



# **ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED BONSMARA SOLAR PHOTOVOLTAIC (PV) RENEWABLE ENERGY FACILITY AND BASIC ASSESSMENT (BA) FOR ASSOCIATED GRID CONNECTION INFRASTRUCTURE, NEAR KROONSTAD, FREE STATE PROVINCE**

## **TERMS OF REFERENCE FOR SPECIALIST STUDIES**

### **1 INTRODUCTION**

The purpose of these Terms of Reference is to provide the specialist team with a consistent approach to the specialist studies that are required as part of the Environmental Impact Assessment (EIA) and Basic Assessment (BA) processes being conducted in respect of the Solar Energy Facility (SEF) and associated grid connection infrastructure. This will enable comparison of environmental impacts, efficient review and collation of the specialist studies into the EIA / BA reports, in accordance with the latest requirements of the EIA Regulations, 2014 (as amended).

### **2 PROCESS**

The proposed SEF will be subject to a full Environmental Impact Assessment (EIA) process in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA) and EIA Regulations, 2014 (as amended). Accordingly, the EIA process as contemplated in terms of the EIA Regulations (2014, as amended) are being undertaken in respect of the proposed SEF project. The competent authority for this EIA is the national Department of Forestry, Fisheries and the Environment (DFFE).

Grid connection infrastructure for the SEF will be subject to a separate Basic Assessment (BA) Process as contemplated in terms of regulation 19 and 20 of the Environmental Impact Assessment Regulations, 2014, which is being undertaken in parallel to the EIA process.

### **3 PROJECT BACKGROUND**

WKN Windcurrent SA (Pty) Ltd has appointed SiVEST Environmental (hereafter referred to as "SiVEST") to undertake the required EIA / BA Processes for the proposed construction of the Bonsmara

Solar PV Energy Facility (SEF) and associated grid connection infrastructure near Kroonstad in the Free State Province.

The distinct EA's that are required for the Projects are as follows:

- Bonsmara SEF (up to 100MW)
- Bonsmara Grid Connection Infrastructure (up to 132kV)

The overall objective of the development is to generate electricity by means of renewable energy technology capturing energy to feed into the National Grid.

## 4 PROJECT DESCRIPTION

### 4.1 Project Location

WKN Windcurrent SA (Pty) Ltd is proposing the construction of the 100MW Bonsmara Solar PV Facility, BESS and associated infrastructure on a site approximately 12km south-east from the town of Kroonstad, in the Free State Province. The facility will be located on Portion 0 of Farm 636 and Portion 1 of Farm 636 located in the Moqhaka Local Municipality, in the Fezile Dabi District Municipality. The facility will comprise of several arrays of PV panels and associated infrastructure that includes BESS and will have a contracted capacity of 100MW. The Solar PV facility will connect to the grid via a 2km 132kV powerline from the on-site substation to the Kroonstad Switching Station.

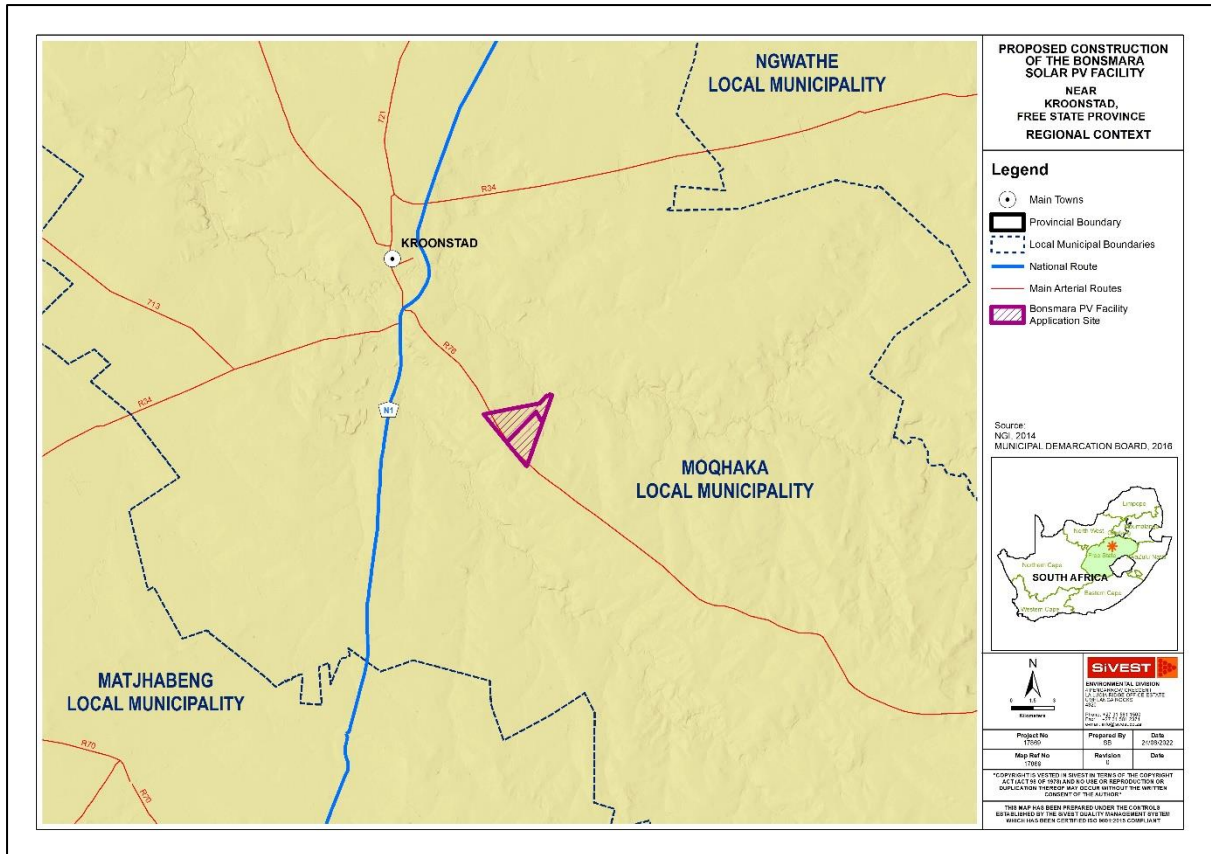
The project is located over the following farm portions as detailed in Table 1 and 2 below.

