

BEFORE THE ANDHRA PRADESH ELECTRICITY REGULATORY COMMISSION

4th Floor Singareni Bhavan, Red Hills, Hyderabad – 500 004

OP No. 68 & 69 of 2019

IN THE MATTER OF

Petition requesting the Commission

1. To review power consumption estimates.
2. To review power purchase cost.
3. To direct DISCOMs to improve safety and avoid deaths due to shocks.
4. To allow the objector to be heard in person before the Commission takes any decision on this application of the DISCOMs.

IN THE MATTER OF

Name and full address of the petitioner:

People's Monitoring Group on Electricity Regulation

139, Kakatiya Nagar, Hyderabad – 500008

Represented by

M.Thimma Reddy

Convenor

People's Monitoring Group on Electricity Regulation

139, Kakatiya Nagar, Hyderabad – 500008

And

Name and address of the Respondents:

Chairman and Managing Director

Eastern Power Distribution Company of Andhra Pradesh Ltd,

Southern Power Distribution Company of Andhra Pradesh Ltd,

BEFORE THE ANDHRA PRADESH ELECTRICITY REGULATORY COMMISSION

4th Floor Singareni Bhavan, Lakdi-ka-pool, Red Hills, Hyderabad – 500 004

1.1 The following submission of objections and suggestions on the ARR and tariff proposals of APSPDCL and APEPDCL for the year 2018-19 are with reference to the public notice dated 06-12-2019.

Power requirement:

2.1 According to the present ARR and tariff proposals total power requirement in the state during FY 2020-21 will be 69,977.18 MU (EPDCL = 26,358.53 MU and SPDCL = 43,618.65 MU). This estimated power consumption is 10.69% higher than APDISCOMs' revised power consumption estimate for the FY 2019-20. The past experience shows that APDISCOMs usually overestimate power consumption during their filings. This experience demands thorough examination of APDISCOMs' claims on estimated power consumption during the ensuing year 2020-21.

Consumption estimate for 2019-20:

DISCOM	DISCOM's proposal (MU)	ERC Order (MU)	Present estimate (MU)
EPDCL	24,606	23,388.63	23,184.91
SPDCL	43,108	40,285.81	40,032.11
Total	67,713	63,674.44	63,217.02

Consumption estimate for 2018-19:

DISCOM	DISCOM's proposal (MU)	ERC Order (MU)	Present estimate (MU)
EPDCL	21,977	20,821	20,931
SPDCL	39,566	38,032	38,393
Total	61,543	58,853	59,324

2.2 Above tables show that during both the years 2018-19 and 2019-20 DISCOMs power requirement estimates filed as a part of ARR and Tariff Proposals were much higher than the actual consumption recorded during the respective years. During 2018-19 DISCOMs over estimated power requirement for the year by more than 2,000 MU. In the case of 2019-20 DISCOMs over estimated power requirement for the year by more than 4,500 MU. During the year 2019-20 actual power requirement is less than that approved by the Commission.

2.3 During the FY 2019-20 power requirement in the state increased by 6.56%. Compared to this APDISCOMs estimate power requirement during FY 2020-21 to increase by 10.69%. In the background of widespread reports on declining economic growth rate in the country the above estimate of power requirement in the state during FY 2020-21 appears to be an overestimate and need to be re-examined. In the previous filings construction activity at the new capital of the state Amaravati was shown to be one of the important drivers of electricity consumption in the state. Following changed priorities/plans of the State Government regarding the capital city there is subdued activity at Amaravati. APSPDCL in its current filing mentioned CRDA as one of the items for which additional loads are included (p.32) This changed situation in the case of Amaravati also need to be taken in to account while estimating power consumption in the state during the ensuing financial year.

2.4.1 Both the DISCOMs in AP claim that they are following the methodology stipulated by the Commission in calculating consumption of power in agriculture sector. But they did not provide detailed calculations to verify the same and placed only final or summary figures. In other words, only conclusions are stated without any corresponding calculations/information.

2.4.2 During the year 2020-21 EPDCL projected 5% increase in power consumption to 2905.71 MU by agriculture services compared to the previous year. Under EPDCL during 2020-21 LT agriculture services will be accounting for 11% of the power to be procured in the state. While 2018-19 registered negative growth in power consumption by agriculture services 2019-20 was shown to have experienced 26.95% increase in power consumption by agriculture services, from 2206.51 MU in 2018-19 to 2767.34 MU in 2019-20. This is attributed to increase in hours of power supply from 7 hours to 9 hours with effect from 15-02-2019. But the question is: has power consumption by agriculture services really increased so much with the increase in hours of power supply?

