

KERALA STATE ELECTRICITY REGULATORY COMMISSION
THIRUVANANTHAPURAM

Present: Shri. R. Preman Dinaraj
Adv. A.J. Wilson

OP.No. 43/2020

In the matter of: Approval of refund of excess revenue collected from consumers on account of metering errors for the period from 2007-08 to 2013-14.

Petitioners : Cochin Special Economic Zone Authority (CSEZA)

Respondents : (List attached as Annexure)

Date of Hearing: 21-12-2020

Order dated 03.03.2021.

Background

1. M/s. Cochin Special Economic Zone Authority (*hereinafter referred to as CSEZA or the petitioner*) filed the instant petition for the approval of refund of excess amount collected from the consumers due to metering errors during the period from 2007-08 to 2013-14. The Commission admitted the petition as OP 43/2020 and issued notices to the parties. The Commission also issued directions to the petitioner to give publicity regarding the conduct of public hearing among all consumers of the CSEZA on the petition.
2. In the petition, the petitioner stated that the petition was filed in line with the directions of the Commission. The Commission had issued directions vide order dated 25.04.2012 to conduct an energy audit while approving ARR and ERC for 2012-13 as abnormalities were noticed in distribution loss when compared with the industry standards (i.e., energy sales higher than energy input/purchase) during the period from 2007-08 to 2013-14. Accordingly, the petitioner got conducted an energy audit with the help of Kerala State Productivity Council.
3. In the energy audit report, the Commission noticed serious accuracy errors in the metering system as the Energy Audit Report showed that in the consumer meters especially at the HT level, the error percentage ranged from -2.82% to +8.47% with an average of +2.34%. Accordingly, the Commission issued directions vide its Order dated 15.05.2013 to take immediate action by the licensee for the calibration of meters/CT/PT to rectify the errors and to

ensure that the consumer meters are in line with the standards as per Central Electricity Authority (Installation and. Operation of Meters) Regulations, 2006.

4. Further, as per Order dated 30.04.2014, the Commission directed the licensee to keep the excess revenue, if any, collected through the discrepancy in metering, in a separate fund and refund/adjustment, if any, shall be made as per the Orders of the Commission. The relevant portion of the Order dated 15.05.2013 and 30.04.2014 is extracted below

Order dated 15.05.2013

*10. **Distribution Loss and Energy requirement:** The energy loss projected by the Licensee is around 1.96% for 2013-14. The distribution system has underground cabling and pre-paid meters of 0.5 accuracy class. However, it has been noticed that the loss levels in the system has been negative as the sales are higher than energy input as shown below:*

Distribution Loss (Actual, Approved and Projected)

Particulars	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
	Actual	Actual	Actual	Actual	Actual	Actual	Approved	Projected
Energy sales (MU)	33.23	44.12	43.32	44.24	56.10	57.21	60.00	60.00
Energy Requirements (MU)	33.34	43.53	42.00	43.31	54.88	55.92	60.42	61.20
Distribution losses (%)	0.33%	-1.36%	-3.14%	-2.15%	-2.22%	-2.31%	0.70%	1.96%

11. In the previous year, the Commission has directed the Licensee to conduct a energy audit to find out the exact reason for the such peculiar phenomenon. The Licensee has undertaken an energy audit with the help of Kerala State Productivity Council and reported that the study could not reveal any substantial reasons. However, report indicates that there is no error in the reading at the KSEB input level. Whereas the consumer meters especially at the HT level, the error percentage ranges from -2.82% to +8.47% with an positive average of +2.34%. Hence, the details in the report clearly shows that the percentages of error in the meters of major consumers are on the positive side. Hence, the Licensee has to take immediate steps for calibration of meters/CT/PT to rectify the errors and ensure that the consumer meters are in line with the Central Electricity Authority (Installation and. Operation of Meters) Regulations, 2006. It is also directed that the Licensee may take necessary action for investigation of other reasons if any on the discrepancy of metering data and to take corrective actions as required. The compliance has to be reported within three months.

