Comments and Suggestions on

4th Amendment of CEA (Installation & Operation of Meters) Regulations, 2006.

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21st April 2021

The Central Electricity Authority (CEA) has sought public comments on the proposed amendment to the notified regulation of CEA (Installation & Operation of Meters) Regulations, 2006.

In wake of changing technology and its availability thereof, amendments to the CEA regulations on installation and operation of meters will indeed benefit utilities and consumers alike. However, amendments to these crucial regulations should also take into consideration operational and implementation challenges, applicability given ground realities in multiple states and provide flexibility to states based within the bounds of an overarching, standard framework. Our comments on the proposed amendment are to suggest that some of regulations need improvement in order to ensure effective implementation and benefit realization of the same by the sector.

1. Regarding new meters to be prepayment or smart meters with prepayment facility and replacement of existing meters
   In regulation 4, sub-regulation (1), clause (b)

   Meters are the direct interface of consumers with the utility. A shift to pre-paid metering system requires a substantial change in the utility metering and billing infrastructure. It will also require a significant change in consumer behavior related to payment for electricity. Also, only a tiny fraction of the meters today are pre-paid meters and there is not enough documentation on the lessons and best practices. Finally, a decision to shift to pre-paid meters will also depend on the utility's financial conditions, consumer mix, and technical capability. A top-down mandate may result in less than desirable implementation of smart meters leading to severe consumer challenges and distrust. Hence, we recommend that instead of a blanket protocol of shift to prepayment or smart prepayment meters, an incentive-based mechanism to push utilities to move to better metering systems is preferred. The incentives could help utilities build the necessary infrastructure required to support such a shift in meter operation through pilots and planned meter replacements. Secondly, the regulations also allow for prepayment meters without smart features which is in contrast to the various schemes and announcements about installing smart meters.

all schemes proposed to alleviate AT&C losses (such as erstwhile IPDS) suggest installation of Smart Meters. The suggested regulations could create confusions in implementation of better metering systems. Therefore, it is suggested that the regulation be amended to only provide a guiding framework as detailed below:

"new Consumer Meters maybe Prepayment Meters or Smart Meters with prepayment feature:
Provided that the smart meter rollout for new consumers takes place after approval from the appropriate commission. "

2. Regarding ownership of consumer meters
   In regulation 6, sub-regulation (2), clause (a)

   The Pre-payment or Smart Pre-payment Meter installations and operations through newer expenditure models are indeed supporting utility cashflows by requiring little or no upfront payments. However, the process of replacement of meters through this process may take a few years. Besides few consumers for due to technical challenges may have to remain on existing metering systems. The utility will have to continue to maintain and operated meters in such conditions. Hence, we suggest, the regulation should not be omitted and reworded to include 'may' instead of 'shall'. Suggested: ***'Consumer meters may generally be owned by the licensee'***

3. Regarding use of Smart Meters for LT OA consumers
   In regulation 7, sub-regulation (1), clause (a), under Table – 1

   The open access energy auditing is a complex process, which is also reflected through the requirement of SEMs for HT open access as per CEA regulations 2006. Introduction of open access for LT Consumers would warrant for more detailed discussion before introduction of a relevant regulation. Details of open access for LT consumer need to be carefully described, as the OA consumer can be a prosumer and a consumer at the same time. Also, the OA can be for only a part of contracted demand and power can be sold to multiple generators and purchase from multiple sources which makes energy accounting challenging. It is not clear if a 'direct connected smart meter' can provide the necessary facilities to perform the function of a special energy meter as required for HT OA

consumers. The definition of direct connection for LT consumers has not been included as part of the regulations. This should be clarified and it should be ensured that meters for all open access HT or LT should be SEMs.

4. Regarding meters of distribution system
   In regulation 7, sub-regulation (3), clause (iii)

   Last few years have seen notable improvements in AMR and MRI based feeder metering. This metering infrastructure has provided for near Realtime monitoring of MW load on feeders, supply interruptions and voltage levels. In order to achieve thorough communication and efficient energy auditing of feeders and distribution transformers the move to AMI based system will be necessary. An AMI system can also record data on outages, events and load beyond energy consumption in comparison to AMR. It is suggested that the proviso in the proposed regulation be amended as follows:

   Provided that all feeders and distribution transformers shall be provided with meters having AMI facility by June, 2023.
   Provided that AMR metering be adopted only in remote areas where AMI is not technically feasible, subject to regulatory approval.

   In addition, CEA should monitor the progress of feeder and DT metering on a quarterly basis to meet the set target by date.
   The suggested amendment to report energy auditing data for all feeders and distribution transformers is appreciated. However, the exact formats which need to be reported as per the Central Electricity Authority (Furnishing of Statistics, Returns & Information) Regulations, 2007 is not specified. Many of these formats do not capture supply quality and energy audits directly. Thus, a few data reporting formats that can be included as a part of this process are provided in the annexure 1.

Annexure 1

Suggested data reporting formats

1. Estimation of unmetered demand based on feeder energy input and sales data

Particulars	Units/ Specification	Feeder 1	Feeder 2	Feeder 3	Feeder 4	Feeder 5
Circle						
Division						
11 kV Feeder Name						
Feeder Meter Reading (Manual/ Automatic)						
Input energy	MU					
Normative assumption for losses, if any	%					
Energy losses at the feeder-level	MU					
Sales	MU					
Metered	MU					
Unmetered	MU					
Number of consumers	MU					
Metered	MU					
Unmetered	MU					

2. Division-wise summary of feeder-level audits

Name of Division 1						
Particulars	**Number of consumers**	**Connected Load**	**Metered sales**	**Unmetered sales**	**Revenue billed**	**Revenue collected**
	No.	kW	MU	MU	Rs. Cr	Rs. Cr
Consumer category 1						
Consumer category 2						
Consumer category 3						
Total						
Distribution losses (%)						
Target AT&C losses (%)						
AT&C losses (%)						
Name of Division 2						
Particulars	**Number of consumers**	**Connected Load**	**Metered sales**	**Unmetered sales**	**Revenue billed**	**Revenue collected**
	No.	kW	MU	MU	Rs. Cr	Rs. Cr
Consumer category 1						
Consumer category 2						
Consumer category 3						
Total						
Distribution losses (%)						
Target AT&C losses (%)						
AT&C losses (%)						

3. DT level reliability and quality of supply reporting for NPP

Division name	Number of DT's	Number of DT's reported failure	% of DT failure rectified within 6 hours	% of DT failure rectified within 12 hours	% of DT failure rectified within 24 hours	% of DT failure rectified more than 24 hours