

**KARNATAKA ELECTRICITY REGULATORY COMMISSION**

**No. 16, C-1, Millers Tank Bund Road, Yellappa Garden, Bed Area, Vasanth Nagar,  
Bengaluru, Karnataka 560052**

**GUIDELINES**

Dated: 26.08.2024

The Karnataka Electricity Regulatory Commission (KERC), in exercise of the power conferred under Section 181 read with Section 50 and Section 86(k) of the Electricity Act, 2003, CEA Metering Regulations, CEA Communication Regulations and all other powers enabling it in this behalf, hereby issues Karnataka Electricity Regulatory Commission (Smart Modules for Existing Digital/Static Meters) Guidelines, 2024.

**1. Short Title and Commencement:**

(1) These Guidelines may be called Karnataka Electricity Regulatory Commission (Smart Modules for Existing Digital/Static Meters) Guidelines, 2024

(2) These Guidelines shall come into effect from the date of uploading on KERC website and shall be in force till further amendments thereof.

**2. Introduction:**

The Commission recognizes that in cases where phasing out existing digital/static meters compliant with IS 15884 is not feasible due to their remaining useful life, it is necessary to explore the possibility of upgrading these meters. This can be achieved by using appropriate add-on modules and software to enable the meters to function as part of an integrated metering network. The specifications for these modules and the related software must be designed to ensure compatibility and seamless integration across meters from different manufacturers.

When upgrading metering systems conforming to IS 15884 with smart modules, it is essential that they meet the requirements and is not intended to be made mandatory for distribution licensees. These smart modules typically provide digital/static meters with the capability to communicate with other systems, remotely collect and transmit data, and support advanced metering functions, such as real-time monitoring for energy

management or auditing or identification of energy leakage/loss. Hence, the Commission decided to issue draft Karnataka Electricity Regulatory Commission (Smart Modules for Existing Digital/Static Meters) Guidelines, 2024.

By following these guidelines, Distribution Licensees can successfully implement smart modules in existing meters, thereby enhancing metering capabilities, improving operational efficiency, and ensuring compliance with industry standards. Additionally, attention to cost-effectiveness, interoperability, and data security will be crucial for the successful integration of smart modules and the modernization of energy distribution infrastructure.

To elicit objections/suggestions/comments from the interested persons and stakeholders, the Commission published the draft guidelines in the leading newspapers and also hosted on the KERC official website. The Commission has also conducted a public hearing on 25.06.2024. Since no stakeholders were present for public hearing, the Commission again scheduled the public hearing on 08.07.2024, to elicit the views of the public and stakeholders on the draft Karnataka Electricity Regulatory Commission (Smart Modules for Existing Digital/Static Meters) Guidelines, 2024 issued by the Commission. The Commission has considered the views/ comments/suggestions received from the stakeholders.

As per Section 181 read with Section 55 of the Electricity Act 2003, (the Act) the Karnataka Electricity Regulatory Commission (Commission) is mandated to specify the principles for the said Guidelines. Therefore, in exercise of the powers conferred by the Act, and all the powers enabling it in this behalf, the Commission hereby makes the Guidelines namely, Karnataka Electricity Regulatory Commission (Smart Modules for Existing Digital/Static Meters) Guidelines, 2024.

### **3. Implementation Arrangements:**

Distribution Licensee shall adhere to the following while implementing the smart modules with the existing meters.

#### **a. Residual Life of the Meter:**

Distribution Licensees must conduct a thorough assessment of the residual life of existing meters before integrating smart modules. This assessment ensures that the existing meters

have sufficient operational life left to justify the investment in smart module integration. Factors such as meter age, condition, and technological obsolescence should be considered during this evaluation.

**b. Upgradation Cost:**

A comprehensive cost-benefit analysis should be conducted to evaluate the economic feasibility of integration. This analysis should consider factors such as installation costs, maintenance expenses, and potential revenue gains from the improved metering accuracy and data analytics.

