



# ENVIRONAMICS

Environmental Consultants

## BACKGROUND INFORMATION DOCUMENT

Environmental Impact Assessment Processes for the proposed Steenbok Solar 1, Steenbok Solar 2 and Steenbok Grid Connection, near Bloemfontein, Free State Province

### 1. Introduction

The activities entail the development of two individual 100MW photovoltaic solar energy facilities consisting of standard infrastructure namely PV arrays, an on-site substation, cabling, inverters, access roads, laydown areas, fencing, operation and maintenance buildings (including offices and warehousing) and battery energy storage system. The two solar energy facilities proposed are known as Steenbok Solar 1 and Steenbok Solar 2. Furthermore, a grid connection solution is proposed to connect the two solar energy facilities to the national grid.

The projects are situated within the jurisdiction of Mangaung Metropolitan Municipality located approximately 12 km north of the centre of Bloemfontein in the Free State Province. The affected property falls under the Registration Division Bloemfontein (refer to the attached locality map).

The property on which the facilities are to be constructed will be leased by the Applicant from the property owner, for the lifespan of the projects (minimum of 20 years). The applicant is known as Steenbok Solar (Pty) Ltd.

Each solar energy facility will have a generation capacity of up to 100MW electrical power through photovoltaic (PV) panels. A development area of approximately 160ha has been identified per 100MW facility. A 300m wide grid connection corridor has been identified for the placement of the grid connection infrastructure. The final facility footprints will be confirmed during the EIA process, following specialist input.

The purpose of this background information document (BID) is to provide interested and affected parties (I&APs) with:

- Information on the need for the Environmental Impact Assessment processes (EIA);
- An overview of the proposed solar energy facilities and grid connection solution;
- An overview of the Environmental Impact Assessment processes and specialist studies being conducted; and
- Details of how I&APs may become involved in the processes, 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 (EA) is required for certain listed activities which might have detrimental impacts on the environment. The following main activities have been identified with special reference to the proposed developments 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 14 (GN.R. 327): "The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres."

- 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 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.”

Being listed under Listing Notice 1 and 2 (GN.R. 327 & 325) 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 of the EIA Regulations, GN R326. 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. It must be noted that should more listed activities be triggered for the developments these will be applied for in the Application for Environmental Authorisation and included in the Scoping and EIA Reporting.

Furthermore, the applicant for the projects will also be applying for water use authorisation in terms of the National Water Act (Act 36 of 1998). Water uses listed under Section 21 of the National Water Act may be applicable to the developments and will be authorised through either a Water Use License (WUL) or a General Authorisation (GA), whichever is relevant.

### 3. Project description

The key components of the individual proposed projects are described below:

- PV Panel Array - The proposed facility will require numerous linked rows of PV (single axis) modules 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 with associated support infrastructure (concrete footings, below ground electrical cables) to produce up to 100MW electricity.
- Battery Energy Storage System (BESS) – The battery energy storage system will make use of solid state or flow battery technology and will have a capacity of up to 400MWh. Both lithium-ion and Redox-flow technology are being considered for the project, depending on which is most feasible at the time of implementation. The extent of the system will be approximately 2 ha.. The BESS containers will include cells, battery charge controllers, inverters, transformers, HVAC, fire, safety and control systems.
- 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.
- Supporting Infrastructure – The following auxiliary buildings with basic services including water and electricity will be required on the sites for each project:
  - Laydown areas;
  - Administration Office;
  - Switch gear and relay room;
  - Staff lockers and changing room;
  - Security control;
  - Operations & Maintenance (O&M) building; and
  - Warehouse.
- Roads – Access will be obtained via the R700 regional road and various gravel farm roads within the area and affected property. An internal site road network will also be required to provide access to the solar field and

associated infrastructure. Roads will be up to 8m wide.

- **Fencing** - For health, safety and security reasons, the facilities will require perimeter fencing and internal security fencing, up to ~2m high.
- **Grid Connection Solution** - Specific grid connection infrastructure is being proposed which includes a network of infrastructure including 1-2 switching substation/s and 132kV overhead power line that will connect the proposed solar energy facilities to the national grid via a loop-in loop-out connection to an existing 132kV overhead power line which traverse the affected property. Further associated infrastructure will include access roads and laydown areas.

The grid connection solution will be assessed within the development footprint of the PV areas. This will provide some flexibility for the avoidance of sensitive environmental features and areas which may be present in close proximity to the proposed grid connection infrastructure.

#### 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 and grid connection infrastructure. 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:

- Terrestrial Biodiversity Impact Assessment
- Aquatic Biodiversity Impact Assessment
- Avifaunal Impact Assessment
- Soil and Agricultural Potential Study
- Visual Impact Assessment
- Social Impact Assessment
- Heritage Impact Assessment
- Palaeontological Impact Assessment
- Traffic Impact Assessment

#### 5. The EIA processes and Public Participation for the projects

Public participation is an integral part of the EIA process and aims to involve I&APs in the process by notifying them of the proposed projects and encouraging them to voice their issues and concerns.

Through the EIA processes of the projects, the process is transparent and allows I&APs to comment on the projects, contribute local knowledge or raise concerns, which are included in the respective scoping and EIA Reports and are taken into consideration during the authorities' assessment of the individual projects.

The Public Participation process will be undertaken in-line with the requirements of Chapter 6 of the EIA Regulations (as amended).

#### 6. Your involvement

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

- Registering as an I&AP.
- Submitting your issues, concerns and questions in writing via email to [participation@environamics.co.za](mailto:participation@environamics.co.za) or via sms or WhatsApp to Lisa de Lange.
- Attending any public meetings which may be held during the course of the EIA processes, where relevant. 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:** Lisa de Lange  
**Telephone:** 084 920 3111 (Cell)  
**Electronic mail:** [participation@environamics.co.za](mailto:participation@environamics.co.za)