**Table 1: SEF Farm Details**

Farm Name	SG Code
Farm Scheveningen No. 636 Portion 0	F02000000000063600000
Farm Scheveningen No. 636 Portion 1	F02000000000063600001

**Table 2: Grid Farm Details**

Farm Name	SG Code
Farm Oslaagte No. 2564 Portion 0	F020000000000256400000



**Figure 1: Regional Context**

## 4.2 Solar Farm Components

Preliminary technical details of the respective Solar Farm are included below. Please note that the final technical details will be made available to the specialist during the reporting phase.

- PV modules and mounting structures (monofacial or bifacial) with fixed, single or double axis tracking mounting structures;
- Associated stormwater management infrastructure;
- Battery Energy Storage System (BESS);
- Site and internal access roads (up to 6 m wide);
- Auxiliary buildings (offices, parking, etc.);
- Ablution facilities and associated infrastructure;
- Temporary laydown area during the construction phase for the construction camp and laydown area (which will be a permanent laydown area for the BESS during the operational phase);
- Infrastructure including offices, operational control centre, operation and maintenance area, ablution facilities etc;
- On-site 33 kV/132kV on-site substation (facility substation);
- Grid connection infrastructure including medium-voltage cabling between the project components and the facility substation (underground cabling will be used where practical (up to 33kV);
- Perimeter fencing; and,
- Rainwater and/or groundwater storage tanks and associated water transfer infrastructure.

### 4.3 Grid Connection Components

A 132kv powerline shall connect the project from the onsite substation to Kroonstad 132kV Switching Station. The powerline is approximately 2km in length and a 300m corridor is to be assessed (150m on either side).

Final technical details of the substations and grid components will be made available to the specialist during the reporting phase.

## 5 ALTERNATIVES

### 5.1 Location Alternatives

No other location alternatives are being considered. Many areas in South Africa are constrained from exporting capacity as per the GCCA2024. The site is located approximately 2km from a grid connection point that has been confirmed to have sufficient capacity to evacuate the generation. The land has been confirmed as available in the form of private landowners who have made the development possible on the site. Agriculture is the largest constraint in this region, however a prefeasibility study was conducted by the agricultural specialist, and the site has been identified in terms of agricultural sensitivity.

### 5.2 Technology Alternatives

No other activity alternatives are being considered. CSP technology would not be suitable for this site because it requires a flat surface, has a high visual impact and requires large volumes of water. In addition, CSP has not been catered for in the IRP2019. The climatic conditions show that the wind resource in the area is not suitable for a wind energy facility.

### 5.3 SEF Layout Alternatives

Design and layout alternatives will be considered and assessed as part of the EIA taking into consideration the environmental constraints identified by the various specialists, and the layout amended were necessary. In terms of the BESS, laydown areas and substations etc., these are all optimally located in the south-east corner of the site, closest to the grid connection point and access roads. The powerline takes the shortest route to the grid connection point and a portion of it follows an existing 132kV powerline.

## 6 NO-GO ALTERNATIVE

The 'no-go' alternative is the option of not undertaking the proposed SEF and / or grid connection infrastructure projects. Hence, if the 'no-go' option is implemented, there would be no development. This alternative would result in no environmental impacts from the proposed project on the site or the surrounding local area. It provides the baseline against which other alternatives are compared and will be considered throughout the report.

