

BACKGROUND INFORMATION DOCUMENT

Basic Assessment for the proposed Rudolph Solar PV 1 near Viljoenskroon, Free State Province

1. Introduction

The activity entails the development of an up to 200MW photovoltaic solar facility and associated infrastructure on the Remaining Extent of the Farm Rudolph No. 48, situated within the Moqhaka Local Municipality area of jurisdiction and within a Renewable Energy Development Zone. The town of Viljoenskroon is located approximately ~21km southeast of the proposed development (refer to the attached locality map).

The project entails the generation of up to 200MW electrical power through photovoltaic (PV) panels. The total footprint of the project will approximately be 582 hectares (including supporting infrastructure on site). The property on which the facility is to be constructed will be leased by Rudolph Solar PV 1 (Pty) Ltd from the property owner, for the lifespan of the project (minimum of 20 years).

Depending on the economic conditions following the lapse of this period, the facility may either be decommissioned or the power purchase agreement may be renegotiated and extended. The purpose of this background information document (BID) is to provide interested and affected parties (I&APs) with:

- Information on the need for a Basic Assessment (BA);
- An overview of the proposed solar power plant;
- An overview of the BA process and specialist studies being conducted to explain the potential impacts associated with the proposed facilities; and
- Details of how I&APs may become involved in the process, receive information, or raise issues, which may concern and/or interest them.

2. The need for an BA

The EIA Regulations, 2014 (GNR 517, as amended in 2021) published in terms of the National Environmental Management Act (Act No. 107 of 1998) determine that an environmental authorisation is required for certain listed activities, which might have detrimental impacts on the environment. The following activities have been identified with special reference to the proposed development and are listed in the EIA Regulations:

- GNR. 517 (2021) Listing Notice 1, Activity 11(i): *"The development of facilities or infrastructure for the transmission and distribution of electricity outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts."*
- GNR. 517 (2021) Listing Notice 1, Activity 24(ii): *"The development of a road (ii) with reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 meters."*
- GNR. 517 (2021) List Notice 1, Activity 28(ii): *"Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture or afforestation on or after 1998 and where such development (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare."*
- GNR. 517 (2021) Listing Notice 1, Activity 56 (ii): *"The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre (ii) where no reserve exists, where the existing road is wider than 8 metres..."*
- GNR. 517 (2021) Listing Notice 2, Activity 1: *"The development of facilities or infrastructure for the generation of electricity from a renewable resource"*

where the electricity output is 20 megawatts or more...”

- GNR. 517 (2021) Listing Notice 2, Activity 15: “The clearance of an area of 20 hectares or more of indigenous vegetation.”
- GNR. 517 (2021), Listing notice 3, Activity 4(b)(i)(bb)(ee)(gg): “The development of a road wider than 4 metres with a reserve less than 13,5 metres (b) in the Free State, (i) outside urban areas and within (bb) National Protected Area Expansion Strategy, (ee) critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans and (gg) areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, excluding disturbed areas.”
- GNR. 517 (2021), Listing Notice 3, Activity 10(b)(i)(bb)(ee)(gg)(hh): “The development and related operation of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres (b) in the Free State (i) outside urban areas and within (bb) National Protected Area Expansion Strategy, (ee) Critical Biodiversity Areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans, within (gg) areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, excluding disturbed areas and (hh) Areas within a watercourse or wetland, or within 100 metres from the edge of a watercourse or wetland.”
- GNR. 517 (2021) Listing Notice 3, Activity 12(b)(i)(ii)(iv): “The clearance of an area of 300 square metres or more of indigenous vegetation (b) in the Free State (i) within any critically endangered or endangered

ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004, (ii) within critical biodiversity areas identified in bioregional plans and (iv) areas within a watercourse or wetland; or within 100 metres from the edge of watercourse or wetland.”

- GNR. 517 (2021), Listing Notice 3, Activity 18(b)(i)(bb)(ee)(gg)(hh): “The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre (b) in the Free State (i) outside urban areas, within (bb) National Protected Area Expansion Strategy, (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans, (gg) areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, excluding disturbed areas and (hh) Areas within a watercourse or wetland; or within 100 metres from the edge of a watercourse or wetland.”

Being listed under Listing Notice 1, 2 and 3 (GN.R. 517) implies that the development is considered as potentially having a significant impact on the environment. However, since the projects are located in the Klerksdorp phase 2 Renewable Energy Development Zones (REDZ) a ‘basic assessment (BA) process’ is required as described in Regulation 19 and 20, for each of the developments in order to obtain EA. The Basic Assessment process involves the identification and assessment of environmental impacts through specialist studies, the recommendation of appropriate mitigation measures as well as public participation.

