



ENVIRONAMICS

Environmental Consultants

BACKGROUND INFORMATION DOCUMENT

Basic Assessment for the proposed Droogfontein 5 Solar Energy Facility and Battery Energy Storage System near Kimberley,
Northern Cape Province

1. Introduction

The activities entail the development of a solar photovoltaic (PV) energy facility and Battery Energy Storage Systems (BESS) with associated infrastructure (the "Project") on Portion 1 of the Farm Droogfontein No. 62, Registration Division Kimberley, Northern Cape Province situated within the Sol Plaatjie Local Municipality area of jurisdiction. The town of Kimberley is located approximately 20 km south of the proposed development (refer to the attached locality map).

The Project entails the generation of up to 200MW electrical power through solar photovoltaic (PV) panels and BESS. Two alternative sites have been identified within the affected property that will be assessed comparatively on the same level for the development. The alternative sites have an extent of between 490 and 500 hectares. The property on which the facility is to be constructed will be leased by Genesis Eco-Energy Developments (Pty) Ltd from the property owner, for the lifespan of the Project (minimum of 20 years and up to a maximum of 25 years).

The Applicant will be required to apply for an electricity generation license from the National Energy Regulator of South Africa (NERSA). Depending on the economic conditions following the end of the lifespan of the Project, 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 Project;
- An overview of the Basic Assessment 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) 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 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 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 meters or more by not exceeding 500 cubic meters."
- 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. The site is located in a Renewable Energy Development Zone (REDZ) and therefore a ‘basic assessment (BA) process’ is required as described in Regulation 19. The ‘basic assessment process’ involves the identification and assessment of environmental impacts through specialist studies, as well as public participation.

3. Project description

The key components of the proposed project are described below:

- PV Panel Array - To produce up to 200MW, the proposed facilities 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 mounted on a single axis tracking system in order to capture the most sun.
- Wiring to Inverters - Sections of the PV array will be wired to inverters. The inverter 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 approximately 480V and this is fed into step up transformers to 132kV. An onsite facility substation and switching stations 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 tie in with the existing 275kV transmission power lines located within the affected property. The power line route will be assessed within a 300m wide corridor.
- Supporting Infrastructure – The following auxiliary buildings with basic services including water and electricity will be required on the sites:
 - Administration Office (~300m²);
 - Switch gear and relay room (~400m²);
 - Staff lockers and changing room (~200m²);
 - Security control (~60m²);
 - Operations & Maintenance (O&M) room; and
 - Warehouse
- Battery storage – BESS housed in containers, each with a maximum height of 3m, maximum length of 5m, maximum width of 3m and to provide a maximum of 5MWh. The containers may be single stacked only to reduce the footprint. There may be up to a maximum of 40 containers of BESS. The containers will include cells, HVAC, fire, safety and control systems and will comprise of Lithium-Ion technology providing a maximum capacity of 50MW in total.
- Roads – Access will be obtained via the N12 national 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.
- Fencing - For health, safety and security reasons, the Project will be required to be fenced off from the surrounding farm. Fencing with a maximum height of 3 m will be used.

4. Specialist studies to be conducted

There are a number of environmental impacts, both positive and negative that are associated with the development of solar PV and BESS 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 this project, the following specialist studies have been identified as relevant:

- Heritage Impact Assessment
- Ecological Impact Assessment
- Aquatic Wetland Assessment
- Visual Impact Assessment
- Agricultural Compliance Statement
- Social Impact Assessment
- Avifaunal Study
- Palaeontological Impact Assessment

5. The BA process and timeline for the project

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.

Through the BA process of the project, the process is transparent and allows I&APs to comment on the project or raise concerns, which are included in the Basic Assessment Report and are taken into consideration during the authorities' assessment of the project. Table 1 indicates the key steps of the BA process and the envisaged timelines for the project. The site is located in a Renewable Energy Development Zone (REDZ) and therefore a 'basic assessment (BA) process' is required as described in Regulation 19 – 20.

Table 1: Key steps of the BA process

Activity	Prescribed timeframe	Timeframe
Public participation (BID)	30 Days	03 Aug. – 05 Sept. 2022
Submit application form and Draft BAR	-	September 2022
Public participation (DBAR)	30 Days	September – October 2022
Submit Final BAR	90 Days	October. 2022
Decision	57 Days	January 2023
Public participation (decision) & submission of appeals	20 Days	February 2023

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 participation@environamics.co.za.
- Attending any public meetings which may be held during the course of the BA process, if relevant. As a registered I&AP you will automatically be invited to attend these meetings.
- Reviewing and commenting on the report 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
Electronic mail: participation@environamics.co.za