Eskom	Standard	Distribution

Title: **Technical Evaluation Criteria for Solar PV and BESS Projects in Distribution Gauteng Cluster**

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TABLES

1. INTRODUCTION

This document outlines the evaluation criteria that Eskom will use to assess contractors for Solar PV installation projects, in accordance with Eskom standard 240-171000418 - Major Equipment Requirements for Distribution Solar PV and BESS: SSEG and Microgrids. The criteria ensures that only technical competent, compliant, and capable contractors are appointed. The evaluation process consists of two phases:

- **Phase 1 –** Mandatory Requirements
- **Phase 2 –** Functional Requirements

2. SUPPORTING CLAUSES

2.1 SCOPE

This evaluation criteria is for all Solar PV installation projects executed for/by Eskom, including grid-tied, off-grid, hybrid and BESS systems.

2.1.1 Purpose

The purpose of this document is to provide a standardised, transparent, and fair evaluation process that ensures all Solar PV projects are executed to the highest technical, safety, and quality standards.

2.1.2 Applicability

Applies to all contractors and subcontractors bidding for design, supply, installation, testing, and commissioning of Solar PV and BESS systems, and to Eskom evaluation teams involved in contractor selection.

2.2 NORMATIVE/INFORMATIVE REFERENCES

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

2.2.1 Normative

a. ISO 9001:2015 Quality Management Systems.
b. Occupational Health and Safety Act (Act No. 85 of 1993).
c. SANS 10142-1:2024 Wiring of Premises.
d. IEC 62446: Grid Connected PV Systems – Testing, Documentation and Maintenance.
e. Eskom 240-171000418, *Major Equipment Requirements for Distribution Solar PV and BESS: SSEG and Microgrids.*
f. NRS 097-2-1:2024: Grid Interconnection of Embedded Generation.

2.3 DEFINITIONS

Definition	Description
Grid-Tied System	A photovoltaic system connected directly to the utility grid.
Off-Grid System	A standalone photovoltaic system that operates independently from the utility grid.
Hybrid System	A photovoltaic system that can operate in grid-tied mode, off-grid mode, or a combination of both.
Battery Energy Storage System	An integrated system consisting of rechargeable batteries, control electronics, and associated balance-of-system components, designed to store electrical energy for later use.
PV Module	A solar panel consisting of interconnected photovoltaic cells, designed to convert sunlight into DC electrical energy.
Inverter	A device that converts DC electricity from PV modules into AC electricity suitable for grid connection or load supply.
Balance of System	All components of a PV system other than PV modules, including inverters, mounting structures, wiring, monitoring systems, and protection devices.
Contractor	A company or individual appointed to execute Solar PV design, installation, and commissioning.
Supplier	Is a company or entity that provides the components, materials, or equipment required for the Solar PV system.
Commissioning	The process of verifying and documenting that the Solar PV system is designed, installed, and tested to meet operational & safety requirements.
Technical Compliance	Conformance to all technical specifications, standards, and statutory requirements.
Mandatory Requirements	Technical and compliance conditions that must be met in Phase 1 for a contractor to qualify for further evaluation.
Functional Requirements	The set of measurable criteria, specifications, and standards that a contractor must meet to demonstrate technical competence in designing, supplying, installing, testing, and commissioning a Solar PV or BESS project.
Standard Test Conditions (STC)	Conditions where the irradiance is 1 000 W/m2, the temperature of the photovoltaic cell is 25 °C and the air mass is 1,5
Fully Compliant	A state where a contractor or supplier meets the requirement in full with no deviations.
Partially Compliant	A state where a contractor or supplier meets the requirement to some degree but with gaps or deviations that require rectification
Non-Compliant	A state where a contractor or supplier fails to meet the stipulated requirements in full.

2.3.1 Disclosure Classification

Controlled disclosure: controlled disclosure to external parties (either enforced by law, or discretionary).

2.4 ABBREVIATIONS

Abbreviation	Description
PV	Photovoltaic
BESS	Battery Energy Storage System
DC	Direct Current
AC	Alternating Current
OHS	Occupational Health and Safety
IEC	International Electrotechnical Commission
SANS	South African National Standards
CoC	Certificate of Compliance
OEM	Original Equipment Manufacturer
BOS	Balance of System

3. EVALUATION METHODOLOGY

3.1 PHASE 1 – MANDATORY TECHNICAL REQUIREMENTS (PASS/FAIL)

If a **"NO"** response is recorded for any assessment item in Table 1, the tenderer will be deemed non-compliant and automatically disqualified from further consideration. Such tenderers will not progress to the next stage of evaluation, namely the Functional Scoring Evaluation.

