Eskom Rotek Industries	SCOPE OF WORK	ERI

Title: **Terms of Reference (TOR)**

for Supply, Delivery and Offloading of Electrical and Mechanical Consumables for Microgrids/Solar PV project on an as and when required basis for a duration of 5 years.

Document Identifier:	**ERI-CS-SCP001**
Alternative Reference Number:	**Not Applicable**
Area of Applicability:	**Eskom Rotek Industries SOC Ltd**
Functional Area:	**Cabling Projects**
Revision:	**1**
Total Pages:	**15**
Next Review Date:	**N/A**
Disclosure Classification:	**Controlled Disclosure**

Compiled by	Functional Responsibility	Authorised by
VS Mkhatshwa	**Marius Fourie**	**PS Mashaba**
Technical Support	**Electrical Engineer**	**Project Manager**
Date: 28 July 2026	Date: 28 July 2026	Date: 28 July 2026

Content

Page

1. Introduction 3
1.1 Project Overview: 3
1.2 Objectives 3
1.3 Compliance Framework 3
2. Detailed Scope of Supply Electrical and Mechanical Consumables 4
2.1 Electrical Distribution Components 4
2.1.1 Distribution Board Enclosures 4
2.1.2 Automatic Changeover Switches (ATS) 5
2.1.3 DC Protection Devices 5
2.1.4 AC Protection Devices 6
2.1.5 Electrical Cables and Accessories 7
2.1.6 Cable Management System 8
2.1.7 Protection, Monitoring and Metering Equipment 9
2.1.8 Earthing and Lightning Protection 9
2.1.9 General Requirements 10
3. Quality Assurance and Testing Protocol 10
3.1 Pre-Delivery Requirements 10
3.2 Testing Regime 11
3.3 Compliance Verification 11
3.4 Compliance Framework 11
4. Logistics and Supply Chain Management 13
4.1 Delivery Protocol 13
4.2 Site Access and Offloading 13
4.3 Packaging and Labelling 14
5. Project Management and Administration 14
5.1 Communication Protocol 14
5.2 Meeting Schedule 14
5.3 Documentation Control 14
6. Warranty Provisions 15
7. Health, Safety and Environmental Requirements 15
7.1 SHE Management Plan 15
7.2 Environmental Compliance 15

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Rotek Industries SOC Ltd

Hard copy printed on: 28/07/2026

1. Introduction and Background

1. Introduction

1.1 Project Overview:

This document serves as the definitive Terms of Reference for the supply, delivery, and offloading of electrical materials and renewable energy components to Eskom Rotek Industries (ERI) for Microgrids and Solar PV projects. The scope encompasses both Solar PV components and relevant Structures for specialized renewable energy equipment required for ERI's construction and maintenance operations.

1.2 Objectives

- Establish clear technical specifications and quality requirements
- Define logistical and project management protocols
- Outline commercial terms and compliance requirements

1.3 Compliance Framework

All supplied materials must conform to:

- **International Standards:** IEC, ISO, UL
- **South African Standards:** SABS, NRS
- **Eskom Specifications:** QM58 and other relevant technical specifications
- **Regulatory Requirements:** NRCS approvals where applicable

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Rotek Industries SOC Ltd

Hard copy printed on: 28/07/2026

2. Detailed Scope of Supply Electrical and Mechanical Consumables

2.1 Electrical Distribution Components

The Contractor shall supply complete electrical distribution equipment for Solar PV and Battery Energy Storage System (BESS) installations. All equipment shall comply with the latest editions of **IEC**, **SANS**, **NRS**, and Eskom standards and shall be suitable for indoor and outdoor microgrid applications.

2.1.1 Distribution Board Enclosures

Distribution board enclosures shall be supplied complete with backplates, DIN rails, mounting brackets, gland plates and all fixing accessories.

