

Discussion note on Open Access and Metering Issues :

Sub: Metering issues - Location, Ownership, Cost Recovery Mechanism and Responsibilities of Licensees/Generating Companies

References:

- (i) CEA (Installation and operation of meters) Regulation, 2006.
- (ii) CEA (Installation and operation of meters) Amendment Regulation, 2010.
- (iii) CERC Open Access in inter-State Transmission- Regulations, 2008.
- (iv) CERC Open Access in inter-State Transmission (Amendment)- Regulations, 2009
- (v) CERC Open Access in inter-State Transmission (2nd Amendment)- Regulations, 2013
- (vi) Licensee's duty for supply of electricity on request, Regulation 4 of 2013.

1. Difficulties that the consumers facing are;

- a) The Transco/Discoms are directing OA consumers to procure all three meters viz., main meter, check meter and standby meter on their own, though the responsibility lies with the Licensee.
- b) Licensees are directing the consumers to get the meters and allied equipment tested by NABL accredited laboratory.

The details are furnished below:

2. The Central Electricity Authority issued Regulation, 2006 (Installation and Operation of meters). The main features of the Regulation are discussed below:

3. Clause 3 of CEA Regulation reads as follows:

“3. Applicability of regulations.-

(1) These Regulations shall be applicable to meters installed and to be installed by all the generating companies and licensees who are engaged in the business of generation, transmission, trading, distribution, and supply of electricity and to all categories of consumers.”

4. Definitions mentioned in CEA Regulation cited in reference (1) extracted hereunder:

2 (1)(i) ‘Check Meter’ means a meter, which shall be connected to the same core of the Current Transformer (CT) and Voltage Transformer (VT) to which main meter is connected and shall be used for accounting and billing of electricity in case of failure of main meter;

- 2(1)(j) 'Consumer Meter' means a meter used for accounting and billing of electricity supplied to the consumer but excluding those consumers covered under Interface Meters;
- 2(1)(k) 'Correct Meter' means a meter, which shall at least have, features, Accuracy Class and specifications as per the Standards on Installation and Operation of Meters given in Schedule of these Regulations;
- 2(1)(n) 'Interface Meter' means a meter used for accounting and billing of electricity, connected at the point of interconnection between electrical systems of generating company, licensee and consumers, directly connected to the Inter-State Transmission System or Intra-State Transmission System who have to be covered under ABT and have been permitted open access by the Appropriate Commission;
- 2(1)(o) 'Main Meter' means a meter, which would primarily be used for accounting and billing of electricity;
- 2(1)(v) 'Standby Meter' means a meter connected to CT and VT, other than those used for main meter and check meter and shall be used for accounting and billing of electricity in case of failure of both main meter and check meter;
- 2(1)(w) 'Supplier' means any generating company or licensee from whose system electricity flows into the system of another generating company or licensee or consumer;

5. Ownership of meters:

1. Clause 6 of CEA Regulation reads as follows:

"6. Ownership of meters.-

(1) Interface meters

- (a) All interface meters installed at the points of interconnection with Inter-State Transmission System (ISTS) for the purpose of electricity accounting and billing shall be owned by CTU.
- (b) All interface meters installed at the points of interconnection with Intra-State Transmission System excluding the system covered under sub-clause (a) above for the purpose of electricity accounting and billing shall be owned by STU.
- (c) All interface meters installed at the points of inter connection between the two licensees excluding those covered under sub-clauses (a) and (b) above for the purpose of electricity accounting and billing shall be owned by respective licensee of each end.

(d) All interface meters installed at the points of inter connection for the purpose of electricity accounting and billing not covered under sub-clauses (a), (b) and (c) above shall be owned by supplier of electricity.

(2) Consumer meters

(a) Consumer meters shall generally be owned by the licensee.

(b) If any consumer elects to purchase a meter, the same may be purchased by him. Meter purchased by the consumer shall be tested, installed and sealed by the licensee. The consumer shall claim the meter purchased by him as his asset only after it is permanently removed from the system of the licensee.”

2. Issues related to ownership of Interface meters:

To decide ownership issue, Clause 6(1) of CEA Regulation should be read with Definition of “Interface Meter” (Clause 2(1)(n)) and Definition of “Supplier” (Clause 2(1)(w))

- As per clause 6(1) (a) all interface meters installed at the points of interconnection with Inter-State Transmission System (ISTS) for the purpose of electricity accounting and billing shall be owned by CTU. (Not in the purview of SERC)
- As per Clause 6(1)(b) of Metering Regulations, all interface meters installed at the points of inter connection with intra-state transmission system for the purpose of electricity accounting and billing, shall be owned by STU.
- As per Clause 6(1)(c) of Metering Regulations, all interface meters installed at the points of inter connection between the two licensee for the purpose of electricity accounting and billing, shall be owned by respective licensee of each end.
- As per Clause 6(1)(d) of Metering Regulations, all interface meters installed at the points of inter connection for the purpose of electricity accounting and billing not covered under sub-clauses (a), (b) and (c) above shall be owned by supplier of electricity.

