

**BEFORE THE FORUM**  
**FOR REDRESSAL OF CONSUMER GRIEVANCES**  
**IN SOUTHERN POWER DISTRIBUTION COMPANY OF A.P LIMITED TIRUPATI**

**On this the 25<sup>th</sup> day of November' 2022**  
**C.G.No.31/2022-23/Tirupati Circle**

*Present*

**Sri. K. Ramamohan Rao**

**Chairperson(I/c) &  
Member (Finance)**

**Sri. S.L. Anjani Kumar**

**Member (Technical)**

**Smt. G. Eswaramma**

**Independent Member**

*Between*

M.Yella Reddy,  
C/o. M/s. M.S. Stone Crusher,  
Durgasamudram (V),  
Ramapuram(M)  
Chittoor Dt.

Complainant

**AND**

1. Deputy Executive Engineer/O/Tirupati CCO
2. Executive Engineer/O/Tirupati Town
3. Executive Engineer/M&P/Tirupati-1
4. Senior Accounts Officer/O/Tirupati
5. Superintending Engineer/O/Tirupati

Respondents

\*\*\*\*\*

**ORDER**

1. The case of the Complainant is that he is the Proprietor of 'M/s. M.S. Stone Crushers' and having service HT SC.No. TPT 2389. The department issued huge amount of CC bill for the months of May'2022 and June'2022 for 92,000 units and 93,000 units respectively which is abnormal, received only due to unblocking of leading KVARh by M&P wing without intimating to him. Hence approached the forum to resolve his grievance
2. The case was registered as C.G.No.31/2022-23/Tirupati Circle.
3. The complainant also submitted an application to give interim directions for not to disconnect the said service towards non-payment of balance CC bill amount for the months of May'2022 and June'2022 during pendency of the case before this forum.
4. The complainant stated that he paid part amount of CC bills for the months of May'2022 and June'2022 i.e., Rs.4,50,000/- and Rs.4,50,000/-respectively.

**DESPATCHED**  
DATE 25/11



5. On perusal of HT Ledger, it is noticed that the said HT service released in the name of 'M/s. M.S. Stone Crusher' and the complainant has paid Rs.4,90,810/- for the month of May'2022 and Rs.4,34,800/- for the month of June'2022 towards CC bills. The allegation of the complainant is that he received bill abnormally. There is an outstanding balance amount of Rs.8,91,443.95 payable by the complainant as on 6/2022.
6. Interim directions were issued vide IA No.5/2022-23/Tirupati Circle dt:3.8.2022 and directed the Respondents not to disconnect the service during pendency of the complaint before this forum towards non-payment of balance disputed CC bill due amount for the months of May'2022 & June'2022 of Rs. 8,91,443.95 . The Complainant also advised to pay regular CC bills.
7. Respondent No.1 submitted written submission stating that HT.SC.No.TPT 2389 M/s. M.S. Stone Crushers received abnormal bill for the months of May'2022 and June'2022 pertains to June and July demand. The meter readings and recorded consumption from May'2022 to September' 2022 is as follows:

S. No	Date	KWH Reading	KWH Consumption	KVAH Reading	KWH Consumption	MD Recorded	Remarks	PF
1	01.05.2022	1204480	53238	1239914	54295	256.8	.....	0.98
2	06.05.2022	.....	.....	.....	.....	.....	TOD New Software uploaded	.....
3	01.06.2022	1245715	41235	1332003	92089	272.8	Abnormal KVAH Recorded	0.45
4	01.07.2022	1283601	37886	1425783	93780	310	Abnormal KVAH Recorded	0.4
5	01.08.2022	1324920	41319	1470326	44543	337	.....	0.93
6	01.09.2022	1366471	41551	1515858	45532	296	.....	0.91

After uploading the new TOD software, the KVAH consumption abnormally increased and the MD also doubled when compared with previous months.

Some investigation has been made in the presence of consumer and Dy.EE/OSD-III/Tirupati i.e., after opening of the LT section fuses, the meter

DESPATCHED  
DATE



pulse is taking and the consumption is recording with no load, because of not connecting the capacitors.

8. EE/M&P-I/Tirupati has submitted written submission stating that, complaint was lodged against the said service regarding high consumption recorded due to uploading of new software (unblocking of leading Kvarh) during May'2022 and June'2022.

