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ಸರ್ಕಾರದ ಆಯಾ ಇಲಾಖೆಗಳ ಮುಖ್ಯಸ್ಥರ ಮತ್ತು ಸ್ಥಳೀಯ ಪ್ರಾಧಿಕಾರಿಗಳಿಗೆ
ಸಂಬಂಧಿಸಿದ ಅಧಿಸೂಚನೆಗಳು

KARNATAKA ELECTRICITY REGULATORY COMMISSION
No. 16 C-1, Miller Tank Bed Area, Vasanth Nagar, Bengaluru- 560 052

NOTIFICATION

No: KERC/6/DDD/F-1335/2023-24/1458, Bengaluru, dated: 06.03.2024

**Karnataka Electricity Regulatory Commission (Pre-paid Smart Metering)
Regulations, 2024.**

PREAMBLE:

The Commission notes that, currently only in respect of temporary installations the Commission has ordered installation of prepaid meters and in respect of installations in Government buildings, installing prepaid meters is made optional, at the instance of the consumers. For all the other installations the Commission had not specified any Regulations. With the advent of technology and introduction of smart meters (with inbuilt facility for remote disconnection and reconnection) the electricity consumers may opt to avail power supply to their installations through pre-paid smart meters. Hence, the Commission issued draft Regulations on pre-paid smart metering for such of the consumers who desire to get them installed.

The Commission invited comments / views / suggestions / objections from the stakeholders, general public and interested persons and also held a Public Hearing on 30.10.2023.

(೧೫೫೫)

After considering the comments / views / suggestions / objections from the stakeholders, general public and interested persons, the Commission in exercise of the powers conferred by sub-section (5) of Section 47, Section 86 and Section 181 of the Electricity Act 2003 (Central Act 36 of 2003) and all powers enabling it in that behalf, the Karnataka Electricity Regulatory Commission hereby decides to notify the "Karnataka Electricity Regulatory Commission (Pre-paid Smart Metering) Regulations, 2024" as follows:

1. Short Title and Commencement:

- 1.1 These Regulations shall be called the Karnataka Electricity Regulatory Commission (Pre-paid Smart Metering), Regulations, 2024.
- 1.2 These Regulations shall come into force from 01.04.2024.
- 1.3 These Regulations shall be applicable to the whole of the State of Karnataka.

2. Definitions and Interpretations:

- 2.1 "**Act**" means the Electricity Act, 2003 (36 of 2003) and subsequent amendments thereof;
- 2.2 "**Advance Metering Infrastructure (AMI)**" means an integrated system of smart meters, communication networks and data management systems that enables two-way communication between the utilities and energy meters, and the functional blocks of Advanced Metering Infrastructure typically include Head end system, Wide area network, Neighbourhood area network, Data concentrator unit (DCU) and Home area network;
- 2.3 "**Commission**" means the Karnataka Electricity Regulatory Commission;
- 2.4 "**Consumption Charges**" means the consumption of electrical energy in kWh or kVAh multiplied by applicable energy charges and include demand charges / fixed charges, fuel & power purchase cost adjustment charges (FPPCA), ToD charges, taxes / duties and any other applicable charges.

- 2.5 **“Month”** means calendar Month consisting of 30 days from the date of service. (example: if the installation is serviced on 20th of a month, the Calendar month will be complete on 19th of subsequent month).
- 2.6 **“Disconnection”** means the non-continuance of the electricity supply to the consumer from the licensee's system;
- 2.7 **“Pre-paid / pre-payment meter”** means a smart meter conforming to relevant IS, which facilitates use of electricity only after advance payment;
- 2.8 **“Re-connection” means** continuance of the electricity supply to the consumer from the licensee's system after prepayment of consumption charges by the consumer;
- 2.9 **“Security Deposit”** means deposit prescribed in Karnataka Electricity Regulatory Commission (Security Deposit) Regulations, 2007 and subsequent amendments thereon;
- 2.10 **“Smart Meter”** means an AC static watt-hour meter with time of use registers, internal connect and disconnect switches with two-way communication capability. It is designed to measure the flow of forward (import) or both forward (import) & reverse (export), store and communicate the same along with other parameters defined in relevant standards. It shall be remotely accessed for collecting data / events, programming for select parameters to be provided by the distribution utility for supplying electricity to an installation / premises.
- 2.11 **“TOD Tariff”** means The Time of Day tariff for peak and off-peak durations as may be prescribed by the Commission;
- 2.12 All other words and expressions used in these Regulations although not specifically defined herein above, but defined in the Karnataka Electricity Regulatory Commission's **“Conditions of Supply of Electricity of Distribution Licensees in the State of Karnataka” / Regulations on “Recovery of Expenditure”, other Regulations of the Commission and in the Act** shall have the same meaning.

