

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

On this the 25th day of November' 2022

C.G.No.34/2022-23/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

K.Punya Moorthy,
C/o. M/s.AGA Publications (Vaartha),
3rd Mile Stone,
Renigunta Road,
Tirupati.

Complainant

AND

1. Deputy Executive Engineer/O/Tirupati-II
2. Superintending Engineer/O/Tirupati
3. Senior Accounts Officer/O/Tirupati
4. Executive Engineer/M&P/Tirupati-I

Respondents

ORDER

1. The case of the Complainant is that he is the Branch Manager of M/s.AGA Publications(Vaartha) and they are having service vide HT SC.No. TPT 2525. For the past 4 years they are paying Rs.1,00,000/- as their monthly CC bill. All of a sudden the department issued CCbill for Rs.5,22,926/- for the month of June'2022 and Rs.3,06,639/-for the month of July'2022 respectively totaling to Rs.8,20,769/- without increase of production and consumption.

After seeing June month bill they were deeply shocked and immediately approached APSPDCL authorities. They informed them that due to installation of new software to their HT service huge amount of bill received by them. Without any prior intimation/notice regarding installation of new software to their HT service and without informing what steps they have to take after installation of new software.

o/c

After receiving June'2022 bill for Rs.5,22,926/-, they approached Dy.EE/Sub-Division-II/APSPDCL/Tirupati and given letter to them for rectification and expressed their helplessness.

On 18.06.2022 they met CGM and EE/O/APSPDCL who in turn directed Dy.EE for inspection of the premises and find out what happened.

On 20.06.2022, the Dy.EE visited their premises after taking meter reading, asked them to check the capacitors. As per his advice from 20.06.2022 they have taken care of capacitors and from that date meter reading drastically came down. Meanwhile they received CC bill for the month of July'2022 for an amount of Rs. 3,06,639/-.

He further submitted that APSPDCL authorities conducted meeting on 08.07.2022 at 11.00A.M in Circle Office, Tirupati regarding interruption of HT bill issues informing them what to do and what not to do. If this awareness could have been done at the time of installation of new software, they may not have received such huge bills.

After taking measures suggested by authorities, the recent bill received by them was only for Rs.1,15,366/-

Hence approached the forum to reduce the excess bill amount received by them for the months of June'2022 and July'2022.

2. The case was registered as C.G.No.34/2022-23/Tirupati Circle.
3. Respondent No.1 submitted written submission stating that HT. SC. No. TPT 2525M/s.AGA Publications (Vaartha)received abnormal bill for the month of June'2022 and July'2022 pertains to May and June demand.

The meter readings and recorded consumption furnished from April'2022 to August' 2022 is as follows:

Sl. No	Date	KWH Reading	Consumption	KVAH Reading	Consumption	MD Recorded	Remarks	PF
1	01.04.2022	165327	5814	187642	5668	56.3	.....	0.9
2	01.05.2022	171178	5851	193527	8558	50.05	.....	0.9
3	05.05.2022	.....	.....	.....	.....	.....	TOD New Software uploaded	.....
4	31.05.2022	177147	5969	255597	62070	97.4	Abnormal KVAH Recorded	0.7

5	30.06.2022	181696	4549	289096	33499	114.5	Abnormal KVAH Recorded	0.6
6	02.08.2022	185664	3968	295498	6402	65.2	Abnormal KVAH Recorded	0.6

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

He further submitted that some investigation has been made in the presence of consumer and Dy.EE/OSD-II/Tirupati i.e. after opening of the LT section fuses, the meter pulse is taking and the consumption is recording with no load, because of not connecting the capacitors.

- EE/M&P-I/Tirupati has submitted his 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 June'2022 and July'2022.

As per Chapter- IX Para 398 of page 247 in Tariff for Retail sale of Electricity during F.Y. 2019-20

Unblocking of leading kVArh : Para 398 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 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.*

- The SE/O/Tirupati has submitted the written submission stating that, as per the HT readings taken by the Dy.EE/OSD-II/Tirupati, the HT service bill was generated and no excess billing done beyond the recorded consumption to the said service, for the months of June'2022 & July'2022.