Order dated 30.04.2014

*7. **Distribution Loss and Energy Requirement:** The energy loss projected by the licensee for 2014-15 is 1%. However, it has been*

noticed that the loss levels in the system has been negative as the sales are higher than energy input as shown below:

Distribution Loss over the years

Particulars	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
	Actual	Actual	Actual	Actual	Actual	Actual	Approved
Energy sales (MU)	33.23	44.12	43.32	44.24	56.10	57.21	60.00
Energy Requirements (MU)	33.34	43.53	42.00	43.31	54.88	55.92	60.42
Distribution losses (%)	0.33%	-1.36%	-3.14%	-2.15%	-2.22%	-2.31%	0.70%

8. The Commission has directed the licensee to conduct investigation on the negative losses and the licensee has conducted an energy audit study. A proposal for calibration of meters has been submitted and the same has been approved. Though the licensee has committed to complete the calibration of meters in three months, so far the same has not been completed. After the hearing, vide letter dated 28-3-2014, the licensee has reported that work on calibration and testing of metering system will be completed by October 2014. Considering the undertaking given by the licensee, the Commission hereby directs that the licensee shall complete the testing and calibration of metering system by October, 2014, no further extension shall be allowed for the work.

9. Though in actual terms, the loss levels in the system is negative, the Commission is inclined to provide for a reasonable level of technical losses for the licensee. In the petition, the licensee claims that distribution loss will be about 1%. Accordingly, the Commission allows 1% distribution loss for the year 2014-15 as shown below:

Distribution loss approved for 2014-15

	Projected	Approved
Energy Sales (MU)	55.22	55.22
Distribution loss (%)	1.00%	1.00%
Energy Purchase requirement (MU)	55.77	55.77

10. Fixing distribution loss at normative level may entail in some excess revenue to the licensee due to metering discrepancies. **Hence it is directed that, the excess revenue if any generated through the discrepancy in metering data, may be kept as a separate fund and refund/adjustment if any required shall be made as per the orders of the Commission in this regard.**

- Subsequently, the licensee tested all the meters including CT/PT as per the norms of CEA and replaced the necessary CT/PT/meters based on the test reports.
- Taking cue from the above Orders of the Commission, the *CEPZ industries Association (CEPZIA)* made representations before the Commission for refund of excess collected electricity charges. The Commission sought comments on the matter vide letter dated 09.04.2019 and in the reply dated 06.05.2019, the petitioner had estimated the excess revenue collected as Rs.

307.11 lakhs based on the approved energy loss for the respective year and applicable energy charge of HT consumers since sales to HT category is about 85% of the total sales. In the said letter, the petitioner also stated that the energy overbilled is due to the metering errors which cannot be identified/attributed to any particular consumer and hence it is not practical to refund the excess amount collected to the consumers arbitrarily since some consumers have exited the zone and similarly new consumers have joined the zone. The licensee further submitted that, as directed by the Commission, the excess amount collected is being kept in the Power Distribution Account of CSEZA which may be utilised as per the directions of the Commission for the common benefit of consumers.

7. Subsequently, on repeated requests of the CEPZIA for refund of excess amount collected and also keeping in view the direction of the Commission in Order dated 30.04.2014, the licensee filed the instant petition for the approval of the Commission, based on the reworked refund estimates as Rs.3,47,00,212/- as the excess revenue collected due to metering errors for the period from 2007-08 to 2013-14.

Hearing on the petition

8. The Petition was heard by the Commission on 21.12.2020 in a public hearing held at the Conference Hall, CSEZA Ernakulam. In the hearing, the petitioner stated that as per the directions of the Commission, energy audit was conducted in the year 2011. However, the report did not provide a comprehensive conclusion since only samples of 20HT consumers were taken. Further, CSEZA as per the directions of the Commission, conducted detailed testing and calibration of CTs/PTs/and meters and replaced defective CTs/PTs of consumers. No meters were replaced as the errors in meters were within the limits. In the Order dated 15-5-2013 and 30-4-2014, the Commission directed to compute the excess revenue collected by CSEZA and to keep the amount in a separate Fund.
9. During the hearing the petitioner stated that from the present records it is not possible to trace the metering errors of the consumers and to arrive at the exact excess amount due to each consumer. Hence a methodology was employed for arriving at the excess amount collected due to metering errors on a pro-rata basis. According to the petitioner the total excess amount collected is arrived at based on the total excess sales and energy input during 2007-08 to 2013-14. and the amount thus arrived at can be refunded to the all the individual consumers on pro-rata basis based on the energy billed during the period. The methodology followed by the petitioner is as given below:

