ANDHRA PRADESH CENTRAL POWER DISTRIBUTION CORPORATION LIMITED
Dr. Y.S.R Vidyuth Soudha, Corporate office, ITI Road, Vijayawada-520 008

From
The Chief General Manager/RAC,
Corporate office,
APCPDCL, Vijayawada

To
Sri K. Naveen
Ushodaya Enterprises Private Limited,
Eenadu Corporate Office
Ramoji Film City, Anajpur Village
RR district -501512, Telangana State

Lr.No.CGM/Projects/GM/PP&RAC/CP/VJA/F.No.76/D.No. 381 /24, Dt:22.01.2024

Sir,

Sub: APCPDCL -RAC- Replies to objections raised by Ushodaya Enterprises Private Limited, on filing of the ARR & Tariff applications for the Distribution business for the 5th Control Period FY 2024-25 to FY 2028-29 in OP No. 75 of 2023 - Reg.

Ref: Objections raised by Ushodaya Enterprises Private Limited, dt 17.01.2024

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Referring to the objections raised by Ushodaya Enterprises Private Limited,, on filing of the ARR & Tariff applications for the Distribution business for the 5th Control Period FY 2024-25 to FY 2028-29, the reply is furnished as hereunder.

Objections & Replies:

1. The PLF of solar power plants is about 20% in Andhra Pradesh depending on the solar irradiation. Therefore, proposal to determine tariff based on Capacity to be transmitted will definitely result in a huge burden to the renewable energy industry and adversely impact its economic feasibility.

2. Discoms are allowing OA/Wheeling capacity with in the CMD and the consumer pays MD charges as per the terms and conditions of tariff. Thus, the DISCOM recovers its fixed cost in the form of MD charge. This indicates that the consumer always draws his required Demand within the CMD from the grid, be it from the DISCOM or from the OA Generator/Exchange. In the absence of Wind/Solar/Mini-Hydel power, the shortfall power required is drawn from the DISCOM and thus always uses the network and pays the fixed cost related to Transmission. The transmission and distribution business costs are already built into the Retail tariff and are being recovered in the form of MD charges from a consumer, who is availing power through Open Access.

Reply(1&2): Demand charges being collected by the distribution licensee would fulfil the part of fixed cost obligations of the licensee such as fixed charges of generators,

transmission charges and distribution charges. As the tariff is not rationalized based on fixed cost obligations and variable cost obligations of the licensee, the licensee recovers the remaining portions of the fixed cost obligation from the energy charges determined by the Hon'ble commission. If the consumer avails the supply other than the licensee using the licensee's network by paying only demand charges determined by the commission, the licensee will under recover the distribution cost incurred by it, which include O&M expenses, Return on Capital Employed, depreciation etc. Hence, it is justifiable to levy wheeling charges to recover the distribution cost from the consumer who avails open access using the licensee's network.

Even though the PLF of Solar is around 20%, the transmission/ distribution network is being developed by APTRANSCO/APDISCOMS by considering the demand of even OA/IEX/Solar/Third party consumers analogous to the DISCOM consumers. Obligation for development of transmission/ distribution network lies with APTRANSCO /APDISCOMS.

3. Levy of Capacity based Transmission or Distribution tariff on NCE sources like, Solar, Wind and Mini Hydel power plants for which the PLF is around 20% to 25%, amounts to levy of 4 to 5 times of conventional power plant tariff.

This is explained below with the help of an example. Consider proposed transmission tariff of Rs 221.17/kW/Month. One kW conventional power plant generator can generate 720 units in a month and thus can pump 720 units into the grid. Whereas a Solar power Plant of 1 kW capacity can generate 144 units in a month against the same 1 kW capacity as the PLF of SPP is around 20% only.

The transmission tariff proposed in the MYT ARR for the year 2024-25 is - Rs. 221.17/kW/Month.

The per unit transmission charge --- 221.17/720 = Rs. 0.31/kWh for conventional plant.

The per unit transmission charge for Solar Power Plant (SPP) --- 221.17/144 = Rs. 1.54/kWh which is 5 times of cost paid by conventional powerplant generator. This is 5 times of conventional power tariff of Rs. 0.31.

For the reasons mentioned in Para 4 to 6, we submit to levy nominal energy-based Transmission/wheeling charge, instead of capacity based wheeling charge.