**c. Compliance with Central Electricity Authority (CEA) Metering Regulations:**

Smart modules, upon integration with existing meters conforming to IS 15884/IS15959 standards, must meet the functionality set forth by CEA for an effective smart metering system.

**d. Universal Compatibility of Add-On Modules:**

The distribution licensee must ensure that the modules are compatible with various meters available in their operational areas. For maintenance purposes, meters and modules should be easily swappable in the field, enabling straightforward and cost-effective upkeep. It is crucial that these modules integrate seamlessly with the existing infrastructure and systems to minimize disruptions to the distribution network. To guarantee interoperability and proper functionality across different metering systems, compatibility testing and validation should be performed.

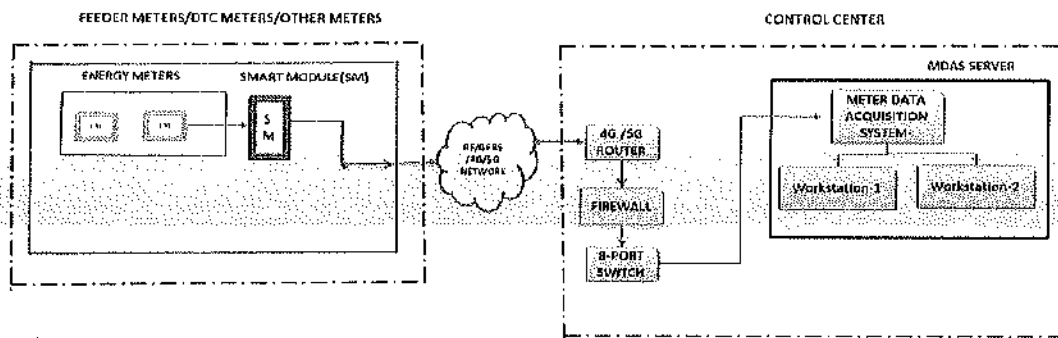
**e. Data Safety Protection:**

Provision for robust data safety measures is essential to protect against data theft and unauthorized access. Distribution Licensees should implement encryption protocols, access controls, and cybersecurity measures to safeguard sensitive metering data. Compliance with CEA Regulations for data protection and best practices should be prioritized to mitigate the risk of data breaches and ensure privacy.

**4. Operational components and support:**

The Commission also proposes a detailed schematic diagram with the following operational components with defined application layer protocol and standards for metering application, telemetry application and control applications, having the

following features:



- a) **Metering System:** Retrofitting of existing digital/static energy meter with add-on module to read meter data and shall be equipped with advanced measurement capabilities, allowing for accurate monitoring and recording of energy consumption patterns with feature essential functionalities such as interval data recording, tamper proof and basic communication capabilities.
- b) **Communication System:** Effective communication is essential for transmitting metering data to utility providers and enabling remote monitoring and control functionalities. Low-cost smart modules shall utilize cost-effective communication technologies such as RF (Radio Frequency) or cellular networks for data transmission as the case may be. These communication systems should be optimized for reliability and efficiency while minimizing infrastructure costs.
- c) **HES (Head-End System):** The HES serves as the central data management platform for aggregating, processing, and analyzing metering data collected from smart modules. In low-cost implementations, HES functionalities shall be streamlined to focus on essential data processing tasks, such as data validation and basic analytics. HES solutions shall offer scalability and affordability, making them suitable for low-cost metering deployments.
- d) **Operational support** shall comprise the meter data management system for generating the reports and alerts. The Smart modules will be installed with corresponding HES.

**5. Reading a meter:**

Distribution licensee shall conduct meter readings once every six months to ensure that energy consumption data is regularly updated, allowing for more precise energy audit and monitoring of usage patterns.

**6. Powers to relax:**

The Commission may by general or special order, for reasons to be recorded in writing may relax any of the provisions of these Guidelines on its own motion or on an application made before it by an interested person.

**7. Powers to amend:**

The Commission may from time to time add, vary, alter, suspend, modify, amend or repeal any provision of these Guidelines.

By the Order of the Commission

  
Secretary

Date :26.08.2024

Place: Bengaluru