1. Monthly power bills of each of the consumers within CSEZA during the period from 2007-08 to 2013-14 were physically verified and the consumption in kWh for each unit and tariff rate applicable for the said period was picked from the bills and entered.
2. The total energy in kWh purchased from KSEB Ltd's bill for CSEZA was allocated to each consumer for each month on the basis of actual energy sales to each consumer as 1 above.
3. From this prorated energy input arrived at as #2 above, distribution loss as approved by the Commission for the relevant financial year was applied and revised notional energy sale in kWh, which should have been billed to the to the consumers was arrived at. The distribution loss approved by the Commission is as shown below:

Year	Energy purchased from KSEB (MU)	Energy sales (MU)	Distribution loss (%)	KSERC Approved loss (%)
2006-07	33.34	33.23	0.33	0.33
2007-08	43.53	44.12	-1.30	0.39
2008-09	42.00	43.32	-3.14	0.74
2009-10	43.31	44.24	-2.15	0.71
2010-11	54.88	56.10	-2.22	1.00
2011-12	55.92	57.21	-2.31	0.70
2012-13	51.81	53.20	-2.68	0.70
2013-14	53.35	53.36	-0.02	1.00

4. The difference between the consumer wise billing in kWh as recorded in #1 and the revised notional energy sales which should have been billed in kWh as arrived at in #3 above, was calculated to find the consumer wise excess energy billed in kWh.
 5. The excess energy billed in kWh as in #4 above was multiplied by prevailing tariff rate per kWh as per the bills raised in the respective month, to arrive at the excess amount billed to the consumers.
 6. The total excess amount so arrived at for all consumers works out to be Rs.3.47 crore for the period from 2007-08 to 2013-14.
 7. The petitioner, requested to refund the amount so arrived at, to each of the consumers.
10. During the hearing, the representatives of CEPZIA agreed to the methodology proposed by the petitioner. However, they pointed out that the approved distribution loss considered during 2006-07 and 2007-08 is very low when compared to the loss of the subsequent years. The Commission after hearing the parties directed the petitioner to submit the copies of test reports of the Meters checked for taking an appropriate decision in the matter. Accordingly, the petitioner submitted the copies of reports of testing carried out in the metering system of the consumers during 2014.

Analysis and decision of the Commission

11. The Commission has analysed in detail the petition and the methodology for arriving at the excess amount billed due to the metering errors. In the absence of proper records, the petitioner licensee has adopted a viable method to arrive at the excess amount collected from the consumers from 2007-08 to 2013-14 due to errors in the metering system of the consumers. According to the estimate of the licensee, the excess amount collected during 2007-08 to 2013-14 amounted to Rs.3.47 crore from 111 to 137 consumers who existed during said period.
12. It can be seen that from 2007-08 to 2013-14, the distribution loss in the system was positive (sales higher than input) which ranged from (-)0.2 to (-)3.14%. This amount of distribution loss was noticed during the approval of ARR&ERC / true up process and these might have occurred due to a combination of the following factors:
 - a. Errors in the Metering system of KSEB Ltd (energy input).
 - b. Presumptive loss % for the licensee.
 - c. Accounting system errors.
 - d. Error in the Energy metres of the consumers due to faulty CTs/PTs and meters.
 - e. Discrepancy in accounting of loads due to wrong multiplication factor, connection/polarity errors, open circuits, blown fuses in the metering system, etc.
13. Out of the above, KSEB Ltd clarified in the ARR&ERC hearings of the licensee then, that there were no errors in their metering system. Thus, the possibility of inaccuracy in the energy input can be ruled out. Hence the possibility hinges on the metering system errors or accounting errors as pointed out in item (b) to (e). The test reports clearly indicated that there were errors in consumers metering system especially in CTs.
14. The Commission has also analysed the test reports submitted by the petitioner. These Test Reports consist of Test Certificates by a Chartered Engineer on the accuracy tests conducted on the Energy Metering System which consists of Current Transformers (CTs), Potential Transformers (PTs) and the Energy Metres (EMs) of 101 consumers of the licensee (HT consumers 23 nos, Deemed HT 4 nos and LT consumers (CT connected) 74 nos). The test reports reveal that :

