



ENVIRONAMICS

Environmental Consultants

BACKGROUND INFORMATION DOCUMENT

Basic Assessment Processes for the proposed Naos Solar PV Project One, Naos Solar PV Project Two and Naos Solar PV Project Three, near Viljoenskroon, Free State Province

1. Introduction

The activities entail the development of three separate photovoltaic solar facilities and associated infrastructure. Naos Solar PV Project One, Naos Solar PV Project Two and Naos Solar PV Project Three is proposed on Portions 1 and 2 of the Farm Waterford 573 and the Remaining Extent of the Farm Cijfervlei 6 and Portion 1 of the Farm La Reys Kraal Zuid 165. The affected properties fall under the Registration Division Viljoenskroon, Free State Province. The projects are situated within the Moqhaka Local Municipality area of jurisdiction and the town of Viljoenskroon is located approximately 24 km south of the proposed developments (refer to the attached locality maps).

Each project will have a generation capacity of up to 240MW electrical power through photovoltaic (PV) panels. A development area has been identified for each project which include:

- Naos Solar PV Project One: 300 ha
- Naos Solar PV Project Two: 460ha
- Naos Solar PV Project Three: 330ha

The properties on which the facilities are to be constructed will be leased by the respective applicant from the property owner, for the lifespan of the projects (minimum of 20 years). The applicants are known as Naos Solar PV Project One (Pty) Ltd, Naos Solar PV Project Two (Pty) Ltd and Naos Solar PV Project Three (Pty) Ltd.

The applicants will be required to apply for a generation license from the National Energy Regulator of South Africa (NERSA). The purpose of this background information document (BID) is to provide interested and affected parties (I&APs) with:

- Information on the need for Basic Assessments processes (BA);
- An overview of the proposed Solar PV Projects;
- An overview of the Basic Assessment processes and specialist studies being conducted to explain the potential impacts associated with the Solar PV Projects; 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 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 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 developments are considered as potentially having a significant impact on the environment. The projects are located in a Renewable Energy Development Zone (REDZ) and therefore basic assessment processes are 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.

Furthermore, the applicants for the projects will also be applying for water use licensing 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 or a general authorisation, whichever is relevant.

3. Project description

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

- PV Panel Array - To produce up to 240MW, each 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.
- Battery Energy Storage System (BESS) – The battery energy storage system will make use of Lithium-ion (Lithium Iron Phosphate / Sodium

Sulphur) or Vanadium Redox technology and will have a capacity of up to 4.5GWh. The extent of the system will be ~4.3ha.

- 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 33kV to 132kV. The normal components and dimensions of a distribution rated electrical substation will be required. A collector substation with a capacity of 132kV will also be required.

The onsite substation will be required on each site to step the voltage up to 132kV, after which the power will be evacuated into the national grid via the new proposed power line from the proposed collector substation to the 400kV Mercury Main Transmission Substation (MTS).

The power line route will be assessed within a 200m wide grid connection corridor. Four alternative routes are being considered. The affected properties associated with the power line route alternatives are Portion 1 of the Farm La Reys Kraal Zuid 165, Portions 1, 2 and the remainder of the Farm Kleinfontein 369, Portion 2, 4 and the remainder of the Farm Biesiefontein 173, Portions 2 and 3 of the Farm Zaaiplaats 190, Farm Doornplaats 599 and Portion 1 of the Farm Waterford 573 and Portion 2 of Farm Waterford 573.

- Supporting Infrastructure – The following auxiliary buildings with basic services including water and electricity will be required on the sites for each project:
 - Operations & Maintenance Building / Office (~800m²);
 - Switch gear and relay room (~800m²);
 - Staff lockers and changing room (~200m²);
 - Security control (~60m²);

- Permanent Laydown Area (~2 000m²); and
- Temporary batching plant
- **Roads** – Access will be obtained via the existing R59, R501 and S643 roads. An internal site road network will also be required to provide access to each respective solar field and associated infrastructure. Access roads will be up to 12m in width. The main access road providing direct access to the project will be up to 8m wide and 6km long.
- **Fencing** - For health, safety and security reasons, the facilities will be required to be fenced off from the surrounding farms.

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:

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

5. The BA processes and timeline for the projects

Public participation is an integral part of the BA 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 BA processes of the projects, the process is transparent and allows I&APs to comment on the projects or raise concerns, which are included in the respective Basic Assessment Reports and are taken into consideration during the authorities' assessment of the individual projects. Table 1 indicates the key steps of the BA processes and the timelines for the projects.

Table 1: Key steps of the BA processes

Activity	Prescribed timeframe	Timeframe
Public participation (BID)	30 Days	25 August – 27 September 2022
Conduct specialist studies	1 Month	July – August 2022
Submit application forms and Draft BARs	-	September 2022
Public participation (DBAR)	30 Days	September – October 2022
Submit Final BARs	90 Days	October 2022
Decisions	57 Days	January 2023
Public participation (decision) & submission of appeals	20 Days	January / February 2023

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.
- Attending any public meetings which may be held during the course of the BA 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