*As per Chapter- IX Para 398 in Tariff for Retail sale of Electricity during F.Y. 2019-20 at page No.247 of 375*

*“Unblocking of leading kVArh : For the purpose of billing, leading KVARh is blocked hitherto for all categories of consumers in LT except Domestic and Agriculture and for all categories of consumers in HT. As kVAh billing is taking care of the reactive power management by the consumers, the Commission has decided that the blocked leading kVArh recording in the meters provided for applicable consumers be unblocked. Therefore, the licensees are hereby directed to take note of this change and action shall be taken accordingly”.*

The department un-blocked leading kVArh and updated new software in the new meter provided, as per directions of Hon'ble APERC in *Chapter- IX Para 398 in Tariff for Retail sale of Electricity during F.Y. 2019-20.*

9. The SE/O/Tirupati has submitted the written submission stating that as per the HT readings taken by the Dy.EE/OSD-III/Tirupati the bill was generated for the months of May'2022 and June'2022 and no excess billing done beyond the recorded consumption to the said service .
10. Personal hearing was conducted through video conferencing @ 11.30 A.M on 11.10.2022, Dy.EE/OSD-III/Tirupati, EE/M&P/Tirupati, Dy.EE/M&P-II/Tirupati and complainant Mr.M.Yella Reddy present. Heard both sides.

Complainant stated that they received huge amount of CC bills for the months of May'22 and June'2022 due to unblocking of leading KVARh and updating of new software by the department. Hence requested to revise the bills for the disputed period. Now he installed automated capacitors.



Demand consumption particulars from Jan'2020 to Oct'2022 is as follows:-

S. NO	MONTH	LOAD	CAT	KWH CON	KVAH CON	MD	OB	DEMAND	DEBIT RJ	COLLECTION	REDIT RJ	CB	PF
1	Oct-22	330	3A	54964	59857	334	1340626	621029	0	492292.00	0	1469363	0.92
2	Sep-22	330	3A	41551	45532	296	1341834	492292	0	493500.00	0	1340626	0.91
3	Aug-22	330	3A	41319	44543	337.6	846782	495052	0	0.00	0	1341834	0.93
4	Jul-22	330	3A	37886	93780	310	891444	855338	0	900000.00	0	846782	0.40
5	Jun-22	330	3A	41235	92089	272.8	505170	821074	0	434800.00	0	891444	0.45
6	May-22	330	3A	53238	54295	256.8	490810	533700	0	490810.00	28530	505170	0.98
7	Apr-22	330	3A	55086	56185	260	471845	487385	0	468420.00	0	490810	0.98
8	Mar-22	330	3A	49957	52062	271.2	317635	470410	0	316200.00	0	471845	0.96
9	Feb-22	330	3A	27869	28205	245.2	327232	316403	0	326000.00	0	317635	0.99
10	Jan-22	330	3A	31680	32211	240.4	267574	341658	0	282000.00	0	327232	0.98
11	Dec-21	330	3A	25956	26333	240.8	358794	300780	0	392000.00	0	267574	0.99
12	Nov-21	330	3A	39624	39970	253.6	343068	393726	0	378000.00	0	358794	0.99
13	Oct-21	330	3A	37358	37619	228.4	369442.2	379302	0	367764.00	37912.29	343068	0.99
14	Sep-21	330	3A	30474	30823	232	290582.2	369460	0	290600.00	0	369442.2	0.99
15	Aug-21	330	3A	24061	24239	252.8	321283.2	288799	0	319500.00	0	290582.2	0.99
16	Jul-21	330	3A	28111	28379	252.8	320209.2	319074	0	318000.00	0	321283.2	0.99
17	Jun-21	330	3A	27646	27905	271.6	377957.2	319252	0	377000.00	0	320209.2	0.99
18	May-21	330	3A	37887	38202	282	356647.2	391240	0	348000.00	21930	377957.2	0.99
19	Apr-21	330	3A	33404	33617	272	415628.2	356870	0	415851.00	0	356647.2	0.99
20	Mar-21	330	3A	39109	39851	305.6	332671.2	413957	0	331000.00	0	415628.2	0.98
21	Feb-21	330	3A	29708	31006	263.6	395758.2	334913	0	398000.00	0	332671.2	0.96
22	Jan-21	330	3A	36133	37238	298.4	457742.2	394016	0	456000.00	0	395758.2	0.97
23	Dec-20	330	3A	37122	38565	344	460542.2	428106	27694	458600.00	0	457742.2	0.96
24	Nov-20	330	3A	35824	37053	312.4	491587.2	466955	0	498000.00	0	460542.2	0.97
25	Oct-20	230	3A	36960	38487	319.6	435180.4	488421	0	432014.16	0	491587.2	0.96
26	Sep-20	230	3A	32242	33779	301.2	274742.4	433438	0	273000.00	0	435180.4	0.95
27	Aug-20	230	3A	30434	37606	370.4	420371.4	542371	0	688000.00	0	274742.4	0.81
28	Jul-20	230	3A	20046	21860	368.4	555641.4	418730	0	554000.00	0	420371.4	0.92
29	Jun-20	230	3A	8996	9238	300	553614	302054	0	300026.60	0	555641.4	0.97
30	May-20	230	3A	11768	12394	278.6	596378	275807	0	298000.00	20571	553614	0.95
31	Apr-20	230	3A	35097	37041	322	451318	485060	0	340000.00	0	596378	0.95
32	Mar-20	230	3A	0	0	0	373994	447825	0	370501.00	0	451318	0.00
33	Feb-20	230	3HT- III A	24204	25354	296.8	275127	370582	0	271715.00	0	373994	0.95
34	Jan-20	230	3HT- III A	22691	23733	227.6	295444	271716	0	292033	0	275127	0.96