- a. *It is based on the defined methodology as per the standards, with errors in CTs/PTs/meters based on specified loading current.*
- b. *The error which exceeds the tolerance limit is mainly in the CTs and in the CT:PT ratio.*
- c. *In many cases, only one CT exceeds the limit.*
- d. *The error varies with the loading current.*
- e. *There are positive and negative errors and % of error varies with each unit.*
- f. *Some consumers have positive errors and some have negative error*
- g. *The errors in the Energy metres are marginal and are within the tolerance limit.*
- h. *The test reports are not quantifying the actual error occurred in the metering system of individual consumer*

15. The licensee has reported that based on the test reports, CTs of 73 consumers were replaced. Based on the test results, it can also be inferred that even those consumers whose CT/PTs have been replaced, might not have excess readings, since both positive and negative errors are reported in the testing.

16. In this regard, it is important to analyse the legal provisions regarding metering errors in the consumer meters. Kerala Electricity Supply Code 2014 (*hereinafter referred to as Supply Code*) provides for the regulation of metering errors as extracted below;

113. Testing of meter- (1) *It shall be the responsibility of the licensee to satisfy itself regarding the accuracy of the meter before it is installed and the licensee shall test them or get them tested in an accredited laboratory or in an approved laboratory.*

(2) The licensee shall also conduct periodical inspection or testing or both and calibration of the meters, as specified in the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, as amended from time to time.

(3) *The periodical testing of consumer meters shall normally be done at site.*

(4) *The licensee may, instead of testing the meter at site, remove the meter to be tested, replace the same with a correct meter and test the removed meter in an accredited laboratory or in an approved laboratory.*

(5) *When the consumer opts to purchase the meter, the licensee shall receive it and test the same in an accredited laboratory or in an approved laboratory and install it as per the following time schedule:-*

LT meters within a maximum of fifteen days

HT or EHT meters within a maximum of twenty days

(6) *The licensee shall conduct periodical inspection or testing or both of the meters as per the following schedule:-*

Single phase meters once in every five years

LT 3-phase meters once in every three years
HT or EHT meters including maximum demand indicator (MDI) once in every year

(7) Wherever applicable, Current Transformer (CT) and Potential Transformer (PT) and the wiring connections shall also be tested along with meters.

.....
.....

115. Procedure for testing of meter- (1) The meter shall normally be tested in the laboratory of the licensee, approved by the Commission.

(2) In case the licensee does not have a testing facility approved by the Commission, or if so desired by the consumer, the meter shall be tested at any other laboratory accredited by the National Accreditation Board for Testing and Calibration Laboratories (NABL).

(3) The list of the accredited laboratories and approved laboratories for testing of meters shall be made available on the website of the licensee.

(4) In the case of testing on the request of the consumer, he shall have to pay the testing fee as per the Schedule of Miscellaneous Charges given in schedule 1 of the Code:

Provided that if the meter is found to be recording incorrectly or defective or damaged due to technical reasons such as voltage fluctuation or transients, attributable to the licensee, the testing fee shall be refunded to the consumer by the licensee by adjustment in the subsequent bill.

(5) Before testing a meter of the consumer, the licensee shall give an advance notice of three days, intimating the date, time and place of testing so that the consumer or his authorised representative can, at his option, be present at the testing.

(6) The testing shall be done within a maximum period of thirty days from the receipt of the application.

(7) The consumer or his authorised representative and the representative of the licensee present during testing shall affix their signature on the test report issued by the authorised officer of the laboratory as a token of having witnessed the testing:

Provided that the licensee and the consumer shall be eligible to get a copy of the test report which shall be despatched to them within two working days of the date of testing, if not delivered in person at the time of affixing their signature.

(8) If a consumer disputes the result of testing at the laboratory of the licensee, the meter shall be got tested at a laboratory selected by the consumer from among the laboratories accredited by the National Accreditation Board for Testing and Calibration Laboratories (NABL).