## 7 SPECIALIST REPORT REQUIREMENTS

### 7.1 Site Sensitivity Verification and Reporting

The requirements for Specialist Studies being undertaken in support of applications for Environmental Authorisation are specified in **Appendix 6** of the 2014 NEMA EIA Regulations (as amended), as well as the Assessment Protocols that were published on 20th of March 2020, in Government Gazette 43110, GN 320 and the Assessment Protocols that were published on the 30th of October 2020, in Government Gazette 43855, GN 1150. These protocols stipulate the Procedures for the Assessment and Minimum Criteria for reporting on identified environmental themes in terms of Sections 24(5)(A) and (H) and 44 of the NEMA, when applying for EA.

The Assessment Protocols are as follows:

- **PART A:** This relates to the Site Sensitivity Verification (SSV) and Reporting requirements where a Specialist Assessment is required but no specific Assessment Protocol has been prescribed. In this instance, specialist assessment must comply with **Appendix 6** of the 2014 NEMA EIA Regulations (as amended). However, the current use of the land and the environmental sensitivity of the site under consideration as identified by the DFFE Screening Tool must be verified and confirmed and an SSV report must be compiled and included as an appendix to the Specialist Assessment. Where there are no sensitivity layers on the Screening Tool for a particular Specialist Assessment, then this must be stated in the actual Specialist Assessment and in the accompanying SSV report.
- **PART B:** This relates to the Site Sensitivity Verification (SSV) and Reporting requirements where a Specialist Assessment is required and a specific Assessment Protocol has been prescribed. The following Assessment Protocols are relevant to the proposed project:
  - Agriculture
  - Terrestrial Biodiversity
  - Aquatic Biodiversity
  - Archaeological, Cultural and Paleontology
  - Avifauna
  - Civil Aviation
  - Defence
  - Terrestrial Plant Species
  - Terrestrial Animal Species

### 7.2 Specialist Assessment Reports / Compliance Statements

Specialists are requested to provide **one (1)** scoping phase reports and / or compliance statement that provides an assessment of the proposed SEF **and** the associated grid connection infrastructure (132kV overhead power line). These reports should include separate impact assessments and impact rating chapters/sections with mitigations for the SEF and the grid connection proposals respectively.

During the EIA phase, specialists will be required to update the scoping phase specialist report to provide a review of their findings in accordance with revised site layouts and to address any comments or concerns arising from the public participation process.

The specialist assessment reports and / or compliance statements should include the following sections (reporting template to be provided):

#### *7.2.1 Executive Summary*

Specialists must provide an Executive Summary summarizing the findings of their report to allow for easy inclusion in the EIA / BA reports.

#### *7.2.2 Project Description*

The specialist report must include the project description.

#### *7.2.3 Terms of Reference*

The specialist report must include an explanation of the terms of reference (TOR) applicable to the specialist study. The gazetted Environmental Assessment Protocols of the NEMA EIA Regulations (2014, as amended), prescribes Procedures for the Assessment and Minimum Criteria for Reporting on the Identified Environmental Themes in terms of Sections 24(5)(A) and (H) and 44 of the National Environmental Management Act, 1998. These procedures must be considered.

Where a specialist assessment is required and no specific environmental theme protocol has been prescribed, the required level of assessment must be based on the findings of the site sensitivity verification and must comply with Appendix 6 of the EIA Regulations; and any relevant legislation and guidelines deemed necessary

Where relevant, a table must be provided at the beginning of the specialist report, listing the requirements for specialist reports in accordance with Appendix 6 of the EIA Regulations, 2014 (as amended) and cross-referencing these requirements with the relevant sections in the report. An MS Word version of this table will be provided by SiVEST.

#### *7.2.4 Legal Requirements and Guidelines*

The specialist report must include a thorough overview of all applicable best practice guidelines, relevant legislation, prescribed Assessment Protocols and authority requirements.

#### *7.2.5 Methodology*

The report must include a description of the methodology applied in carrying out the specialist assessment.

### 7.2.6 Specialist Findings / Identification of Impacts

The report must present the findings of the specialist studies and explain the implications of these findings for the proposed development (e.g. permits, licenses etc.). This section of the report should also identify any sensitive and/or 'no-go' areas on the development site or within the power line assessment corridors. These areas must be mapped clearly with a supporting explanation provided.

This section of the report should also specify if any further assessment will be required.

### 7.2.7 Environmental Impact Assessment

The impacts (both direct and indirect) of the proposed SEF's and the proposed grid connection infrastructure (during the Construction, Operation and Decommissioning phases) are to be assessed and rated *separately* according to the methodology developed by SiVEST. Specialists will be required to make use of the impact rating matrix provided (in Excel format) for this purpose, and *separate tables* must be provided for the SEF and for the grid connection infrastructure respectively. **Please note that the significance of Cumulative Impacts should also be rated in this section.** Both the methodology and the rating matrix will be provided by SiVEST.

