

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

**On this the 9<sup>th</sup> day of November' 2022**  
**C.G.No.22 /2022-23/ Nellore 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.Geetha  
C/o. M/s. Golden Scampi Feeds,  
G.N.T. Road,  
Peddapadugupadu,  
Kovur (M)  
Nellore Dt.

Complainant

*AND*

1.Executive Engineer/O/Kavali  
2.Executive Engineer/M&P/Nellore-II  
3. Senior Accounts Officer/O/Nellore

Respondents

\*\*\*\*\*

**ORDER**

1. The case of the complainant is that the department issued abnormal CC bill for Rs.3,22,176/- for the month of 06/2022 due to meter software updating and stated that the department issued notice on 19.05.2022 regarding change of meter software but on the same day the software of the meter updated by the department. The complainant further stated that she has only consumed 4153 KWH units but recorded KVAH units is 33626. The difference of units occurred only due to updating of meter software by the APSPDCL staff. The complainant stated that she already paid minimum CC bill for the month of May'2022 of Rs.1,20,000/- on 23.6.2022. Hence requested the forum to give directions to the APSPDCL authorities to revise bill as per consumed units. The case was registered as CG.No.22/2022-23/Nellore Circle and sent to respondents for written submissions.



2. The EE/M&P-II/Nellore has submitted the written submission on 12.7.2022 stating that they programmed for HT SC.No.NLR-590, 180KVA Cat-III A service, meter software was changed on 19.05.2022, as per instructions of higher authorities all the existing meters other than domestic and agriculture, the KVARh(lead) parameters to be unblocked . The total procedure was also informed to consumer while updating the unblocking of KVARh lead. Hence requested to consider the point.
3. Respondent-3 i.e. SAO/O/Nellore filed written submission on 20.7.2022. The contents are similar in nature to the written submission filed by the EE/M&P-II/Nellore.
4. Executive Engineer/O/Kavali submitted written submission on 19.07.2022 stating that EE/M&P-II/Nellore has programmed HT SC.No.NLR-590, 180KVA Cat-III A service, software was changed on 19.05.2022 and unblocked KVARh lead parameter.

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. In continuation to this letter the EE/O/Kavali has further submitted a letter on 27.7.2022 stating that 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. ”***

Hence requested the forum to consider the points.

5. Personal hearing through video conferencing was conducted on 03.08.2022. Complainant absent. SAO and EE/O/Kavali present heard respondents version. After completion of the video conferencing the complainant's husband Mr. M.Sudhakara Reddy attended video conferencing. Heard his version.
6. Personal hearing through video conferencing was again conducted on 11.10.2022 Complainant's husband M. Sudhakara Reddy, SAO and EE/O/Kavali present. Heard both sides.

Mr.M.Sudhakar Reddy stated that they have consumed only 4153 KWH units but recorded KVAH units is 33626. The difference of units occurred only due to updating of meter software by the APSPDCL staff. He stated that, automated capacitors provided on 20.7.2022. Hence requested to revise the bill for the months of June'2022 & July'2022

EE/M&P-II/Nellore has stated that on 19.5.2022 they programmed for HT SC.No.NLR-590, 180KVA Cat-III A service, meter software was changed on 19.05.2022. As per instructions of higher authorities all the existing meters other than domestic and agriculture, the KVARh (lead) parameters blocked are to be unblocked. The total procedure was also informed to consumer while updating the unblocking of KVARh lead. Further stated that they served test report notice to the representative of the complainant and obtained the acknowledgement at the time of inspection on 19.5.2022.



Hence stated that the complainant is liable to pay the CC charges issued in the month of June'2022 & July'2022.