Reply : As the licensee develops the distribution infrastructure considering the peak demand of the consumers, it is pertinent to levy demand charges for the contracted/generation capacity of the consumer. Further, the NCE generators can inject power in to the grid up to their peak generation capacity, for which the licensee's network shall support wheeling of power up to injection capacity of the generator.

4. It is further observed that there is an increase of more than 20% every year from 2024-25, on top of the huge increase proposed in Transmission and wheeling charges

5. To determine the wheeling tariff, no methodology is determined by the commission as specified for EHT vide Regulation. 1 of 2019. The Commission has devised its own method and the method followed by the Commission is explained below.

The 33 kV ARR is determined as per the 33 kV network cost. The 33 kV ARR is split into three parts - viz.,

--- ARR in proportion to 33 kV consumer demand would be allocated to 33 kV system.

--- ARR in proportion to 33 kV demand reflecting on 33 kV level from 11 kV consumers would be allocated to11 kV.

--- ARR in proportion to 33 kV demand reflecting at 33 kV level from LT consumers demand would be allocated to LT system.

6. The Commission has adopted different methods for determining EHT Transmission charges and Distribution charges viz, 33 kV, 11 kV and LT network wheeling charges. It seems this approach may have to be rectified.

If the same principle as mentioned in Para 8 above is followed, we may have to allocate or pass on the EHT network ARR cost (by deducting pro-rata cost in proportion to Demand from EHT consumers) to 33 kV network in proportion to 33 kV demand reflecting on the EHT network from 33 kV consumers and so on to 11 kV and LT network. If it is done, the 33 kV, 11 kV and LT ARR would increase to abnormal level, and this would not reflect realistic tariff. But the ARR pertains to EHT network is distributed among all category of consumers and Retail Supply tariff is determined.

Since EHT network is handled by APTRANSCO, its ARR is recovered based on Total Transmission Capacity, without any prorate allocation of EHT Demand to EHT consumers and passing on the balance Demand to 33 kV system (Distribution business). Please note that there is no prorate allocation of network cost in between 220 kV network and 132 kV network. The Total EHT ARR is recovered based on Total Transmission capacity without any reservation based on 220 kV consumption and 132 kV consumption.

Reply: Subject pertains to AP Transco

7. The proposed Wheeling Tariff and the proposed Wheeling ARR are shown in the table below and in Para 14 respectively:

Wheeling Charges for Long Term OA Agreements:

Voltage Level	FY25	FY26	FY27	FY28	FY29
33 KV (Rs./KVA/Month)	83.02	98.96	130.68	172.08	199.53
11 KV (Rs./KVA/Month)	688.51	762.41	920.11	1,101.45	1,230.81
LT (Rs./KVA/Month)	846.40	950.87	1,165.04	1,426.30	1,608.03

Kindly see the Distribution tariff of Rs. 688.51/kVA/Month proposed for 11 kV which is more than Rs 475/kVA/Month. The proposed tariff is totally wrong and cannot be justified. No 11 kV OA consumer can afford this tariff.

For example, consider a case of conventional Generator supplying power to consumers at all the three voltages i.e., 132 kV, 33 kV, 11 kV and LT consumers.

The PLF for conventional power is 100%. One kW of conventional power can transmit around 720 units in a month.

The corresponding per unit costs is as shown below:

The Transmission wheeling cost at 132 kV = 221.17/720 = Rs. 0.31/kWh.

The Distribution wheeling cost at 33 kV= 83.02/720 = Rs. 0.116/kWh.

The Distribution wheeling cost at 11 kV = 688.31/720 = Rs. 0.96/kWh.

The Distribution wheeling cost at LT Voltage = 846.40/720 = Rs. 1.18/kWh.

In case of Solar Generator supplying power to consumers at all the three voltages i.e., 132 kV, 33 kV, 11 kV and LT consumers.

The PLF of Solar Power plant is around 20%. One kW SPP can produce around 144 units in a month. The corresponding costs are as shown below.

The Transmission wheeling cost at 132 kV = 221.17/144 = 1.54/kWh.

The Distribution wheeling cost at 33 kV = 83.02/144 = 0.58/kWh..

The Distribution wheeling cost at 11 kV = 688.51/144 = 4.78/kWh.

The Distribution wheeling cost at LT Voltage = 846.40/144 = Rs. 5.88/kWh.