Explanation:

Interface meters:

- (i) The Supplier shall own all interface meters installed at the points of inter connection for the purpose of electricity accounting and billing.

- (ii) As per 2(1) (w) of CEA Regulation cited in reference (1), 'Supplier' means any generating company or licensee from whose system electricity flows into the system of another generating company or licensee or consumer.
- (iii) From the above, a Supplier can be a generating company, transmission licensee or a distribution licensee from whose system electricity flows into the system of another generating company or licensee or consumer.
- (iv) If a consumer is connected to the Distribution system, the Distribution Licensee will become supplier and shall own the meter. If a consumer is connected to the transmission system, the Transmission Licensee being the supplier shall own the meter.

Directive proposed:

The Distribution Licensees or Transmission Licensees or Generating Companies, being Suppliers, shall own, test and maintain all interface meters and allied equipment. Maintenance includes rectification, replacement of defective meters and allied equipment by the Supplier.

6. Interface Meters and cost bearing mechanism:

Provisions in CERC Open Access Regulations, 2008, cited in reference (3) are extracted hereunder:

(a) Definition of Intra-state entity;

"2 (1)(h) "intra-State entity" means a person whose metering and energy accounting is done by the State Load Despatch Centre or by any other authorized State utility;"

(b) Special Energy Meters;

"22.(1) Special Energy Meters shall be installed by the Central Transmission Utility for and at the cost of the regional entities and by the State Transmission Utility or the distribution licensee as the case may be, for and at the cost of the intra-State entities."

Who has to bear metering cost and install meters?

(a) Explanation:

- (i) As per the definition of "Intra-state entity", the State Load Despatch Centre (SLDC) does energy accounting for all open access consumers and Distribution Licensees (Discoms). Hence all open access consumers and Discoms will become Intra-state entities.
- (ii) As per the definition of "Special Energy Meters", the State Transmission Utility (STU) or Distribution Licensee as the case may

be, shall install meters for and at the cost of the intra State entities, i.e., Open Access users (intra-state entities).

(b) Directive proposed:

The STU or Distribution Licensee as the case may be, shall procure meters for and at the cost of the intra-State entities, i.e., Open Access users. The responsibility of installing interface meters lies with the STU or Distribution Licensee as the case may be.

The STU or Distribution Licensee as the case may be, shall communicate estimated cost of meters & allied equipment and cost of works related to installation of Interface meters within seven days from the date of receipt of application from the applicant who seeks open access. The Licensee shall complete installation of metering equipment, including meter testing within one month from the date of receipt of full payment.

7. Consumer Meters - Cost recovery mechanism

Clause 7 of Regulation 4 of 2013 reads as follows:

“7. Specific provision for Service Line Charges

(1) In case of applications for new connections, where such supply requires extension of line from the existing distributing main to the consumer's premises, the Distribution/Transmission Licensee shall estimate the cost of service line excluding the cost of terminal and metering arrangements at the premises of the consumer. The Distribution/Transmission Licensee shall estimate the cost of service line as per the latest cost data based on actual survey and line length. The Distribution/Transmission Licensee shall commence the work after receipt of estimated charges from the applicant.

(2) It shall be the duty of every distribution licensee to provide electric meter for giving electric supply to a consumer. Either the Licensee or the Consumer can bear the cost of meter and allied equipment. If the Licensee bears such cost, it may collect meter rent as per the charges approved by the Commission under section 45 of the Act. Alternatively, the Licensee may require the Consumer to bear the full cost of meter and allied equipment and in such a case, the Licensee is not entitled to collect meter rent.

(3) a) The Licensee may convert an existing dedicated feeder, having demand incident on the feeder less than 50% of line capacity, into an express feeder to extend power supply to the same class of new consumers of that of existing category, if situation demands for want of space and/or right of way.

b) The minimum 50 % demand requirement shall not be applicable for Government of India and Government of A.P service connections, where safety and security is of prime importance.”

Cost Recovery mechanism:

Explanation:

The metering cost can be collected as one time charge from intra-state entities. Alternatively, the metering cost can be permitted in their Aggregate Revenue Requirement and they can be permitted to levy meter rent to recover the cost of metering over a period of 10 years, which is the life of a meter.