Please be advised that this section must include mitigation measures aimed at minimising the impact of the proposed development.

### 7.2.8 Input To The Environmental Management Programme (EMPr)

The report must include a description of the key monitoring recommendations for each applicable mitigation measure identified for each phase of the project for inclusion in the Environmental Management Programme (EMPr) or Environmental Authorisation (EA).

Please make use of the table below for each of the phases i.e. Design, Construction, Operation and Decommissioning.

Impact/Aspect	Mitigation/Management Actions	Responsibility	Methodology	Mitigation/Management and Objectives and Outcomes	Frequency

### 7.2.9 Cumulative Impact Assessment

Cumulative impact assessments must be undertaken for the proposed SEF and associated grid connection infrastructure to determine the cumulative impact that will materialise if other Renewable Energy Facilities (REFs) and large scale industrial developments are constructed within 35kms of the proposed development.

The cumulative impact assessment must contain the following:

- A cumulative environmental impact statement noting whether the overall impact is acceptable; and
- A review of the specialist reports undertaken for other REFs and an indication of how the recommendations, mitigation measures and conclusion of the studies have been considered.



In order to assist the specialists in this regard, SiVEST will provide the following documentation/data:

- A summary table listing all REFs identified within 35kms of the proposed SEF;
- A map showing the location of the identified REFs; and
- KML files.

***It should be noted that it is the specialist's responsibility to source the relevant EIA / BA reports that are available in the public domain. SiVEST will assist, where possible.***

#### 7.2.10 No Go Alternative

Consideration must be given to the “no-go” option in the EIA process. The “no-go” option assumes that the site remains in its current state, i.e. there is no construction of a WEF and associated infrastructure in the proposed project area and the status quo would be preserved.

#### 7.2.11 Comparative Assessment Of Alternatives

Locations for the Substation, construction / laydown area and power line route alignment have been identified. The layout will be informed by environmental constraints and technical practicality.

#### 7.2.12 Conclusion / Impact Statement

The conclusion section of the specialist report must include an Impact Statement, indicating whether any fatal flaws have been identified and ultimately whether the proposed development can be authorised or not (i.e. whether EA should be granted / issued or not).

#### 7.2.13 Specialist Declaration of Independence

A copy of the Specialist Declaration of Interest (DoI) form, containing original signatures, must be appended to all Draft and Final Reports. This form will be provided to the specialists. ***Please note that the undertaking / affirmation under oath section of the report must be signed by a Commissioner of Oaths.***

## 8 DELIVERABLES

All specialists will need to submit the following deliverables:

- 1 x Specialist Assessment Report and / or Compliance statement for inclusion in Draft Scoping Report (DSR) and updated version based on EAP and applicant review. ***NB please include a preliminary impact assessment in the Scoping Phase which can be updated with the final layout in the EIA Phase;***
- 1 x Updated Specialist Report and / or Compliance statement for inclusion in Final Environmental Impact Assessment Report (FEIAR) should updates and/or revisions be required as part of the public participation process;
- A copy of the specialist's Curriculum Vitae (CV);



- A copy of the Specialist Declaration of Interest (DoI) form, containing original signatures. This form will be provided to the specialists. **Please note that the undertaking / affirmation under oath section of the report must be signed by a Commissioner of Oaths;**
- Delineated areas of sensitivity and 'No-Go' areas in KMZ or GIS format; and
- All other relevant data such as photos and maps (see **Section 10** below).

## 9 DEADLINES AND REPORT SUBMISSION

- Specialist Assessment Report and / or Compliance Statement for inclusion in DSR no later than [**23 September 2022**] and
- Updated version based on EAP and applicant review no later than [**5<sup>th</sup> October 2022**] for the DSR; and
- Specialist Assessment Report and / or Compliance Statement for inclusion in DEIAr and DBAR no later than [**17 February 2023**] and
- Updated version based on EAP and applicant review no later than [**28<sup>th</sup> February 2023**] for the DEIAr and DBAR; and
- Any changes identified as a result of stakeholder engagement no later than [**21<sup>st</sup> of April 2023**].

## 10 REPORT / DATA FORMATS

- All specialist reports must be provided in MS Word format.
- Where maps have been inserted into the report, we will require a separate map set in PDF format for inclusion in our submission.
- Where figures and/or photos have been inserted into the report, we will require the original graphic in jpg format for inclusion in our submission.
- Delineated areas of sensitivity must be provided in either ESRI shape file format or Google Earth KML format. **Sensitivity classes must be included in the attribute tables with a clear indication of which areas are “No-Go” areas.**