(9) In case the meter is found to be faulty, revision of bill on the basis of the test report shall be done for a maximum period of six months or from the date of last testing, whichever is shorter and the excess or deficit charges on account of such revision shall be adjusted in the two subsequent bills.

(Emphasis extra)

17. Accordingly, as per Regulation 113(1), it is the licensee's responsibility to satisfy itself regarding the accuracy of the meter. As per Regulation 113(2) the

licensee shall conduct periodical inspection or testing or both and calibration of meters at site. As per Regulation 115(9), *in case meter is found to be faulty revision of bill on the basis of the test report shall be done for a maximum period of 6 months or from the date of last testing whichever is shorter and the excess or deficit charges on account of such revision shall be adjusted in two subsequent bills.* The procedure mentioned in Regulation 115 is to be followed if the consumer also opt for testing of meters, in case of suspected errors in the metering system. Thus as per the provisions of the Supply Code, 2014, bills are to be revised for a maximum period of 6 months only.

18. The Commission has analysed the methodology adopted in estimating the excess amount collected due to the metering errors. It is observed that the excess amount collected was worked out by considering the energy billed during the period as the base. The rationale of this method was not explained by the licensee. Test reports also revealed that the metering system of all the consumers were not in error and even for those having errors, they contained positive errors (resulting in higher meter reading) and negative errors (resulting in lower meter reading). The license has replaced only 73 CTs after testing as communicated to the Commission vide letter dated 18-11-2014, which clearly establishes that there were errors in some of the consumers' metering system and not all consumers were excess billed since the metering system of all consumers were not found to be in error.
19. The Petitioner proposed that the excess amount collected is to be refunded among all the consumers on a *pro rata* basis. As mentioned above, since all the consumers' metering systems were not in error, prorating of refund may amount to giving benefit to some consumers who may not have suffered any losses. There is also a possibility for future disputes from consumers whose metering systems have been replaced after testing, since they had suffered higher loss in comparison with the others. Hence, the method proposed by the petitioner is not without its pitfalls and may result in giving undue benefit to some consumers who may not have suffered any loss due to the metering errors.
20. As far as the legal provisions are concerned, in case of metering errors, the licensee may *suo motu* initiate action. If the consumer suspects the errors in the metering system, as per the provisions of the Supply Code, the consumers may take up the matter with the licensee and if it is established that there is an error, adjustment in the bills can be made for a maximum of 6 months. In the present case, there is no report that consumer has complained with the licensee regarding any metering errors. The licensee has also not *suo motu* carried out checking of metering system as per the provisions of law. The error became evident, during the approval of the

ARR&ERC of the licensee. Hence, the Commission is of the view that all consumers do not have the right to demand refund of the excess billed amount, since only some of the consumers have been overbilled and suffered consequent losses. The Commission also notes that the licensee *suo motu* did not initiate any action to rectify the errors. ***Considering these factors in detail, the Commission has taken the considered view that the refund of excess money collected, to the deserving consumers is necessary. Accordingly, the licensees' proposal for refund to all consumers on a pro-rata basis is not agreed to.***

21. The licensee has proposed to refund the amount for a period from 2007-08 to 2013-14 i.e., for a period of 7 years. As per the provisions of the Supply Code refund of the excess amount due to metering errors is limited to past six months only. Since, there is convincing evidence that the metering system were in error from 2007-08 onwards, it is just and reasonable to conclude that some consumers were over charged since then, and they deserve refund of the excess billed amount. Since the present provisions of the Supply Code provides for refund of six months only relaxation in the existing provisions is required to allow refund for the said period. Regulation 179(1) of the Supply Code allows the Commission to relax any of the provisions of the Code. The relevant provision is quoted below:

“179. Power of relaxation and power to remove difficulties.- (1)The Commission may, in public interest and for reasons to be recorded in writing, relax any of the provisions of this Code.”