As seen from the above, the power factor maintained by the complainant was between 0.9 to 1.0 except for the month of Aug'2020 it was 0.81. Hence the complainant maintained PF to unity except for the months of June'2022(May'2022 billed in June'2022) and July'2022(June'2022 billed in July'2022) PF recorded 0.45 and 0.4 respectively.

As per the APERC order on tariff for retail supply, the HT consumers who are provided with metering capable of measuring active and reactive power, consumers shall maintain their power factor preferably in between 0.95 lag and 0.95 lead in the interest of the system security. The present complainant not maintained the power factor leading side less than 0.95 lead. If any consumer maintains the power factor less than 0.95 lead for a period of 2 consecutive months, it must be brought back in the range of (+) or (-) 0.95 within a period of 3 months failing which without prejudice to such other rights as having accrued to the licensee or any other right of the licensees the supply to the consumer may be discontinued.

As per para. 6.9 Chapter -X in Tariff for retail supply of Electricity during F.Y. 2022-23 issued by Hon'ble APERC, the consumer has to maintain power factor at their end preferably in between 0.95 lag and 0.95 lead in the interest of the system security. The consumers should not maintain the power factor leading side less than 0.95 lead.

Para 6.9 Chapter -X in Tariff for retail supply of Electricity for the F.Y. 2022-23 in page No.211 of 534 issued by Hon'ble APERC is as follows:-

**6.9 :- "Maintenance of power factor at consumer end**

***HT consumers, who are provided with metering capable of measuring active and reactive power under the orders of the Commission, shall maintain their power factor preferably in between 0.95 Lag and 0.95 Lead in the interest of the system security. The consumers should not maintain the power factor leading side less than 0.95 Lead. If any consumer maintains the power factor less than 0.95 Lead for a period of 2 consecutive months, it must be brought back in the range of  $\pm 0.95$  within a period of 3 months failing which without prejudice to such other rights as having accrued to the licensees or any other right of the licensees the supply to the consumer maybe discontinued. "***

11. The point for determination is whether there are any grounds to revise the CC bills for the months of May'2022& June'2022 for the HT SC No.2389 TPT?



As seen from the above table, it is observed that the power factor is maintained at Unity (1) except for the months of June'2022 and July'2022 it is very low in those months thus causing recording of more KVAH units.

*As per Chapter- IX Para 398 in Tariff for Retail Sale of Electricity during F.Y. 2019-20*

***“Unblocking of leading kVARh : For the purpose of billing, leading KVARh is blocked hitherto for all categories of consumers in LT except Domestic and Agriculture and for all categories of consumers in HT. As kVAh billing is taking care of the reactive power management by the consumers, the Commission has decided that the blocked leading kVARh recording in the meters provided for applicable consumers be unblocked. Therefore, the licensees are hereby directed to take note of this change and action shall be taken accordingly”.***

But, it is observed that, the department programmed for updating of the meter software as per instructions of higher authorities vide Memo. No.CGM/P&MM/DEE-P1/D.No.506/2022, dated:13.04.2022, that all the existing meters other than domestic and agriculture and all HT service meters, the KVARh (lead) parameters blocked to be unblocked.

It is the responsibility of the consumer as per Clause 12.2 of GTCS to connect rated capacitors for different load conditions which is as follows:

**12.2 Maintenance of Power factor at consumer end:**

***“HT consumers, who are provided with metering capable of measuring active and reactive power under the orders of the Commission, shall maintain their power factor preferably in between 0.95 lag and 0.95 lead in the interest of the system security and shall comply with conditions stipulated in the relevant orders issued from time to time”.***

**19.3 of GTCS :- Knowledge of Facts and Rules:-**

***The consumer shall be deemed to have full knowledge of the provisions of the Electricity Act, 2003 the A.P. Electricity Reform Act, 1998, and all regulations and notifications made there under, as also all laws relating to the supply of electricity.***

As per the above clause the consumer shall be deemed to have full knowledge of the provisions of Acts relating to the supply of electricity.