- **Steel Distribution Board Enclosures**
- 400 × 400 × 200 mm
- 500 × 500 × 250 mm
- 600 × 600 × 300 mm
- 800 × 800 × 320 mm
- 1000 × 1000 × 300 mm
- 1200 × 1000 × 300 mm
- **PVC Distribution Enclosures**
- 26-Way PVC Distribution Board with DIN Rail
- **DIN Rails**
- 3 m galvanized steel DIN rails
- **General Requirements**
- Powder-coated galvanized steel construction
- Removable gland plates
- Lockable doors

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Rotek Industries SOC Ltd

Hard copy printed on: 28/07/2026

- Backplates included
- Suitable for indoor and outdoor applications
- Corrosion-resistant finish

2.1.2 Automatic Changeover Switches (ATS)

Automatic Changeover Switches shall be suitable for generator, utility and Microgrid applications.

Available ratings shall include:

- 150 A Automatic Changeover Switch
- 250 A Automatic Changeover Switch
- 300 A Automatic Changeover Switch
- 500 A Automatic Changeover Switch
- 600 A Automatic Changeover Switch
- 700 A Automatic Changeover Switch

Each ATS shall include:

- Mechanical interlocking
- Electrical interlocking
- Automatic and Manual operation
- Generator start interface
- Remote status indication
- Emergency override
- IEC-compliant switching mechanism

2.1.3 DC Protection Devices

All DC protection equipment shall be rated for photovoltaic applications and suitable for operation up to **1000 VDC** or higher where specified.

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Rotek Industries SOC Ltd

Hard copy printed on: 28/07/2026

- **DC Isolators**
- 20 A 2-Pole DC Isolator (1000 VDC)
- **DC Circuit Breakers**
- 20 A 2-Pole DC Circuit Breaker (1000 VDC)
- **DC Fuse Holders**
- 20 A PV Fuse Holder (1000 VDC)
- 160 A DC Fuse Holder
- 250 A DC Fuse Holder
- 2-Pole Battery Fuse Holder with Indicator
- **DC Fuses**
- 160 A DC Fuse
- 250 A DC Fuse
- PV Fuse 1000 VDC
- **Surge Protection**
- 2-Pole DC Surge Protection Device (1000 VDC)
- Type I+II Surge Protection for Main Distribution Boards
- Type II Surge Protection for Sub-Distribution Boards

2.1.4 AC Protection Devices

The Contractor shall supply AC circuit protection equipment suitable for residential, commercial and industrial installations.

- **Miniature Circuit Breakers (MCBs)**
- 10 A Single Pole
- 20 A Single Pole
- 20 A Double Pole

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Rotek Industries SOC Ltd

Hard copy printed on: 28/07/2026

- 30 A Double Pole
- 40 A Three Pole
- 70 A Three Pole
- 100 A Three Pole
- 125 A Three Pole
- **Moulded Case Circuit Breakers (MCCBs)**
- 150 A Three Pole
- 200 A Three Pole
- 250 A Three Pole
- 300 A Three Pole
- 400 A Three Pole
- 500 A Three Pole
- 600 A Three Pole

Minimum breaking capacity shall comply with IEC 60947 and be suitable for the intended fault level.

- **Residual Current Protection**
- 30 mA Earth Leakage Circuit Breakers
- 4-Pole 63 A Residual Current Devices (RCDs)

2.1.5 Electrical Cables and Accessories

The Contractor shall supply all power, control and communication cables required for complete installations.

- **Power Cables**
- 2.5 mm² Flexible Cable
- 4 mm² Flexible Cable
- 6 mm² Flexible Cable

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.
No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Rotek Industries SOC Ltd

Hard copy printed on: 28/07/2026

- 6 mm² Solar Cable (Red/Black)
- 10 mm² Cable
- 10 mm² Solar Cable
- 35 mm² Flexible Cable
- 50 mm² Flexible Cable
- 70 mm² Flexible Cable
- 95 mm² Flexible Cable
- 16 mm² Green/Yellow Earth Cable
- **Cable Accessories**
- Brass Cable Glands (Sizes 0–5)
- UV-Resistant Flexible Conduit
- CAT6 Communication Cable

2.1.6 Cable Management System

Cable management systems shall include:

- 75 × 75 mm PVC Trunking
- 100 × 100 mm PVC Trunking
- 16 × 25 mm PVC Trunking
- 100 mm Cable Basket / Cable Tray
- 150 mm Cable Basket / Cable Tray

All cable support systems shall be corrosion resistant and suitable for outdoor environments.