3. Applicability and Procedure for availing facility under pre-paid Meters:

These Regulations shall be applicable to all categories of consumers (new and all existing consumers).

Provided that availing power supply through a smart pre-paid meter shall be at the option of the consumer except temporary installations, for which it is mandatory.

3.1 The existing/new consumers of the Distribution licensee may make an application to the licensee for arranging power supply through a smart pre-paid meter. The licensee shall allow the consumer to purchase the meter from the retail outlets of the Licensees, conforming to specified CEA Regulations/ Indian Standards, at their own cost and dispose of the existing meter, as per the existing practice, so as to avoid its misuse.

3.2 The pre-paid smart meters shall communicate to the distribution licensee, all the metered data at least once in a day and an authorized representative of the Distribution licensee shall physically read the meter once in every quarter. The data regarding energy consumption shall be made available on real time basis, to the consumer, through website, mobile App or any other digital mode.

3.3 In case maximum demand recorded by the smart pre-payment meter exceeds the sanctioned load in a month, the bill, for that billing cycle, shall be calculated based on the actual recorded maximum demand and consumers shall be informed of this change in calculation through Short Message Service or mobile App:

Provided that the revision of the Sanctioned Load, if any, based on the actual recorded maximum demand shall be as under:

In case of increase in recorded maximum demand, at least three times during a financial year, the lowest of such increased monthly maximum demand, shall be considered as the revised sanctioned load, and the same shall be automatically reset from the billing cycle in next financial year: and

3.4 In case the consumer reduces his sanctioned load, the revision of sanctioned load shall be done in accordance with the Regulations /Supply Codes/Standard Operating Procedures issued by the Commission.

4. Security Deposit:

In case of new connection with pre-paid smart meter, the licensee shall not collect any security deposit, in pursuance of sub section (5) of Section 47 of the Act.

Provided that in respect of the existing consumer migrating to pre-paid smart metering arrangement, the security amount deposited with the licensee shall be adjusted against the last bill including arrears, if any, and the balance, if any, payable to / by the consumer shall be settled in full, at once.

Provided further that in case of conversion of pre-paid to post-paid again security deposit shall be paid by the consumer in addition to other formalities, if any.

5. Metering and Communication:

5.1 The Licensee shall ensure that the pre-paid smart meters purchased by the consumers conform to the technical requirements of relevant standards/regulations / guidelines of CEA, as amended from time to time. The consumer shall get the meters tested at the licensees' meter testing lab or any NABL accredited labs before installation.

5.2 Pre-paid smart metering system shall have facility for recharge of the amount in the consumers' account through online such as mobile App, Credit / Debit Cards, web application or digital payment systems (e-wallet / wallet, web portal) etc., to be provided by the licensee on real time basis and also send notification to the consumer on registered mobile phone, in case of minimum/insufficient amount.

5.3 Appropriate Communication facility as per relevant standards for meter data transfer shall be provided by the Licensee. The Licensee shall comply with the relevant Standards / Regulations regarding cyber security. The pre-paid smart meter shall be compatible with AMI application of the licensee and communicate the data. The pre-paid smart meter shall have adequate number

of registers and the facility for Time of Day (TOD) and kVAh based tariff application:

Provided that the prepaid smart meters shall have swappable communication port with sealing arrangement suitable for different communication technologies.

Provided further that full stack Head End System (HES) is deployed by the Distribution Licensees, HES available in the market or with the meter manufacturer may be utilized on monthly / yearly subscription basis.

- 5.4 The AMI software application of the licensee shall enable auto reconnection after successful recharge of the meter so that the connection is automatically restored.

6. Billing of electricity charges:

- 6.1 The pre-paid smart meter billing system by the licensee shall have the provision for ensuring recovery of fixed charges, Fuel & Power Purchase Cost Adjustment (FPPCA) charges, Time of Day (ToD) tariff and the energy consumption charges, taxes or any other applicable charges, as per the applicable tariff schedule / specific orders of the Commission.

The software solution provided for pre-paid smart meter billing shall be capable of implementing the tariff as per tariff orders approved by the Commission from time to time.

- 6.2 At the time of availing prepaid metering facility, the consumer shall pay minimum amount equivalent to the monthly fixed/demand charges plus energy charges as per consumers' requirement at the prevailing tariff rates. The consumer may recharge the energy charges as and when required in multiples of Rs.100/-, subject to a minimum amount equivalent to one week's average consumption as recorded in the immediately preceding week/month. There shall be no maximum limit for recharge amount.