As per Clause 5.7.1.1 of GTCS ***“for inspections and testing of consumer installation the duty of the LT consumer clearly stated that the consumer shall arrange for a***



***representative of the licensed electrical contractor technically qualified and employed by him''.***

In this case the complainant is a HT consumer. Being HT consumer, the complainant should have to put more efforts than LT consumers and have to arrange for a representative of the licensed electrical contractor technically qualified compulsorily for monitoring of the electrical equipment existing at their unit and also take necessary immediate action whenever such power factor problem arises/ any other failure/non-functioning of electrical equipment in their unit for un-interrupted supply and also should maintain power factor preferably in between 0.95 lag and 0.95 lead in the interest of the system security to record correct consumption by the meter.

***[https://www.mahadiscom.in/wp-content/uploads/2020/01/002\\_ANNEXURE-6\\_FAQs-REGARDING-kVAh-BILLING.pdf](https://www.mahadiscom.in/wp-content/uploads/2020/01/002_ANNEXURE-6_FAQs-REGARDING-kVAh-BILLING.pdf)***

**Why is kVAh billing necessary?** Both Active (kWh) and Reactive (kVArh) energies are consumed simultaneously. Reactive Energy (kVArh) occupies the capacity of electricity network and reduces the useful capacity of system for generation and distribution & hence its consumption also needs to be billed. kWh based billing is associated with PF incentive /penalty mechanism. Considering that the kVAh based billing has an inbuilt incentive /penalty mechanism and separate mechanism for the same is no more required; instead of billing two energies separately, billing of kVAh energy is preferred as a commercial inducement.

**When will kVAh billing be implemented?** As per MERC Order in Case No. 195 of 2017 dated September 12, 2018, The Commission intends to implement kVAh billing to all HT consumers and LT consumers having load above 20 kW from 1st April, 2020.

How kVAh billing is different from existing billing & what are its benefits? kVAh billing has an inherent mechanism to incentivize or penalize consumers according to their power factor. The Prime Objective of the kVAh based billing is to encourage the consumers to maintain near unity Power factor to achieve loss reduction, improve system stability, power quality and improve voltage profile. At the national level, emphasis is being given to Energy Conservation, Energy Efficiency and Demand Side Management (DSM) to optimize the energy usage. Through kVAh billing, the consumers will be encouraged to adopt energy efficiency programs and will be benefited by reduced electricity bills.



### **Explain more about reactive Power & its effects on system?**

In case of inductive loads like motors, electrical energy can't directly be converted into useful work (rotation of motor shaft in this particular case). This is because, to convert electrical energy into rotational energy, magnetic field has to be created in between the gaps of stator and rotor of Motor. Hence, some amount of energy has to be used in creating magnetic field. The portion of power that contributes in creating magnetic field is known as Reactive Power. Though reactive power is needed to run many electrical devices, it can cause harmful effects on your appliances and other motorized loads, as well as electrical infrastructure. Since the current flowing through your electrical system is higher than that necessary to do the required work, excess power dissipates in the form of heat as the reactive current flows through resistive components like wires, switches and transformers. How can reactive power be reduced or compensated? Improving Power Factor by installing capacitors of appropriate ratings [or Automatic Power Factor Corrector (APFC) Panels] you can locally compensate reactive power requirement, thereby reducing reactive power drawl from grid.

**Explain more about Power Factor (PF)?** Desired Power Factor is unity i.e. 1, and its range is Zero Lag – unity - Zero Lead. For purely capacitive loads PF is Zero Lead and for purely inductive loads PF is zero Lag. Unity Power Factor signifies that there is no reactive power exchange between consumer and grid. Power Factor is an indicator for efficiency of Energy Conversion. If PF is 0.85 it means that 15% of power is not resulting in actual work. If PF is 0.85 lagging it means that 15 % of power is used by inductive elements and If PF is 0.85 leading it means that 15 % excess reactive power is supplied by capacitive elements. In both the aforementioned cases 15 % of power is not resulting in to actual work. Both Leading and lagging power factor are equally harmful to the power system.

**How do I know my Power Factor?** For consumers having installed TOD, Tri-vector Meters, Meters, depending upon the nature of instantaneous load, instantaneous power factor is displayed on consumer's meter. Consumers can also opt to install PF meters at their LT panel to measure the PF. It is advisable to monitor PF of each individual circuit / machine / plant, as may be possible, in their

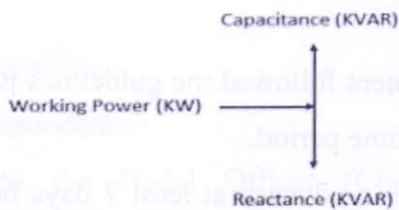


internal distribution network so that the “low PF section” can be easily identified and attended.