Voltage	RST (Tariff) Rs /kWh.	Proposed Tr/ Wheeling tariff for Fy 2025- Rs/kW/month.	Proposed Transmission/ Wheeling Tariff in Rs/kWh.	Per unit wheeling cost for Solar Power Plant. (Rs/kWh).	Generator Maximum selling price Rs./unit.
(1)	(2)	(3)	(4)	(5)	(6)=(2)-(5)
132 kV	5.4	221.17	0.31	1.54	3.86
33 kV	5.85	83.02	0.12	0.58	5.27
*11 kV	6.3	688.51	0.96	4.78	1.52
LT	6.7	846.4	1.18	5.88	0.82

Voltage	Conventional Power with PLF of 100%. Rs /kWh. (Energy Wheeling cost)	NCE Power with PLF of 20%. Rs/kWh (Energy Wheeling cost)	Difference (Extra cost to NCE)
132 kV	0.31	1.54	1.23
33 kV	0.12	0.58	0.46
11 kV	0.96	4.78	3.82
LT	1.18	5.88	4.70

For a 11 kV Consumer, a generator has to sell power @ Rs 1.52 per unit which is not practically viable.

This indicates that the methodology adopted by the Hon'ble Commission may not be correct approach. In this regard, we submit to the Hon'ble Commission to take corrective action and determine reasonable energy-based Transmission and wheeling tariffs.

Reply: For the 5th control period, the licensee adopted the methodology used by the Hon'ble APERC while determining the wheeling tariff for the 4th control period. Further, the NCE generators can inject power in to the grid up to their peak generation capacity, for which the licensee's network shall support wheeling of power up to injection capacity of the generator. Hence, it is justifiable to levy wheeling charges based on their contracted capacity

8. The proposed Distribution tariff of 671.48 is 141 % of Demand charge of Rs 475/kVA/Month, which is very high. We are not able to comprehend the reasons for fixation of higher Distribution wheeling tariff while maintaining the Retail Power Supply tariffs intact. If the present tariff is built into the RST, RST perhaps would definitely go up. Or the reason behind the hiking the Distribution business Tariff alone may be to discourage Open Access consumers, which is against the spirit of the Electricity Act, 2003 and may not yield the anticipated competition, efficiency and addition of new generation.

Reply: The licensee computed the wheeling charges considering Aggregate rate revenue requirement for the distribution business, consumers' contracted load and network usage of particular voltage consumers. It is not justifiable to compare the demand charges with the wheeling charges. The reasons for the same was explained in the reply for SNo. 1 to 2.

9. <u>Drawback in the present method:</u>

i) Due to apportioning of 33 kV network cost to 11 kV and LT network based on the asset base utilisation by the respective voltage level consumers, the wheeling tariff for 33 kV consumers is relatively less when compared to 11 kV tariff and EHT transmission tariff. The same can be observed from the following tables.

Table-1 MYT Tariffs for 2014 -15 to 2018-19

Voltage	2014-15	2015-16	2016-17	2017-18	2018-19
EHT tariff Rs./kW/month	65.30	71.66	91.36	95.37	94.44
33 kV Rs./kW/month **(EPDCL tariff)**	13.46	10.98	11.38	11.80	12.22
11 kV Rs/kW/month **(EPDCL Tariff)**	240.15	232.39	247.55	262.96	279.50

Note 1: Please note that the 11 kV EPDCL tariff varies from Rs 240 to Rs. 279 for 2014 to 2019. The 11 kV wheeling tariff is almost 50 % of Demand charge of 475/kVA/Month. This indicates that there is some error in computing these charges.

Table-2: MYT Tariffs for 2014 -15 to 2018-19

Voltage	2014-15	2015-16	2016-17	2017-18	2018-19
EHT tariff Rs./kW/month	65.30	71.66	91.36	95.37	94.44
33 kV Rs./kW/month **(SPDCL tariff)**	7.66	15.51	15.39	15.11	15.17
11 kV Rs/kW/month **(SPDCL tariff)**	164.61	220.82	227.14	232.16	240.68

Note: 2: Please note that the 11 kV SPDCL tariff varies from Rs 164 to Rs. 240 for 2014 to 2019. The 11 kV wheeling tariff for 2018-19 is almost 50 % of Demand charge of 475/kVA/Month. This indicates that there is some error in computing these charges. Observe the huge variation; the APSPDCL tariff begins at 164 for year 2014-15 against APEPDCL tariff of Rs. 240/kW/Month.