The CERC Regulation clearly specifies that the metering and allied equipment should be installed by STU or Discom (in case of interface meters), as the case may be, for and at the cost of intra-state entities.

The Commission dealt the meter cost recovery procedure in clause 7(2) of Regulation 4 of 2013, which is in line with CEA and CERC Regulations.

Directive Proposed:

The Licensees shall follow the provisions mentioned in Regulation 4 of 2013 of APERC, since the cost recovery mechanism of metering is clearly mentioned in Clause 7 (2) of Regulation 4 of 2013 and needs no clarification.

8. Responsibility of Meters testing:

Clause 18(1) (a) of CEA regulation reads as follows:

18 (1)(a) At the time of commissioning, each interface meter shall be tested by the owner at site for accuracy using standard reference meter of better accuracy class than the meter under test.

(a) Explanation:

As per clause 18(1)(a) of CEA Regulation, the responsibility of meter testing lies with the Licensee. The Licensees are insisting the consumers to get the meters tested by NABL accredited laboratories. The Licensees do not possess accreditation from “National Accreditation Board for Testing and Calibration Laboratories (NABL)”, Govt. of India for their laboratories. In the absence of NABL accreditation, the Licensees are not authorized to test and calibrate the meters.

(b) Directive Proposed:

The Licensees (Transmission Licensees and Distribution Licensees) shall get accreditation of NABL for their laboratories as the responsibility of meter testing lies with the Licensee. The Licensees shall test the meters for

accuracy on their own or get tested the meters by NABL accredited laboratories. The Licensees shall not levy any charge for meter testing. However, if any consumer requests meter testing to verify its accuracy in his own interest, in such case, the Licensee is entitled to collect meter testing cost from the consumer.

9. Location of interface meters- Generating Station

- (i) Relevant provisions in CEA Regulation cited in reference (1) are extracted hereunder:

Clause 7 (1) (1) of Regulation reads as follows:

Main meter - on all out going feeders.
Check meter - on all out going feeders.
Standby meter - (i) High voltage (HV) side of Generator Transformer
(ii) High voltage (HV) side of all station auxiliary transformer

Directive proposed:

The Generating Company shall install all interface meters i.e., Main Meter, Check Meter and Standby Meter as mentioned in Clause 7 (1) (i) of the CEA Regulation 2006 on 'Installation & Operation of Meters.'

10. Location of Interface Meters (Open Access Consumers):

As per Clause 7 (1) (4) of Regulation, the appropriate Commission has to decide the location of all three meters viz., main meter, check meter and standby meter. The said clause reads as follows:

(i) Consumer directly connected to the Inter-State Transmission System or Intra-State Transmission System who have to be covered under Availability Based Tariff and have been permitted open access by the Appropriate Commission

(ii) For consumers connected to distribution system and permitted open access by the Appropriate Commission.

(iii) Any other system not covered above.

Apart from location of meters, the Commission has to issue guidelines on provision of check meter, stand by meter and ownership of these meters.

Explanation:

As per the CEA Regulations, the ownership always lies with the STU or Distribution Licensee, as the case may be. The Commission has to decide location of meters in case of all interface meters (consumers permitted Open Access) viz., main meter, check meter and stand by meter.

Proposal:

Location of main meter: At Consumer premises.

Location of check meter: At Consumer premises, connected to the same core of CT and VT to which main meter is connected.

Location of Standby meter: At Consumer premises on a separate CT and VT.

The check meter is meant for energy accounting and billing, in case of failure of main meter. The stand by meter is meant for energy accounting and billing, in case of failure of both main and check meter.

As per the CEA Regulation, all the three meters, viz., Main meter, Check meter and standby meter will qualify for Interface meters; these meters have to be installed by STU or Discom as the case may be.

Directive Proposed:

The STU or Distribution Licensee, as the case may be, shall install meters at locations as mentioned as below:-

- (a) Location of main meter: At Consumer premises.
- (b) Location of check meter: At Consumer premises, connected to the same core of CT and VT to which main meter is connected.
- (c) Location of Standby meter: At Consumer premises on a separate CT and VT.

11. Location of meters in case of dedicated feeders:

The Commission approved to keep the billing meter at the sending end in case of dedicated feeders by Regulation 4 of 2013. The consumers represented before the Commission that the dedicated feeders were being converted to common feeders, though the entire cost of line was borne by consumers and they were denied open Access stating that they do not have dedicated feeder.