Provided that in case of newly serviced installations where previous average consumption of at least one week is not available, the Distribution Licensee shall

compute the consumption charges for one week based on the burning hours' basis as provided in the "Conditions of Supply of Electricity of Distribution Licensees in The State of Karnataka / Regulations / Codes / Orders of the Commission.

- 6.3 The computation of the energy charges shall take place on a daily basis, as per tariff schedule / specific orders of the Commission. The energy charges as per actual consumption shall be deducted on a daily basis from the amount paid by the consumer. The monthly fixed charge shall be deducted at the beginning of the calendar month. Thereafter the next recharge by the consumer shall be for a minimum amount of monthly fixed charges and energy charge as per his requirement. In case the balance of energy charge is less than the full fixed charge the supply should be disconnected automatically. Further, in case the energy charges deposited by the Consumer are more than monthly fixed charges, there should be automatic transfer of amount from energy charges to monthly fixed charge account. Thereafter, in case the balance of energy charges is less than 75% of the weekly energy charges, communication shall be automatically sent to the consumer to pay the weekly energy charges.

Illustration:

- (a) *LT Domestic Installation (or any other installation) with Sanctioned Load of 3 KW or as applicable to respective category of consumers.*
- (b) *Fixed Charges: Rs.120 / KW per month or as applicable to respective category of consumers.*
- (c) *Energy Charges: Rs.5.90 per unit or as applicable to respective category of consumers*
- Any other charges viz., FPPCA, TOD, HV Rebate, etc., will be treated as energy charges only.*
- (d) *Average Weekly Consumption (based on previous month or any other month to be fixed by the licensee for the consumer): 40 units.*
- (e) *Starting of the billing month: 1st day of every calendar month or any other day fixed by the licensee.*
- (f) *Irrespective of the billing day, the calendar week from Monday to Sunday of a calendar month will be reckoned as week for the purpose of prepaid recharges.*

Process Flow

- Consumer to pay fixed charges on 01.04.2024: **Rs.360 (Rs.120 x 3 KW)**
- Consumer to recharge the energy charges account to minimum of 40 units (assumed weekly consumption) when he pays for the fixed charges. If the consumer's prepaid account is already having balance of energy charge equivalent to 40 units or more, then the recharge is not necessary.
- The electricity tax shall be collected at the time of recharge only.
- The prepaid balance of energy charges account will be reduced on a daily basis as and when the installation consumes energy @ **Rs.5.90 per completed unit**.
- Consumer will recharge the energy charges account for 40 units in the second week of the month: **Rs.5.90 x 40 units = Rs.236 + Tax Rs.21 = Rs.257**.
- Accounting: The consumer energy charges account shall be credited with Rs.236 and the Tax Rs.21 to be separately accounted as payable to Government.
- Whenever, the energy charges account reaches 75% of the weekly energy charges, alert shall be sent to the consumer.
- In case the consumer energy charges account reaches ZERO balance, the installation shall be temporarily disconnected and alert shall be sent to consumer.
- The billing process as above continues.
- At the end of the billing month, the fixed charges will become ZERO. A summary of the charges paid and utilised shall be sent to the consumer via WhatsApp, email, Mobile App etc.
- Alert shall be sent to consumer for payment of FC and energy charges, for the subsequent period, if required. If the balance amount is more than the Fixed Charges, required amount will be adjusted to Fixed Charges and the balance will be Energy Charges. In case the Balance is less than the Fixed Charge, then the Consumer has to pay the remaining Fixed Charge or the Installation will be disconnected.

- While accepting recharge amount, recovery of monthly fixed charge shall be ensured and the break-up of fixed/demand charge and energy charge shall be communicated to the consumer.

Note: The rates indicated here are only for illustration. For actual billing purposes, the rates as applicable from time to time shall be considered.

- 6.4 In case of failure of communication of smart prepaid meters for any reason, daily energy charges shall be calculated on the basis of estimated daily consumption based on average of immediately available last 7 (seven) days recorded consumption to enable the consumers to arrange for prepayment if the balance amount is less. The prepaid balance shall be immediately updated on the basis of actual consumption once the reading is received from such pre-paid smart meter.
- 6.5 In case, the consumers' exhaust 75 % of the energy charges amount in a billing month, the communication system shall notify the same to the consumers alerting them to recharge the prepaid account.
- 6.6 In case, the consumers fail to recharge their prepaid meter account and their balance runs out to zero, the meter shall automatically disconnect the supply of the consumers.
Disconnection on zero balance shall be deemed to be temporary disconnection.
Disconnection process shall be scheduled only between 10 AM to 1 PM of any particular day and disconnection of power supply shall not be resorted to during weekly and other general holidays to avoid inconvenience to consumer (till such time the reconnection on real time basis is implemented by the licensee).
- 6.7 Post disconnection, consumers shall be notified through digital mode about the same along with the details of zero / negative balance amount.
- 6.8 In case of temporary disconnection, the consumer may recharge the meter and restore the electricity supply, subject to automatic adjustment of the recharged amount towards the negative balance, if any.