21	150	3A	128109	8102	8144	67	201923	111456	0	240449	9204.09	63725.91	0.99
20	150	3A	120007	7448	7483	66	193048	116650	0	107775	0	201923	1
19	150	3A	112559	7548	7580	58.6	188638	107775	0	103365	0	193048	1
18	150	3A	105011	7244	7339	68	178518	105365	0	95245	0	188638	0.99
17	150	3A	97767	5809	5887	60.8	169242	97245	0	87969	0	178518	0.99
16	150	3A	91958	6619	6711	69	79273	100913	0	0	10944	169242	0.99
15	150	3A	85339	6557	6591	59.6	175948	101539	0	198214	0	79273	0.99
14	150	3A	78782	5837	5891	59.7	176440	96675	0	97167	0	175948	0.99
13	150	3A	72945	6084	6156	62.3	173783	97167	0	94510	0	176440	0.99
12	150	3A	66861	5839	6012	73	77273	96510	0	0	0	173783	0.97
11	150	3A	61022	5091	5150	68.8	171575	96506	0	190808	0	77273	0.99
10	150	3A	55931	5651	5718	49.2	171975	96302	0	96702	0	171575	0.99
9	150	3A	50280	5105	5150	48.6	75273	96702	0	0	0	171975	0.99
8	150	3A	45175	4772	5032	56.7	75273	97203	0	97203	0	75273	0.95
7	150	3A	40403	4618	7777	89.2	185088	108407	0	218222	0	75273	0.59
6	150	3A	35785	5005	8185	79.7	187126	109815	0	111853	0	185088	0.61
5	150	3A	30780	4996	8452	87.3	176286	113863	0	0	103023	187126	0.59
4	150	3A	25784	4284	7677	66.8	185285	108023	0	112022	5000	176286	0.56
3	150	3A	21500	5070	8671	99.4	166284	112022	0	93021	0	185285	0.58
2	150	3A	16430	0	0	0	94246	95021	71263	94246	0	166284	
1	150	3HT-III A	11820	5119	6063	98.7	0	94246	0	0	0	94246	0.84
0	150	3HT-III A	6701	6618	7852	110.9	0	129865	0	129865	0	0	0.84

As seen from the above the power factor maintained by the complainant, it is observed that PF is lead during the period from Jan'2020 to Aug'2020. The complainant not maintained PF to unity. Again from July'2022 to Oct'2022 the PF is between 0.1 to 0.76. The disputed months are June'2022 and July'2022. After completion of 3 months period from the date of un-blocking of KVARh lead and also new software updation in the meter. The complainant not maintained PF to unity. 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 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 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 ± 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. ”

7. The point for determination is whether there are any grounds to revise the CC bills for the months of June'2022 & July'2022 for the HT SC No.TPT-2525?

As seen from the above, it is observed that the power factor is very low (Which is supposed to be maintained at unity (1) KWH/KVAH causing recording of more KVAH units.

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

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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 when ever 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.

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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.

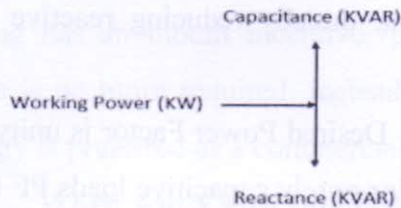
How do I know my Power Factor? For consumers having installed TOD, Tri-vector Meters, Meters, depending upon the nature of instantaneous load, instantaneous power factor is displayed on consumer's meter. Consumers can also opt to install PF meters at their LT panel to measure the PF. It is advisable 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.

<https://www.electrical-technology.com/2019/05/Causes-and-Disadvantages-of-Low-Power-Factor.html>

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 consumer the DISCOMS will be penalized and it is burden on the department also. At the same time DISCOMS will also levies capacitor surcharges to the consumer to overcome the problem. Hence it is the duty of the consumer to maintain the power factor to unity.

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. Consumers are aware of the said programming already Hon'ble APERC issued guidelines **as per Chapter IX Para398 in page No. 247 in Tariff for Retail sale of Electricity during F.Y. 2019-20.** The complainant is also not maintained PF to unity even after completion of about 4months period after replacement of new software in the meter and also after unblocking of lead kvarh in the meter.

Hence 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.34/2022-23/Tirupati Circle is disposed off. The point is answered accordingly.

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.

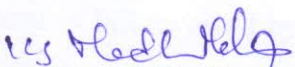
8. In the result the complaint is dismissed.

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 25th November'2022

If aggrieved by this order, the Complainant may represent to the Vidyut Ombudsman, Andhra Pradesh, 3rd 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 , 3rd 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, 4th Floor, Singareni Bhavan, Red Hills, Lakdikapool, Hyderabad- 500 004.