Clause 2(f) of (Licensee's duty for supply of electricity on request) Regulation 4 of 2013 reads as follows:

"2(f) "Dedicated Feeder" means feeder emanating from substation where transformation to the required voltage takes place and feeds power to a single consumer having contracted capacity of minimum fifty percent of line capacity or more. The Consumer shall bear the full line cost, including take off arrangements at Substation end of the Licensee. In such cases the billing meter shall be provided at the Licensee's sub-station;"

Concept of dedicated feeder:

On dedicated feeders, the consumers were allowed higher capacity of power compared to capacity fed through common feeders.

Special relaxations permitted in case of dedicated feeder

Voltage	Capacity limit on Common feeder	Capacity limit on Dedicated feeder	Advantages to consumer	Disadvantages of Discom
11 kV	1500 kVA	2500 kVA	1) Can avoid going for 33 kV supply and saves three times infrastructure cost. 2) Reliability is more and less interruptions. 3) Can avail open access even in shortage scenario.	1) Discom incurs more losses. 2) Take off bays in SS are limited. Thus loses opportunity to serve more number of consumers.
33 kV	5000 kVA	10000 kVA	-do-	-do-

By permitting higher capacity, the Licensee is incurring higher losses, as losses are proportional to square of the current. The dedicated feeder has special provision, and provisions applicable to consumers common feeder, cannot be applied to dedicated feeder consumers. Providing meter at sending end, also bars the Discom to convert it into a common without the consent of the consumer.

Some of the consumers have raised objections on installation of meter at Licensee's SS, stating that they cannot monitor 15 minutes block wise consumption. The APTRANSCO and Discoms have informed to the consumers stating that display mechanism of meters will be provided at Consumer premises, provided they bear the installation cost of Display. This is in line with the CEA Regulation and can be implemented.

It is advisable to install meter at the Licensee's SS, as mentioned in Regulation 4 of 2013.

The qualifying requirement to avail power supply through a Dedicated Feeder, a consumer needs to have a contracted capacity of minimum fifty percent of line capacity or more. In such cases, the billing meter shall be provided at the Licensee's Sub-station.

However, if any consumer is willing to forego the status of Dedicated Feeder, the billing meter can be placed at consumer premises. In such

cases, the Distribution Licensee is free to convert the feeder into an express feeder, if situation demands.

Proposal on Location of meters:

Location of main meter: At Licensee's SS.

Location of check meter: At Licensee's SS premises, connected to the same core of CT and VT to which main meter is connected.

Location of Standby meter: At Consumer premises on a separate CT and VT.

12. Issue related to reading open access meters:

The issue of meter reading of HT services and billing settlement of open access consumers came for discussion on 01-07-2014. The meters of HT services in general, are read on 20th to 23rd of every month. The intra-state open access billing settlement is done as per the calendar month i.e., from 1st to end of the month. As the billing dates for open access consumers and Discom consumers are different, the settlement is becoming cumbersome.

To make it easy, it is proposed to direct the Discoms/Transmission Licensees to read the meters on 1st of every month.

Directive:

The HT services meters are being read on 20th to 23rd of every month, whereas intra-state open access billing settlement is done based on calendar month. To avoid difficulties in implementing the billing settlement, the Discoms/Transmission Licensees shall read the meters of all HT services on 1st of every month.

13. ABT meters for 1 MW and above services:

It is proposed to install ABT meters for all 1 MW and above services, with the expenditure to be borne by Licensee initially. The relevant expenditure can be recovered as approved by the Commission through ARR. This will avoid delay in issuing open access clearance and power supply through open access.

14. Present practice:

Now the STU or Discoms are insisting the OA consumers to buy the meters on their own and insisting the OA consumers to get tested the meters on their own. It consumes more time for consumers to buy meters. To avoid delay, the STU or Discom should procure meters and be ready for installation as and when requirement arise.

This will also lead to reduction of metering procurement cost and delay can be minimized.

The Licensee/Discoms shall own all the three meters and allied equipment and maintain them. If, full metering cost is collected as a onetime amount, whenever the metering equipment is dismantled permanently, it has to be given back to the Consumer who has borne the cost, as mentioned in clause 6(2)(b)of CEA Regulations.

15. Conclusion

- 1) The Licensee/Discoms shall procure and install the meters as per the CEA Regulations.
- 2) Owner ship always lies with the Licensee.
- 3) The Licensee is entitled to collect the metering cost from the Consumers, either in the form of one time charge or in the form of meter rent, to recover its full cost, over a period of 10 years.
- 4) If metering cost is collected in the form of one time charge, the metering equipment should be returned to the consumer as and when it is permanently dismantled.
- 5) Responsibility of meter & allied equipment testing lies with the Licensee/Discoms.