Table-3: MYT Tariffs for 2019 - 20 to 2023-24 MYT

Voltage	2019-20	2020-21	2021-22	2022-23	2023-24
EHT tariff Rs/kW/month	119.28	138.88	154.54	173.79	188.38
33 kV Rs./kW/month **(EPDCL tariff)**	45.24	48.38	54.73	59.51	61.92
11 kV Rs/kW/month **(EPDCL Tariff)**	349.71	375.94	427.50	467.43	439.07

Note 3: Please note that the 11 kV EPDCL tariff varies from Rs 349 to Rs. 439 for 2019 to 2023. The 11 kV wheeling tariff for 2019-20 is almost 73 % of Demand charge of 475/kVA/Month. This indicates that there is some error in computing these charges. Correspondingly the 11 kV retail tariff should reflect this cost impact. But it is not so.

Table-4: MYT Tariffs for 2019 - 20 to 2023-24 MYT

Voltage	2019-20	2020-21	2021-22	2022-23	2023-24
EHT tariff Rs/kW/month	119.28	138.88	154.54	173.79	188.38
33 kV Rs./kW/month **(SPDCL tariff)**	61.16	64.11	69.34	75.44	79.48
11 kV Rs/kW/month **(SPDCL tariff)**	**432.38**	**447.58**	**478.38**	**514.76**	**536.83**

Note 4: Please note that the 11 kV APSPDCL tariff varies from Rs 432 to Rs. 536 for 2019 to 2023. The 11 kV wheeling tariff for 2019-20 is almost 90% of Demand charge of 475/kVA/Month. This indicates that there is some error in computing these charges. Correspondingly the 11 kV retail tariff should reflect this cost impact. But it is not so.

From table (3) and (4), kindly observe the variation in wheeling tariffs in between APSPDCL and APEPDCL.

Reply: As explained in the reply to S No 1 to 2, it is not justifiable to compare the demand charges with the wheeling charges. Further, the licensee derived the wheeling tariff by considering network asset value of the particular voltage level and its usage by 33 kv, 11 kv and LT consumers, cost apportionment to respective voltage consumers based on no of consumers, DTRs, substations and lines and contracted load of the consumer.

10. From the above tables, it can be observed that there is abnormal variation in EHT, 33 kV and 11 kV tariffs. The reasons for the abnormal variation are mentioned below.

a) O&M Expense allocation

Please See Para 2.3 of Page 18 of ARR of APCPDCL

1) Employee Expenses (EE) and Administrative & General Expenses (A&G)

2) Employee expenses and A&G expenses have been apportioned as per the distribution of No. of Consumers, Number of DTRs, Length of lines and Number of SS.

a) Licensee projected the voltage wise No. of Consumers, Number of DTRs, Lengths of lines and Number of SS and then observed voltage-wise percentage of each of these parameters.

b) As per employee expenses and A&G expenses projections done in section 1.6, licensee allocated these expense into SS, line length, DTR and consumer in the ratio of 49% : 21% : 10% : 20%.

c) Expense allocation of SS, line length, DTR and consumers are then apportioned to LT, 11kV and 33kV voltage level as per the observed percentages of these parameters.

d) The allocated ratios mentioned in para (b) are assumed percentages and erratic. There is no basis for these numbers. The details of observed percentages mentioned in para (c) are not mentioned here.

e) Grossing up of loads to higher voltages. This is explained in the following paras.

Note 1: One of the main reasons for the increase in 11 kV wheeling tariff is that the 11 kV network cost increased due to implementation of HVDS network for Agl consumers. While implementing HVDS scheme, LT network is converted into 11 kV HT network. The Cost of Service of Agl consumers is being paid by GoAP in the form of subsidy. No agriculture consumer avails Open Access and hence, the 11 kV HVDS network cost need to be excluded to arrive at 11 kV wheeling tariff, if voltage wise wheeling tariffs are to be determined.

Note 2: All the DISCOMs have considered and assumed the same percentages mentioned in the Para 12(1)(b). Practically it is not possible to have same line lengths, SS and DTRs etc. Kindly consider the assumptions made and a corrective action may please be taken.

Reply: For the 5th control period, the licensee adopted the methodology used by the Hon'ble APERC while determining the wheeling tariff for the 4th control period, allocating the expenses into SS, line length, DTR and consumer in the ratio of 49% : 21% : 10% : 20% of the respective DISCOM net work details. It allows the categories of consumers within that voltage and allocate costs. Further, while determining the wheeling tariff, the cost was apportioned & allocated to respective voltage consumers duly considering the contribution of consumers in the lower voltage networks.

