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INSTRUMENTS\_SCOPE**

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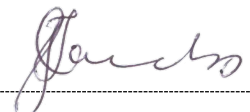
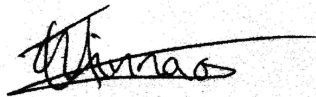
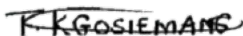
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## **1. Introduction**

This document provides an overview of the scope of work for an enquiry for the supply of power quality monitoring meters for permanent installations and investigations at substations and kiosks. This document provides an overview of the requirements for the different meters, and acts as an index and supplement to the detailed specification.

## **2. Supporting clauses**

### **2.1 Scope**

The Power Quality (PQ) Instrument project is motivated by the regulatory requirement stipulated in the Grid Code which requires Distribution division to report Quality of Supply (QoS) data to the National Energy Regulator of South Africa (NERSA) according to the requirements of SANS1816. Distribution division is required to report on QoS data to NERSA to ensure compliance to the operating license.

Distribution division requires the instruments to meet the Grid Code requirements for new substations and to replace existing instruments which do not meet the grid code compliance as well as international measurement standards (e.g., IEC 61000-4-30) and are at end-of-life.

A secondary factor informing the need for PQ Instrument project is measurement of power quality relating to Renewable Power Producers (RPPs), as suitable instruments are needed to measure and assess the performance of Renewable Power Producers (RPPs) against their contracts with Eskom.

#### **2.1.1 Purpose**

This document provides information relating to the scope of work for an enquiry for the technical evaluation, testing, acceptance and supply of power quality monitoring meters for use in Eskom. A 5-6 month technical evaluation period for meter testing and software evaluation is catered for in 2025. The enquiry includes the following meter types:

**Table 1: Meter Types**

	<b>Meter Type</b>
1	Power Quality Monitoring Instrument, permanent installation – substations, 19 inch,- (including essalaic connector and racks)
2	Power Quality Monitoring Instrument, permanent installation – non-substation, surface mount
3	Power Quality Monitoring Instrument, investigations – surface mount

Suppliers may tender for any single meter type, multiple meter types or all the above meter types. Preference shall be given to suppliers that provide for a single software package that support multiple PQ meter types. Preference will be given to instrument suppliers that can export PQ data in Eskom's defined PQ data format.

The successful tenderers shall be required to provide the necessary templates, drawings, manuals, type test certificates, calibration certificates and training material as well as providing ongoing product training.

#### **2.1.2 Applicability**

This document shall apply to the Technology, and Distribution Divisions.

## **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

- [1] ISO 9001 Quality Management Systems.
- [2] 240-132938253 (ESP 32-1132): Power Quality Monitoring Instrument Specification.
- [3] 240-64038621: Remote Device Communication Standard for Operational and Engineering Data Retrieval and Remote Access.
- [4] 240-82534274: Definition of the Eskom Power Quality Data Import Format (Epqdif).
- [5] IEC 62586-1, Power Quality Measurement in Power Supply Systems – Part 1: Power quality Instruments (PQI).
- [6] IEC62586-2, Power Quality Measurement in Power Supply Systems – Part 2: Functional Tests and Uncertainty Requirements.

### 2.2.2 Informative

None

## 2.3 Definitions

### 2.3.1 General

Definition	Description
<b>Fundamental component</b>	Component whose frequency is the fundamental frequency
<b>Influence quantity</b>	Any quantity which may affect the working performance of measuring equipment
<b>Power quality</b>	Characteristics of the electricity at a given point on an electrical system, evaluated against a set of reference technical parameters
<b>Range of influence quantities</b>	Range of values of a single influence quantity

### 2.3.2 Disclosure classification

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

## 2.4 Abbreviations

Abbreviation	Description
<b>NERSA</b>	National Energy Regulator of South Africa
<b>RPP</b>	Renewable Power Producer
<b>PQ</b>	Power Quality
<b>QOS</b>	Quality of Supply

## 2.5 Roles and responsibilities

This document defines the scope of work for the enquiry of power quality monitoring instruments.

## 2.6 Process for monitoring

Not applicable.

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## **2.7 Related/supporting documents**

Not applicable.

## **3. Power Quality Instruments Project Scope of Work**

The Power Quality (PQ) Instrument project is motivated by the regulatory requirement stipulated in the Grid Code which requires Distribution division to report Quality of Supply (QoS) data to the National Energy Regulator of South Africa (NERSA) according to the requirements of SANS1816. Distribution division is required to report on QoS data to NERSA to ensure compliance to the operating license.

Distribution division requires the instruments to meet the Grid Code requirements for new substations and to replace existing instruments which do not meet the grid code compliance as well as international measurement standards (e.g., IEC 61000-4-30) and are at end-of-life.

A secondary factor informing the need for PQ Instrument project is measurement of power quality relating to Renewable Power Producers (RPPs), as suitable instruments are needed to measure and assess the performance of Renewable Power Producers (RPPs) against their contracts with Eskom.

## **4. Authorization**

This document has been seen and accepted by:

<b>Name and surname</b>	<b>Designation</b>
Thomas Jacobs	Senior Manager: Technology & Engineering (Acting)
Ulrich Minnaar	NP & QOS SC Chairperson

## **5. Revisions**

<b>Date</b>	<b>Rev.</b>	<b>Compiler</b>	<b>Remarks</b>
Aug 2025	1	T. Kgosiemang	Document required for the issue of enquiry

## **6. Development team**

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

- Thabiso Kgosiemang
- Ulrich Minnaar

## **7. Acknowledgements**

Not applicable.