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Rotek Industries SOC Ltd

Hard copy printed on: 28/07/2026

2.1.7 Protection, Monitoring and Metering Equipment

The Contractor shall supply all monitoring and protection equipment necessary for safe operation of the Microgrid.

Equipment shall include:

- Energy Meter (CT-Based, Bi-Directional)
- CT Coil Sets
- Monitoring Modules (RS485, Modbus, Ethernet and Wi-Fi)
- Remote Cloud Monitoring System
- PLC / Automation Controller
- Battery Room Temperature Sensors
- Presence Sensors
- IP Cameras
- Fire Detection Systems
- Container Fire Suppression Systems
- BlazeCut Fire Suppression Systems
- Alarm Systems
- High Voltage Warning Labels
- Electrical Warning Tape
- Laminated System Schematic Drawings
- PV Fuse Holders and Fuses

2.1.8 Earthing and Lightning Protection

The Contractor shall supply complete earthing and lightning protection systems comprising:

- Copper Earth Rods

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Rotek Industries SOC Ltd

Hard copy printed on: 28/07/2026

- Earth Clamps
- Earthing Conductors
- Earthing Kits
- Lightning Protection Kits

The installation shall comply with **SANS 10142**, **IEC 62305**, and Eskom earthing requirements.

2.1.9 General Requirements

All electrical distribution equipment supplied under this contract shall:

- Comply with **IEC 60947**, **IEC 61439**, **IEC 61643**, **IEC 60269**, **SANS 10142**, **NRS 097**, and applicable Eskom specifications.
- Be suitable for operation on **230 VAC**, **400 VAC**, **1000 VDC**, and **1500 VDC** systems where applicable.
- Be supplied complete with all mounting hardware, terminations, labels, cable glands, accessories and fixing materials.
- Be factory tested and supplied with Factory Acceptance Test (FAT) reports, certificates of conformity and manufacturer's warranty documentation.
- Carry a **minimum 12-month warranty** against defects in materials and workmanship, with longer manufacturer warranties where applicable.

Indoor: IP54 minimum

3. Quality Assurance and Testing Protocol

3.1 Pre-Delivery Requirements

- **Sample Submission:** Full product samples required 4 weeks before bulk delivery
- **Documentation Package:**
    - Material certificates

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Rotek Industries SOC Ltd

Hard copy printed on: 28/07/2026

- Test reports (factory acceptance tests)
- NRCS certificates of approval
- ISO 9001 certification of manufacturer

3.2 Testing Regime

- **Incoming Inspection:**
  - Visual examination
  - Dimensional verification
  - Material verification (XRF testing for metals)
- **Performance Testing:**
  - PV modules: Flash testing
  - Batteries: Capacity verification
  - Inverters: Full load testing

3.3 Compliance Verification

- Independent third-party testing may be required at supplier's cost
- Eskom reserves right to witness factory tests

3.4 Compliance Framework

All materials, equipment and services supplied under this Contract shall comply with the latest editions of the applicable International Standards, South African National Standards, Eskom Specifications and Regulatory Requirements, including but not limited to:

- **International Standards:** IEC, ISO, UL and IEEE (where applicable).
- **South African Standards:** SANS, NRS and NRCS requirements.
- **Eskom Specifications:** QM58 and all other relevant Eskom technical specifications.
- **Regulatory Requirements:** National Regulator for Compulsory Specifications (NRCS) approvals, where applicable.

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Rotek Industries SOC Ltd

Hard copy printed on: 28/07/2026

- **Occupational Health and Safety Act (Act 85 of 1993)** and all applicable Regulations.
- **Environmental legislation** and applicable environmental management requirements.