3. Project description

The activities entail the development of a PV solar power plant and associated infrastructure on Remaining Extent of the Farm Rudolph No. 48, situated within the Moqhaka Local Municipality



area of jurisdiction and within a Renewable Energy Development Zones (REDZ), Free State Province. The key components of the individual proposed projects are described below:

- PV Panel Array - To produce up to 200MW, the proposed facility will require numerous linked cells placed behind a protective glass sheet to form a panel. Multiple panels will be required to form the solar PV arrays which will comprise the PV facility. The PV panels will be tilted at an optimal angle in order to capture the most sun.
- Wiring to Inverters - Sections of the PV array will be wired to inverters. The inverter is a pulse width mode inverter that converts direct current (DC) electricity to alternating current (AC) electricity at grid frequency.
- Connection to the grid - Connecting the array to the electrical grid requires transformation of the voltage from 480V to 33kV to 132kV. The normal components and dimensions of a distribution rated electrical substation will be required. Output voltage from the inverter is 480V and this is fed into step up transformers to 132kV. An onsite substation will be required on the site to step the voltage up to 132kV, after which the power will be evacuated into the national grid via the proposed power line. It is expected that generation from the facility will connect to the national grid. Corridor will cover options to connect to Mercury Substation, Existing Eskom lines with capacity and Eskom Switching stations of other Mulilo projects currently under development.
- Supporting Infrastructure – All associated infrastructure will be constructed within the limits of the infrastructure and ancillary complex which will include an on-site substation, Battery Energy Storage

System, Operations and Maintenance buildings etc.

- Battery storage –Battery Storage Facilities with a maximum height of 4.5m and a capacity of 2500MWh will be installed in a 6-hectare area.
- Roads –Access is most likely to be obtained via R502 Regional Road. This will be confirmed in the Traffic Impact Assessment which has been commissioned. An internal site road network will also be required to provide access to the solar field and associated infrastructure.
- Fencing - For health, safety and security reasons, the facility will be required to be fenced off from the surrounding farm. Fencing with a height of 4 meters will be used.

4. Specialist studies to be conducted

There are a number of environmental impacts, both positive and negative that are associated with photovoltaic solar energy facilities. Specialist studies will be conducted to identify and assess these potential impacts. Specialist studies will be guided by existing information, field observations and input from the public participation process. For these projects, the following specialist studies have been identified as relevant:

- Heritage Impact Assessment
- Ecological Impact Assessment
- Wetland Assessment
- Visual Impact Assessment
- Soil, Land Capability and Agricultural Potential Study
- Social Impact Assessment
- Avifaunal Study
- Palaeontological Impact Assessment
- Traffic Impact Assessment

5. The BA process and timeline for the projects

Public participation is an integral part of the BA process and aims to involve Interested and Affected



Parties (I&APs) in the process by notifying them of the proposed project and encouraging them to voice their issues and concerns.

The process undertaken will be transparent and allow I&APs to comment on the project or raise concerns, which will be included and considered in the BA Report. Table 1 indicates the key steps of the BA process and the timelines for the project.

- Reviewing and commenting on the reports within the stipulated public review periods.
- The public review period will run from Thursday 13 July to Monday 14 August 2023

7. Comments and queries

All comments and queries may be directed to the following contact person:

Contact person: Austin Sharkey
Telephone: 083 747 6717 (Cell)
Electronic mail: paradys@solis-environmental.co.za

Table 1: Key steps of the BA process

Activity	Prescribed timeframe	Timeframe
Public participation (BID)	30 Days	13 July – 14 August 2023
Conduct specialist studies	-	June/July 2023
Submit application form and Draft Basic Assessment Report	-	August 2023
Public participation (Draft BAR)	30 Days	August / September 2023
Submit Final Basic Assessment Report	106 Days	October 2023
Decision	107 Days	December 2024
Public participation (decision) & submission of appeals	20 Days	January 2024

6. Your involvement

I&APs include individuals, communities or groups whose interest may be positively or negatively affected by the proposed development. You may get involved in the public participation process by:

- Registering as an I&AP.
- Submitting your issues, concerns and questions in writing by sending an email to paradys@solis-environmental.co.za
- Attending any public meetings which may be held during the course of the BA process. As a registered I&AP you will automatically be invited to attend these meetings.