Table 1: Mandatory Requirements

No.	Description of Mandatory Technical Criteria	Tenderer Returnable	Compliance (YES/NO)
1.	Technical Schedule A&B	Submit fully completed technical schedule A&B	
2.	Qualified Personnel	Provide proof of qualified personnel, submit: a) ECSA Registration Certificate (Pr Eng / Pr Tech Eng / Pr Techni Eng) and signed design responsibility letter b) Proof of PV installer accreditation (e.g., PV GreenCard or equivalent) c) Copy of the registered Electrician's Wireman's Licence and proof of registration with Department of Labour d) Signed Organisational Structure (signed by delegated authority)	

3.	Complete System Design Documentation for 2 previous projects in the last 3 years	Submit complete design documentation of PV/BESS system, which may include the following: a) Single Line Diagram (SLD) b) PV array layout c) PV String configuration table d) Cable sizing calculations (AC & DC) e) Mounting structure specifications f) Bill of Material (BOM) g) Datasheets for all components, including HVAC system. h) Equipment container layout (if applicable) i) PV System feasibility study software report j) Structural assessment report k) Fire protection assessment	
4.	PV Module Compliance	Submit evidence that PV Modules comply with SANS 61215:2015 or equivalent.	
5.	Inverter Compliance	Submit evidence that inverter complies with NRS097-2-1 and submit: a) Datasheets b) Third party type-test certificates c) Proof the inverter includes an embedded or external communication device to support both 1. Local Wi-Fi/LAN monitoring for the customer and 2. Modbus for remote telemetry (e.g. for communicating to a 3rd party system).	
6.	Battery Compliance	Submit evidence that Battery modules comply with SANS/IEC 62619:2022 and IEC 63056 Ed. 1.0 b:2020 or equivalent. Minimum requirement of ≥80% DoD, ≥5,000 cycles, Modular & Scalable.	

3.2 PHASE 2 – FUNCTIONAL TECHNICAL REQUIREMENTS

Contractors who pass Phase 1 will be evaluated against detailed technical requirements using a scoring system. The scoring table below will be used:

Table 2: Technical Requirements Scoring Methodology

Score	Description
3	Fully Compliant
1	Partially Compliant

Score	Description
0	Non-Compliant

A minimum overall score of **80%** is required in this phase. Below are the Technical Requirements to be used for scoring as per the technical Schedule A&B:

Table 3: Functional Requirements

No.	Functional Technical Criteria Description	Compliance	Weight (100%)
1.1	Hybrid Inverters	Must Comply with Clause 3.3 **"Inverters"** of Eskom Standard 240-171000418 – Major Equipment Requirements for Distribution Solar PV and BESS: SSEG and Microgrids	20%
1.2	Battery Energy Storage System	Must Comply with Clause 3.5 **"Battery System"** of Eskom Standard 240-171000418 – Major Equipment Requirements for Distribution Solar PV and BESS: SSEG and Microgrids	20%
1.3	Solar Panels	Must Comply with Clause 3.4 **"PV Panels"** of Eskom Standard 240-171000418 – Major Equipment Requirements for Distribution Solar PV and BESS: SSEG and Microgrids	20%
1.4	Remote Monitoring System	Must Comply with Clause 3.7 **"Remote Monitoring and Control Requirements"** of Eskom Standard 240-171000418 – Major Equipment Requirements for Distribution Solar PV and BESS: SSEG and Microgrids	20%
1.5	AC and DC protective devices	Must Comply with Clause 3.6 **"AC and DC protective devices"** of Eskom Standard 240-171000418 – Major Equipment Requirements for Distribution Solar PV and BESS: SSEG and Microgrids	20%

Note: Contractors scoring below 80% will be disqualified.

4. AUTHORISATION

This document has been seen and accepted by:

Name & Surname	Designation
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5. REVISIONS

Date	Rev.	Compiler	Remarks
May 2026	0	Luntu Mgaga	First issue

6. DEVELOPMENT TEAM

The following people were involved in the development of this document:

- Luntu Mgaga - Senior Technologist: Standards Implementation - Distribution Gauteng Cluster
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