in close proximity to the R369 connecting Hopetown and Petrusville (see locality Map). The study area is considered to be highly desirable for the establishment of a solar facility based on several key factors such as solar resource, climatic conditions, extent of the site, orographic conditions, availability of land, and the site's close proximity to Orania, Hopetown and Petrusville as a potential labour source. A 75kV overhead power line will be used to evacuate power from the facility directly into the Eskom electricity network, however that will be subject to a separate EIA process.

A broader study area of approximately **2467ha** is being considered within which the facility is to be constructed, although the actual development footprint of the proposed facility would be smaller in extent, depending on the findings of the specialist. Therefore, the PV panels and the associated infrastructure can be appropriately placed within the boundaries of the broader site to avoid any identified environmental sensitivities.

Infrastructure associated with the facility will include, *inter alia*:

- Photovoltaic solar panels with a generating capacity of 75MW
- Foundations to support the PV panels;
- An on-site substation, with a direct link to the existing Orania Substation via an overhead powerline (subject to a separate EIA process)
- Cabling between the project components, to be laid underground where practical;
- Internal access roads; and
- Workshop area for maintenance and storage.

The overall aim of the design and layout of the facility is to maximise electricity production through exposure to the solar radiation, while minimising infrastructure, operation and maintenance costs, and social and environmental impacts. The use of solar energy for power generation can be described as a non-consumptive use of natural resources which emits zero greenhouse gas emissions. The generation of renewable energy contributes to South Africa's electricity generating market which has been dominated by coal-based power generation.

4. Photovoltaic Solar Energy Facilities & Power Generation

Solar energy facilities, such as those using PV panels use the 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.

A Photovoltaic Cell is made of silicone which acts as a semiconductor used to produce the photovoltaic effect. Individual PV cells are linked and placed behind a protective glass sheet to form a photovoltaic panel. The PV cell is positively charged on one side and negatively charged on the other side and electrical conductors are attached to either side to form a circuit. This circuit then captures the released electrons in the form of an electric current (direct current). An inverter must then be used to change the direct current (DC) produced to

alternating current (AC). The electricity is then transmitted through a power line for distribution and use.



Figure 1: Photo showing an aerial view of PV panels & from ground level

The PV panels will be fixed to a support structure set at an angle so to receive the maximum amount of solar radiation. The angle of the panel is dependent on the latitude of the proposed facility and the angles may be adjusted to optimise for summer or winter solar radiation characteristics. The PV panels are designed to operate continuously for more than 20 years, unattended and with low maintenance.



Figure 2: Photo showing the aerial view of the PV facility

5. Environmental Impact Assessment Process

In terms of the EIA Regulations published in terms of Section 24(5) of the National Environmental Management Act (NEMA, Act No. 107 of 1998), Solar Capital (Pty) Ltd requires authorisation from the National Department of Environmental Affairs (DEA) in consultation with other government stakeholders for the construction and operation of the proposed renewable energy facility. In terms of sections 24 and 24D of NEMA, as read with the EIA Regulations a scoping & EIA process is required to be undertaken for this proposed project. In order to obtain authorisation, comprehensive, independent environmental studies must be undertaken in accordance with the EIA Regulations.

An EIA is an effective planning and decision-making tool. It allows the potential environmental consequences resulting from a technical facility during its establishment and its operation to be identified and appropriately managed. It provides the opportunity for the applicant to be fore-warned of potential environmental issues, and allows for resolution of the issue(s) reported on in the environmental reports as well as dialogue with interested & affected parties (I&APs).

Solar Capital has appointed Ecocompliance, as the independent environmental consultants, to undertake the required EIA process to identify and assess all the potential environmental impacts associated with the proposed project, and propose appropriate mitigation and management measures in an Environmental Management Programme (EMPr). As part of these environmental studies, I&APs will be actively involved through the public involvement process being undertaken by Ecocompliance

6. Potential Impacts Associated with The Proposed Facility

A number of potential environmental impacts, both positive and negative, associated with the proposed Solar Energy Facility have been identified. These include the following:

Ecology	Construction of the facility and associated disturbance of vegetation may result in impacts on ecology.
Social	The construction and operation of the facility may result in limited job opportunities and could impact on local land use
Agriculture	Potential impacts on agricultural potential and land capability of the site
Visual	The proposed development has a potential impact on visual and aesthetic value of the site
Heritage	Disturbance to or destruction of heritage sites and fossils/palaeontology may result during the construction of the facility
Avifauna	Potential impacts on birds in the area

Specialist studies will be undertaken to identify and assess the significance of these potential impacts. The potential environmental impacts associated with not undertaking the proposed project will also be explored. Specialist studies will be guided by existing information, field observations and input from the public participation process. As an I&AP, your input is considered an important part of this process, and we urge you to become involved.

7. Public Involvement

The sharing of information forms the basis of the public involvement process and offers you the opportunity to become actively involved in the EIA from the outset. Comments and inputs from I&APs during the EIA process are encouraged in order to ensure that potential impacts are considered within the ambit of the study.

The public involvement process aims to ensure that:

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

8. Your Responsibilities As An I&AP

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

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

9. How To Become Involved

- By responding (by phone, fax or e-mail) to our invitation for your involvement which has been advertised in local and national newspapers.
- By returning the attached Reply Form to the relevant contact person.
- By attending the meetings to be held during the course of the project. As a registered I&AP you will automatically be invited to attend these meetings. Dates for public meetings will also be advertised in local and regional newspapers.

- By contacting the consultants with queries or comments.
- By reviewing and commenting on the draft Scoping and EIA Reports within the stipulated 30-day review periods.

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

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

10. Comments & Queries

Direct all comments, queries or responses to:

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Locality Map