22. Thus, the existing provisions in the Supply Code 2014 empowers the Commission to relax the provisions of the Code in the appropriate cases in public interest. The Commission has therefore taken a considered decision that in the interest of justice and to ensure fairness it is necessary to relax Regulation 115(9) of the Supply Code and orders accordingly.
23. Further, the Commission also hereby orders that the present proposal of allowing refund based on the approved losses of the licensee shall not create an undesirable precedent, circumventing the legal provisions and the consumers cannot claim refund of the excess energy based on the systemic errors except in such exceptional circumstances. As per the present Regulations, the same has to be claimed individually based on the errors established in their metering system after following a due procedure.
24. Thus, while deciding on the refund of excess billed amount, it has to be ensured that :

- (a) the refund of the excess amount billed is to be limited to those consumers who have actually suffered a loss due to the positive errors in the metering system.
- (b) the refund of excess amount for the extended period (2007 to 2013) required relaxing the provisions in the Supply Code regarding the procedure and time limit for settling the excess metering cases
- (c) Such relaxation in the provisions of the Supply Code shall not become a precedence in any or similar cases while deciding case of excess metering in future

25. The Commission has examined the details including the Test Reports furnished by the licensee. From the available records it is difficult to establish the percentage of error in the metering system of each consumer. However, the Test Reports provide an indication of the presence of errors in the CTs/PTs. In the absence of other details, the Commission is of the view that consumers having positive errors beyond the limit (ie., error resulting in higher meter readings) based on the Test Reports be made eligible for the refund. Hence, the licensee shall appropriately identify those consumers who had positive errors beyond tolerance limit as per the Test Report since they have suffered loss due to excess billing consequent to the errors in the metering system. **The refund may be allowed to such consumers as a special case.**

26. Regarding refund amount, as pointed out above, since there is difficulty to estimate the percentage of error attributable to the metering system of the consumers, it is difficult to establish the exact refund amount attributable to each eligible consumer. In the absence of any other reasonable criteria, the Commission is of the view that the refund amount to eligible consumers shall be the same as the licensee has arrived at in the petition.

27. The balance amount from the estimated total refund of Rs.3.47 crore by the licensee shall be kept separately and used for the benefit of all consumers as per the directions of the Commission.

Orders of the Commission

28. Based on the above, the Commission has arrived at the following conclusions and accordingly Orders as follows:

- a) The licensee has been able to establish that there is a case for refund of the excess amount billed from the consumers during the period 2007-08 to 2013-14. This was due to errors in the metering system of many

consumers, as established by the meter Test Reports and consequent replacement of meters.

- b) The proposal of the licensee to refund the excess amount of Rs.3.47 crore arrived at on a pro rata basis is not agreed to since the metering system of all consumers were not in error. The licensee shall appropriately identify the consumers who had positive errors beyond limit in the metering system based on the Test Reports for the refund.
- c) The refund amount for such consumers shall be the same amount as arrived at by the licensee for the period from 2007-08 to 2013-14 as given in the petition.
- d) For enabling the refund for the said period, the Commission in exercise of the powers conferred under Regulation 179(1) of the Supply Code relaxes the provisions of the Supply Code 2014 in public interest purely as a special case. This relaxation shall not be considered as a precedent in any or similar matter in future.
- e) The balance amount after allowing the refund from the total refund amount estimated by the licensee ie., Rs.3.47 crore, shall be kept in a separate account by the licensee. Since this balance amount can be attributable to factors other than the metering errors also, it shall be utilised for the common benefit of the licensees' consumers with the approval of the Commission.

29. Petition disposed of, ordered accordingly

Sd/-
A. J. Wilson
Member (Law)

Sd/-
Preman Dinaraj
Chairman

Approved for issue

Sd/-
Secretary

Annexure

List of persons attended the public hearing held on 21-12-2020

1. Vineesh Thomas, Property Manager, Technopolis	8. T.R Palaniyappan, TATA ceramics Ltd
2. K.K. Pillai, NIKAM, President, CEPZIA	9. Angel Teresa, TATA ceramics Ltd
3. Ani Kumar,	10. Anil Kumar. T.T L.J International
4. Prem Kumar.S. WAB Baird	11. Sathyanarayanan M.
5. Ratheesh Kumar, A WAPCOS, Ltd	12. Aldrin Varghese, Vishnu Transcription services
6. Krishna Varma, Consultant CSEZA	13. Rajesh J Kuruvila,
7. K.C Seetharaman, CA, CSEZA	