11. What should be the philosophy to determine wheeling tariff?

The Hon'ble Commission may please examine the methodology followed while determining Development Charges and treatment of losses in determining the Retail Supply Tariffs (RST). The Hon'ble Commission has issued a Tariff Philosophy wherein a concept called rationalisation of tariffs was published during 1999-2000. The concept is nothing but balancing the tariffs in between affordability (paying capacity) to pay the tariff determined by the Commission and Cost of Service of power.

The Commission adopted the concept of rationalisation of tariffs while fixing Development Charges and treatment of losses while determining RST. The Commission also followed tariff philosophy while recovering the Transmission Cost, SLDC Cost, Distribution Cost, PGCL Expenses, and ULDC Charges etc,. The same is mentioned in Para 3 above.

Reply: While determining the wheeling tariff, the licensee considered the applicable losses to the respective voltage level loads for determining wheeling tariff. For instance, the 33 kV load was grossed up with 33 kV level losses, and the 11 kV load was grossed up with 11 kV and 33 kV losses.

12. The power system is designed in an efficient, economic and for optimum utilization of network assets. Based on the power capacity to be transmitted, the transmission system and sub transmission system is designed. The assumption of existence of 33 kV network is to meet the demand of 11 kV network consumers and LT consumers may not be correct. Similarly, the assumption of networks of 33 kV and 11 kV exist to meet the demand of LT consumers is also not correct. They are interdependent. Without LT & 11 kV consumers, the 33 kV consumers cannot survive and vice versa is also true.

From the above, it is evident that the system requires all consumers for economical and efficient operation of the power system. Hence, wheeling tariff rate can be determined taking the total ARR of distribution business and dividing the same with the total sales (both Dicom sales and OA sales and excluding EHT sales)

Reply: It is not rational to divide the Distribution ARR by total sales up to 33 kV level, as the network usage varies based on the drawl of electricity at a particular voltage level. Further, it is prudent to determine the wheeling tariff based on the contracted load but not on the energy drawl of the consumer, as the network development depends on the anticipated peak load of the consumers but not on the volume of the electricity drawn by the consumers.

13. The Wheeling tariffs proposed by DISCOM are very high compared to Demand charges of Rs. 475/kVA/Month and it appears that there is some error in the methodology followed by the DISCOMs. The Hon'ble Commission may also need to follow Tariff Philosophy mentioned in Para 16 to 19 while determining the Wheeling charges.

Allocation of network costs to 33 kV, 11 kV and LT system based on the Demand consumption may not be right approach and the same is explained in Para 17, 18 and 19. For the reasons mentioned above, we submit to the Hon'ble Commission to do away with the methodology of allocating network costs to 33 kV, 11 kV and LT based on respective demand consumption.

On a large picture, we emphasis to withdraw wheeling charges for NCE generators, as we are availing Open Access within the limits of CMD and we have already paid the necessary charges from the consumer end, through HT connection.

Furthermore, distribution licensees are spending huge amounts in developing infrastructure every year, which should be actually resulting in decrease of charges and losses. But surprisingly, losses and charges are increasing even alter huge investments in developing infrastructure.

14. In view of the reasons / submissions mentioned above, we humbly request the Hon'ble Commission to determine in a reasonable way, energy based wheeling charges for transmission and distribution networks instead of the proposed capacity based charges. The proposed charges will debilitate the renewable energy industry, whose PFF is only around 20-23% and will be counterproductive to the universal objective of promoting clean energy.

Reply(13& 14): The issue is under the purview of APERC

It is to inform that, the Honourable APERC is conducting public hearings on Retail and Distribution businesses through video conference from Conference Hall, APEPDCL, Visakapatnam. The hearings will be held in respect of all the three DISCOMs on 29-01-2024 to 31-01-2024, from 10.30 AM to 1.00 PM and from 2.00 PM to 4.30 PM. APCPDCL has facilitated Video Conference at all offices of Superintending Engineer / Operation at district headquarters and at all remaining offices of Executive Engineer / Operation. Specification of the date and time for objector is under the purview of Honourable Commission.

Yours faithfully

Chief General Manager /RAC
APCPDCL::Vijayawada

Copy submitted to

The Secretary, APERC, 11-4-660, 4th Floor, Singareni Bhavan, Red Hills, Hyderabad