



ENVIRONAMICS

Environmental Consultants

BACKGROUND INFORMATION DOCUMENT

Environmental Impact Assessment for the proposed Mira Solar PV Project One near Bloemfontein, Free State Province

1. Introduction

The activities entail the development of an up to 400 MW photovoltaic solar energy facility and associated infrastructure (including an on-site substation, grid connection, access roads and battery storage system). The facility will be located on Farm DieVlakte No. 1950 and the Remaining extent of Farm Brandkop No. 702, Registration Division Bloemfontein RD, situated within the Mangaung Metropolitan Municipality area of jurisdiction. The city of Bloemfontein is located approximately 7km north of the proposed development (refer to the attached locality map).

The project entails the generation of up to 400MW electrical power through photovoltaic (PV) panels. The total extent of the project will be approximately 800 hectares (including supporting infrastructure on site). The property on which the facility is to be constructed will be leased by Mira Solar PV Project One (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 an Environmental Impact Assessment (EIA);
- An overview of the proposed solar PV facility;
- An overview of the EIA 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 EIA

The EIA Regulations, 2014 (GN. R. 326 as amended in 2017) 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:

- Activity 11(i) (GN.R. 327): “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.”
- Activity 24(ii) (GN.R. 327): “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.”
- Activity 27 (GN.R. 327): “The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation...”
- Activity 28(ii) (GN.R. 327): “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.”

- Activity 56(ii) (GN.R. 327): *“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...”*
- Activity 1 (GN.R. 325): *“The development of facilities or infrastructure for the generation of electricity from a renewable resource where the electricity output is 20 megawatts or more...”*
- Activity 15 (GN.R. 325): *“The clearance of an area of 20 hectares or more of indigenous vegetation.”*
- Activity 4(b)(i)(gg) (GN.R. 324): *“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, (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.”*
- Activity 10(b)(i)(gg) (GN.R. 324): *“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) Free State, (i) outside urban areas, (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”*
- Activity 18(b)(i)(gg) (GN.R. 324): *“The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre (b) Free State (i) outside urban areas, 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 area of a biosphere reserve.”

Being listed under Listing Notice 1, 2 and 3 (GN.R. 327, 325 & 324) implies that the development is considered as potentially having a significant impact on the environment. Based on the activities triggered, the Application for Environmental Authorisation is subject to the completion of full Scoping and EIA (S&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 solar PV facility and associated infrastructure (including substation, powerline, access roads and battery storage system). The facility will be located on Farm DieVlakte No. 1950 and the Remaining extent of Farm Brandkop No. 702, Registration Division Bloemfontein RD, situated within the Mangaung Metropolitan 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 400MW, 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 optimum 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 up to 33kV up 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 up 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.

- Supporting Infrastructure – The following auxiliary buildings with basic services including water and electricity will be required on the sites:
 - Offices;
 - Warehouse and workshops;
 - Control centre; and
 - Security control and gate house;
 - Temporary and permanent laydown areas
- Battery storage – Battery Energy Storage Facilities with an extent of 4ha.
- Roads – Access is most likely to be obtained via the R706 Regional Road which runs to the south of 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 up to 3 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 Baseline and Risk Assessment
- Visual Impact Assessment
- Soil, Land Capability and Agricultural Potential Study
- Social Impact Assessment
- Avifaunal Study
- Palaeontological 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 of the EIA process

Activity	Prescribed timeframe	Timeframe
Public participation (BID)	30 Days	April/May 2023
Conduct specialist studies	-	April/May 2023
Submit application form and Draft	-	May/June 2023
Public participation (Draft Scoping Report)	30 Days	May/June 2023
Submit Final Scoping Report	44 Days	June/July 2023
Approval of Final Scoping Report	43 Days	August 2023
Submit Draft EIA Report	106 Days	October 2023
Public Participation	30 Days	October/November 2023
Submit Final EIA Report	-	December 2023
Decision	107 Days	March 2024
Public participation (decision) & submission of appeals	20 Days	March 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 via email to participation@environamics.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: Roschel Maharaj
Telephone: 063 062 7725 (Cell)
Electronic mail: participation@environamics.co.za