Applicable Contract Annexures

The Contractor shall comply with the following Contract Annexures forming part of this Scope of Work:

- **Annexure L – QM58: Supplier Contract Quality Requirements Specification**
    - The Contractor shall implement and maintain a Quality Management System that complies with Eskom's **QM58 Supplier Contract Quality Requirements Specification**.
    - Quality plans, Inspection and Test Plans (ITPs), Factory Acceptance Tests (FAT), material traceability, non-conformance reporting, corrective actions and quality records shall be developed and maintained in accordance with QM58 requirements.
- **Annexure M – SANS 121: Hot Dip Galvanized Coatings on Fabricated Iron and Steel Articles – Specifications and Test Methods**
    - All fabricated steel structures, mounting systems, support frames, cable support systems, brackets, and associated steelwork intended for outdoor installation shall be **hot-dip galvanized in accordance with SANS 121** (or the current equivalent standard).
    - Galvanizing shall be performed after fabrication unless otherwise specified.
    - Coating thickness, surface finish, adhesion, and testing shall comply with the requirements of **SANS 121**.
    - The Contractor shall submit galvanizing certificates and test reports for all galvanized steel components prior to delivery.

Quality Documentation

The Contractor shall provide, as a minimum:

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.
No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Rotek Industries SOC Ltd

Hard copy printed on: 28/07/2026

- Manufacturer's Certificates of Conformance.
- Factory Acceptance Test (FAT) Reports.
- Material Test Certificates.
- Galvanizing Certificates in accordance with **SANS 121**.
- Quality Control Records in accordance with **QM58**.
- Inspection and Test Plans (ITPs).
- Warranty Certificates.
- As-built documentation and commissioning records.

4. Logistics and Supply Chain Management

4.1 Delivery Protocol

- **Lead Times:** Minimum 5 weeks notice for standard items
- **Delivery Windows:** Strict adherence to agreed schedules
- **Transport Requirements:**
    - Flatbed trucks for containers
    - Climate-controlled vehicles for batteries
    - Specialized handling for fragile components

4.2 Site Access and Offloading

- **Prior Notification:** 7 working days notice required
- **Site Requirements:**
    - Offloading equipment to be provided by supplier
    - All lifting gear to have current certification
    - Rigging plans for heavy items (>500kg)

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Rotek Industries SOC Ltd

Hard copy printed on: 28/07/2026

4.3 Packaging and Labelling

- **Packaging Standards:**
    - Wooden crates for fragile items
    - Waterproof wrapping for electrical components
- **Labelling Requirements:**
    - Eskom project number
    - Storage requirements
    - Handling instructions

5. Project Management and Administration

5.1 Communication Protocol

- **Primary Contacts:**
    - Technical queries: ERI Engineering Manager
    - Logistics: ERI Supply Chain Manager
- **Reporting Requirements:**
    - Weekly progress reports
    - Monthly performance dashboards

5.2 Meeting Schedule

- **Kick-off Meeting:** Within 1 week of contract award
- **Progress Meetings:** Weekly
- **Quality Reviews:** Monthly with Eskom Rotek Industries technical team

5.3 Documentation Control

- **Submission Requirements:**
    - Electronic copies in PDF format

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Rotek Industries SOC Ltd

Hard copy printed on: 28/07/2026

- Hard copies with original signatures
- Revision control for all documents

6. Warranty Provisions

- **Standard Warranty Periods:**
  - PV Modules: 15 years product, 25 years performance
  - Batteries: 10 years
  - Inverters: 10 years

7. Health, Safety and Environmental Requirements

7.1 SHE Management Plan

- Site-specific risk assessments
- Method statements for all high-risk activities
- Emergency response procedures

7.2 Environmental Compliance

- Material declarations (RoHS, REACH)
- Battery recycling program
- Packaging recycling requirements

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Rotek Industries SOC Ltd

Hard copy printed on: 28/07/2026