BACKGROUND INFORMATION DOCUMENT

Environmental Impact Assessment for the proposed Luckhoff Solar 4 Photovoltaic Solar Energy Facility near Luckhoff, Free State Province

1. Introduction

The activity entails the development of an up to 240MW photovoltaic solar facility and associated infrastructure on Farm Klein Palmietfontein No. 370; Farm Vijeboom No. 714; and Farm Rorich's Hulp No. 505, Registration Division Fauresmith, situated within the Letsemeng Local Municipality area of jurisdiction. The town of Luckhoff is located approximately ~500 m south-east of the proposed development (refer to the attached locality map).

The project entails the generation of up to 240MW electrical power through photovoltaic (PV) panels. The total footprint of the project assessment area will be approximately 388 hectares (including supporting infrastructure on site). The property on which the facility is to be constructed will be leased by Luckhoff Solar 4 (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 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 requirements for an Environmental Impact Assessment (EIA);
- An overview of the proposed solar energy facility;
- An overview of the EIA process and specialist studies being conducted to explain the potential impacts associated with the proposed facilities; and
- Details on 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 EIA

The EIA Regulations, 2014 (GN. R.983 as amended by GN. R.326 in 2017) and associated Listing Notices, published in terms of the National Environmental Management Act (No. 107 of 1998) identify certain activities, which may have detrimental impacts on the environment. These activities may not be undertaken without Environmental Authorisation (EA) from a Competent Authority (CA). The following activities have been identified with special reference to the proposed development and are listed in the EIA Regulations:

- GNR. 327 (2017) 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. 327 (2017) 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. 327 (2017) Listing 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. 327 (2017) 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. 325 (2017) 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. 325 (2017) Listing Notice 2, Activity 15: *"The clearance of an area of 20 hectares or more of indigenous vegetation."*
- GNR. 324 (2017) Listing Notice 3, Activity 4 (b)(i)(ee)(gg): *"The development of a road wider than 4 metres with a reserve less than 13,5 metres within (b) the Free State, (i) outside urban areas, (ee) within critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans, (gg) Areas within… 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. 324 (2017) Listing Notice 3, Activity 10 (b)(i)(ee)(gg): *"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, (ee) critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans and (gg) Areas within… 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve."*

Based on the Listed Activities triggered, the Application for Environmental Authorisation is subject to the completion of a full Scoping and EIA process as described in Regulations 21-23. The Scoping and EIA 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 Farm Klein Palmietfontein No. 370; Farm Vijeboom No. 714; and Farm Rorich's Hulp No. 505, Registration Division Fauresmith, situated within the Letsemeng Local Municipality area of jurisdiction, Free State Province. The key components of the individual proposed projects are described below:

- PV Panel Array - To produce up to 240MW, 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 to step the voltage up to 132kV, where after the electricity will pass to an offsite facility substation. The power will be evacuated into the national grid via a proposed power line. It is expected that generation from the facility will connect to the national grid.
- 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 – A Battery Energy Storage System (BESS) will be installed, covering an area up to ~5 hectares.
- Roads – Access will be obtained via existing gravel roads located adjacent to the site. 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 3.5 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 EIA process and timeline for the projects

Public participation is an integral part of the EIA 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 respective Scoping and EIA Reports. Table 1 indicates the key steps of the EIA process and the timelines for the project.

Table 1: Key steps in the EIA process

Activity	Prescribed timeframe	Timeframe
Public participation (BID)	30 Days	July/August 2023
Conduct specialist studies	-	June/July 2023
Submit application form and Draft Scoping Report	-	August 2023
Public participation (Draft Scoping Report)	30 Days	August / September 2023
Submit Final Scoping Report	44 Days	September 2023
Approval of FSR	43 Days	November 2023
Submit Draft EIA Report	106 Days	December 2023
Public Participation (DEIR)	30 Days	December 2023
Submit FEIR &EMPr	-	January 2024
Decision	107 Days	April 2024
Public participation (decision) & submission of appeals	20 Days	May 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 vivienne@solis-environmental.co.za.
- Attending any public meetings which may be held during the course of the EIA

process. As a registered I&AP you will automatically be invited to attend these meetings.

- Reviewing and commenting on the reports within the stipulated public review periods.

7. Comments and queries

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

Contact person: Vivienne Vorster
Telephone: 082 449 5356 (Cell)
Electronic mail:
vivienne@solis-environmental.co.za