**What is Power Factor improvement?** Power factor improvement means minimizing drawl of reactive power from power system so as to make power factor unity. It is nothing but providing adequate compensation so that the reactive power requirement of the load is locally fulfilled instead of drawing it from the power system. This means determination of adequate size / rating of capacitors to be installed at each major inductive load is necessary.

**How can I improve my Power Factor?** If power factor is on the lagging side it can be improved by installing capacitors of appropriate ratings and if the power factor is on leading side it can be improved by installing reactors/ removing excess capacitors of appropriate ratings.

Forum of Regulators (FOR), has recommended kVAh billing. FOR in its report on “Metering Issues” published in August 2009 has stated that kVAh billing is the new trend in electricity billing, which is adopted worldwide.



### **NEED OF IMPROVING POWER FACTOR:**

- a) To avoid the penalty imposed by distribution utilities for poor power factors.
- b) Now utilities have been started the billing in KVAH instead of KWH, so improved power factor helps in reducing our electricity charges.
- c) Reducing demand
- d) Increased voltage level in electrical system due to which efficiency level of motor gets better as well as life span also gets increased.

When the system is loaded lightly, the voltage increases, increasing the magnetization current demand of the machine.



### Disadvantages of Low Power Factor

These are the main **disadvantages of Low Power Factor** in our electrical system.

- Large kVA rating and size of Electrical equipments
- Large conductor size and so higher cost of transmission line
- High Transmission loss hence poor efficiency
- Poor Voltage regulation
- Penalties imposed by power utility companies (DISCOM)
- The improved power factor will further reduce spending on power purchase, creating the opportunity to lower tariffs.

If power factor not maintained by the consumers, the DISCOMS will be penalized and it is burden on the department also. At the same time DISCOMS also levy capacitor surcharge to the consumers to overcome the problem. Hence it is the duty of the consumers to maintain the power factor to unity.

Consumers are aware of the said programming as Hon'ble APERC issued guidelines in **Chapter IX Para398 in page No. 247 of 375 in Tariff for Retail sale of Electricity during F.Y. 2019-20.**

This forum is of the opinion that the department followed the guidelines issued by Hon'ble APERC after completion of about 2 years time period.

The respondents are advised to issue notice in advance at least 7 days before updating the meter software if any to avoid such inconvenience to the consumers in future.

On perusal of HT Ledger, it is noticed that there is an outstanding balance amount of Rs.14, 69,362.95 payable by the complainant as on 10/2022.

The complainant is advised to pay outstanding arrears amount of CC bill against the said HT service.

There are no grounds to interfere with the revision of bill for the month of 5/2022 and 6/2022 for the said HT service. Hence complaint is liable to be dismissed.



Accordingly, the C.G.No.31/2022-23/Tirupati Circle is disposed off. The point answered accordingly.

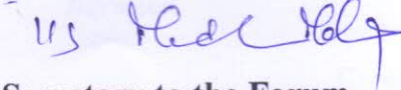
13. In the result the complaint is dismissed.

Sd/-  
Member (Technical)

Sd/-  
Independent Member

Sd/-  
Chairperson (I/c)

**Forwarded By Order**

  
Secretary to the Forum

**This order is passed on this, the day of 25<sup>th</sup> November'2022**

If aggrieved by this order, the Complainant may represent to the Vidyut Ombudsman, Andhra Pradesh, 3<sup>rd</sup> Floor, Sri Manjunatha Technical Services, Plot No:38, Adjacent to Kesineni Admin Office, Sri Ramachandra Nagar, Mahanadu Road, Vijayawada-520008, within 30 days from the date of receipt of this order.

To

The Complainant

The Respondents

Copy to the Nodal Officer (Chief General Manager (O&M)/Operation)/CGRF/APSPDCL/ Tirupati.

Copy Submitted to the Vidyut Ombudsman, Andhra Pradesh , 3<sup>rd</sup> Floor, Sri Manjunatha Technical Services, Plot No:38, Adjacent to Kesineni Admin Office, Sri Ramachandra Nagar, Mahanadu Road, Vijayawada-520008.

Copy Submitted to the Secretary, APERC,11-4-660, 4<sup>th</sup> Floor, Singareni Bhavan, Red Hills, Lakdikapool, Hyderabad- 500 004.