7. The EE/O/Kavali has submitted the month wise demand statement from January'2021 to October'2022 which is as follows:-

HT SC NO.590, M/S. GOLDEN SCAMPI FEEDS, SUPPLY RELEASE												
DATE 1.6.2001												
S.NO	MONYEAR	OPENING _RDG	CLOSING_ RDG	MF	LOAD	RMD	BMD	BKWH	RKVAH	PF	BKVAH	DEMAND
1	JAN-2021	126948	137028	1	180	156.78	156.78	10045	10080	0.99	10080	129401
2	FEB-2021	137028	145981.5	1	180	175.1	175.1	8872	8954	0.99	8954	132677
3	MAR-2021	145981.5	149967.5	1	180	164.38	164.38	3981	3986	0.99	7200	118078
4	APR-2021	149967.5	156444	1	180	161.64	161.64	6453	6477	0.99	7200	116374
5	MAY-2021	156444	161029.5	1	180	154.88	154.88	4574.5	4586	0.99	7744	124036
6	JUN-2021	161029.5	172325.5	1	180	166.56	166.56	11262.5	11296	0.99	11296	152915
7	JUL-2021	172325.5	181693.5	1	180	156.62	156.62	9337.5	9368	0.99	9368	135381
8	AUG-2021	181693.5	193071.5	1	180	174.08	174.08	11116	11378	0.97	11378	156458
9	SEP-2021	193071.5	205790.5	1	180	156.9	156.9	12708.5	12719	0.99	12719	172471
10	OCT-2021	205790.5	215090.5	1	180	134.28	144	9300	9300	1	9300	128954
11	NOV-2021	215090.5	220860.5	1	180	135.7	144	5770	5770	1	7200	115512
12	DEC-2021	220860.5	227035.5	1	180	156.9	156.9	6175	6175	1	7845	125728
13	DEC-2021	227035.5	231358.5	1	180	156.9	156.9	6175	6175	1	7845	125728
14	JAN-2022	2	3919	1	180	101.5	144	8218	8240	0.99	8240	122212
15	FEB-2022	3919	7985	1	180	142.1	144	4047	4066	0.99	7200	115410
16	MAR-2022	7985	12313	1	180	151.7	151.7	4328	4328	1	7585	121509
17	APR-2022	12313	21087	1	180	145.92	145.92	8747.5	8774	0.99	8774	126521
18	MAY-2022	21087	27429	1	180	147.76	147.76	6341.5	6342	0.99	7388	123865
19	JUN-2022	27429	61054.5	1	180	150.78	150.78	4153	33625.5	0.12	33626	318496
20	JUL-2022	61054.5	88419.51	1	180	150.8	150.8	6866	27365.01	0.25	27365	273989



21	AUG-2022	88419.51	95070	1	180	154.26	154.26	3982.5	6650.49	0.59	7713	134679
22	SEP-2022	95070	105831	1	180	154.08	154.08	9463.5	10761	0.87	10761	157870
23	OCT-2022	105831	113580.49	1	180	153.6	153.6	6400	7749.49	0.82	7749	135095

As seen from the above table, the consumer has not maintained the power factor during the months of June 2022 (PF is 0.12) , July'2022 (PF is 0.25) and August'2022 (PF is 0.59) and not followed the APERC instructions in tariff from time to time. Hence huge consumption recorded resulting on huge bills.

8. As per the demand it is observed that the complainant received bill for the month of June'2022 for an amount of Rs.3,18,496/- and for the month of July'2022 for an amount of Rs.2,73,989/- remaining months complainant received CC bill between Rs.1,20,000/- to Rs 1,35,000/- approximately.
9. 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.590 NLR?

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*

***Unblocking of leading kVArh :***

***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.***

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”.*

The Forum opined that the respondents clearly mentioned in the remarks column as ‘**RTC/TOD software updated**’ in the notice/test report served by the respondent to the representative of the complainant who was present at the time of inspection. So this forum is of the opinion that the complainant is known about the software updating. The complainant not followed the procedure explained by the department immediately, Due to this effect only, she got huge amount of CC bill in the month of June’2022. She arranged the automated capacitors on 20.7.2022. Hence she received huge amount of CC bill in the month of July’2022 also.

**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 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.

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

**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 into actual work. Both Leading and lagging power factor are equally harmful to the power system.

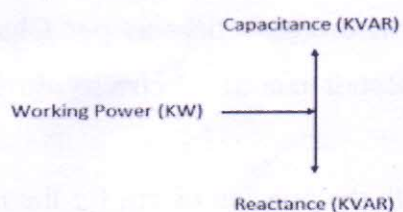
**How do I know my Power Factor?** For consumers having installed TOD, Tri-vector Meters, Meters, depending upon the nature of instantaneous load, instantaneous power factor is displayed on consumer's meter. Consumers can also opt to install PF meters at their LT panel to measure the PF. It is advisable 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 levy 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 as Hon'ble APERC issued guidelines **as per Chapter IX Para 398 in page No. 247 of 375 in Tariff for Retail sale of Electricity during F.Y. 2019-20**

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.22/2022-23/Nellore 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.

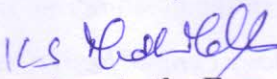
10. In the result the complaint is dismissed.

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 9<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.