6.9 The software application of the licensee shall initiate auto reconnection after successful recharge of the meter. In case of HT/LT installations where the CT operated smart prepaid meters are installed, the facility of automatic disconnection/ reconnection is not available in the smart prepaid meter, the distribution licensees shall physically disconnect/ reconnect the installation, till such time the facility of automatic disconnection/ reconnection is enabled in the meter.

7. Electricity Taxes / Duties payable to Government:

Electricity Tax / Duties, as per the Government Rules / Orders, shall be payable by the consumers at the time of recharge of his pre-paid account. The licensee shall maintain separate account for such electricity taxes / duties. However, while recharging the pre-paid account, the licensee shall credit the pre-paid account with applicable tariff charges.

8. Migration of the existing post-paid consumers to prepaid smart meter:

8.1 The existing Consumer may be allowed to migrate to prepaid mode subject to clearing all arrears or after adjustment of the Security Deposit. There shall not be any previous arrears outstanding in the name of the consumer before switching to prepaid metering mode.

8.2 In case of any revision in consumers' account due to any demand (arrears) / refund discovered at later stage including any amount pointed out by Audit, a notice on the revised billing account shall be sent to consumer on mobile application / SMS / email, etc., giving 15 (fifteen) days to remit the amount.

After 15 days of notice, the amount of arrears or amount of interest or refund, if any, payable by / to consumer shall be adjusted to pre-paid balance of consumer. In case of insufficient balance, the installation shall stand disconnected temporarily, till recharge by the consumer.

Provided that the licensee shall complete the exercise of audit of relevant consumers' account within 2 (two) months from the day of consumer switching over from post-paid to pre-paid facility.

9. Disconnection:

- 9.1 In case, the consumers do not recharge their account after temporary disconnection as prescribed in clause 6, the account may reach negative balance on account of applicability of Monthly Minimum Charges or Fixed Charges or any other charges as decided by the Commission, even if there is no electricity consumption by the consumers. The notification / alert shall be considered as notice for recharging the account and licensee shall disconnect the supply on failure to recharge the account by consumers, without any further notice.
- 9.2 The temporary disconnection shall be restored within 6 (six) months only after recharging with an amount adequate to recover the monthly minimum charges or fixed charges or any other charges decided by the Commission even if there is no consumption by the consumer during temporary disconnection period.
- 9.3 If the consumer fails to recharge the account within 6 (six) months of temporary disconnection, the connection shall be disconnected permanently, and the meter shall be physically removed from the consumer premises.

The Distribution Licensee shall initiate the proceedings for recovery of arrears, if any, from the consumer as per the provisions of "Conditions of Supply of Electricity of Distribution Licensees in The State of Karnataka / Regulations / Codes / Orders of the Commission".

After permanent disconnection, fresh connection to such consumer shall be done as per the "Conditions of Supply of Electricity of Distribution Licensees in The State of Karnataka / Regulations / Codes / Orders of the Commission".

10. Replacement of meters:

- 10.1 In case the pre-paid smart meter gets damaged or burnt out the same shall be got tested at the Licensees' meter testing lab or any NABL accredited labs. In case the reasons for the pre-paid smart meter getting damaged/ burnt out is attributable to the consumer, the same shall be replaced at the cost of the consumer. If the reason is attributable to the system constraints, the burnt out prepaid smart meter shall be replaced immediately at the cost of licensee.

11. Training:

11.1 The licensees shall provide adequate training to their staff to facilitate smooth / proper implementation of the pre-paid smart metering system.

11.2 The Server for the pre-paid smart metering system, necessary software shall be provided and operated by the licensee or its authorised vendor, as the case may be, for proper functioning of the prepaid metering system.

12. Interpretation:

If any question relating to the interpretation of any provision of these regulations arises, the decision of the Commission shall be final.

13. Power to amend:

The Commission, for reasons to be recorded in writing, may at any time vary, alter or modify any of the provisions of these Regulations by specific order.

14. Power to remove difficulties:

If any difficulty arises in giving effect to any of the provisions of these Regulations, the Commission may, by a general or special order, not being inconsistent with the provisions of these Regulations or the Act, do or undertake to do things or direct licensees to do or undertake such things which appear to be necessary or expedient, for the purpose of removing the difficulties.

15. Power of relaxation:

The Commission may in public interest and for reasons to be recorded in writing, relax any of the provisions of these Regulations.

By the approval of the Commission,

Secretary
Karnataka Electricity Regulatory Commission

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