2.4.3 In the case of SPDCL the number of agriculture pumpsets will be increasing by 3.35% during 2020-21. If we take in to account EE interventions power consumption increase in agriculture sector shall be less than 3% but not 5.76% as projected by SPDCL.

2.4.4 Estimate of electricity consumption by LT agriculture services continues to be a contentious issue. Under UDAY to which both the DISCOMs are signatories along with GoAP all the DTRs including those serving exclusively agriculture connections are supposed to be metered by 30th September, 2017 [Section 1.3 h) iv)]. As all the DTRS serving agriculture connections are expected be metered the present method of sampling needs to be given up in favour of reading meters of all DTRs serving agriculture connections. This will help to obtain dependable estimate of electricity consumption in agriculture sector. In this context we would like to know the number of DTRs serving exclusively agriculture connections and DTRs serving agriculture along with domestic and commercial consumers in rural areas and out of these how many DTRs are metered, and when are the remaining DTRs are going to be metered? Both the DISCOMs have spent thousands of crores on HVDS DTRs. We are not sure whether they have met the objectives. Expenditure on metering these will be a small fraction of the amount spent on these HVDS DTRs.

2.4.5 Both EPDCL and SPDCL have shown substantial increase in agriculture consumption even in the presence of programmes related to energy efficient irrigation pump sets and solar irrigation pump sets. The Commission has directed the DISCOMs to file periodical reports on

implementation of energy efficient pump sets. But the DISCOMs have not placed these reports on their websites.

T&D losses

DISCOM	2020-21				2019-20
	Power procurement (MU)	Sales (MU)	T&D Losses (MU)	T&D Losses (%)	Estimate T&D Losses (%)
EPDCL	26,358	23,893	2,645	9.35	6.51
SPDCL	43,619	38,794	4,825	11.06	8.17

2.5 APEPDCL and APSPDCL show higher T&D losses during 2020-21 than they have achieved in the previous years. During 2019-20 T&D losses of APEPDCL accounted for 6.51% of the power procured and during the ensuing year (2020-21) these losses are estimated to be 9.35%. Similarly, in the case of APSPDCL during 2019-20 T&D losses stood at 8.17% and during the ensuing year (2020-21) these losses are estimated to be 11.06%. Over the period in fact these losses shall come down. ARRs for the ensuing year present an opposite picture. By bringing down T&D loss levels total power procurement in the state during the ensuing year 2020-21 can be reduced by about 3 percent.

2.6 When the estimated electricity consumption growth rates are moderated to reflect reality and estimated T&D losses are brought down to the previous or even to lower levels the quantum of power to be procured will also come down.

Power purchase costs:

3.1 Out of total ARR of Rs. 44, 840.96 Crore for both the DISCOMs in the State power purchase costs account for Rs. 33,870.24 Crore. In other words, power purchase costs account for 75.53% of the ARR in the State. The filings also show that power purchase costs will be increasing by 18.59% (in the case of EPDCL) to 21.53% (in the case of SPDCL) over the approved power purchase costs of FY 2019-20. Given the high proportion of power purchase costs in the revenue requirement of APDISCOMs and its proposed increase during the ensuing FY 2020-21 the power purchase costs filed by APDISOMs needs to be closely scrutinised.

3.2 According to APDISCOMs' ARR filings while energy requirement during the ensuing year stands at 69,977.26 MU, energy availability would be 66,359.37 MU indicating a deficit of 3,617.89 MU. (At page No. 14 of APSPDCL's ARR deficit is mentioned as 3,955.83 MU) At the same time energy dispatch is 1,332 MU less than availability from APGENCO (884 MU) and CGS (448 MU). This procurement will help to bring down deficit. Here it is also to be noted that APDISCOMs did not include 13,193.67 MU energy available from variable renewable energy (VRE – wind and solar) units. If the energy available from VRE is included the state will be in surplus situation.

3.3 According to the current ARR filings power from APGENCO thermal power plants costs Rs. 5.41 per unit. It is as high as and in case of some of the units higher than the renewable energy units whose PPAs are sought to be set aside on the grounds of high cost power. While unit cost of power from RTPP III is expected to be Rs. 5.93 that of RTPP IV is expected to be Rs. 6.65. On the same grounds of high cost of power, power procurement from high cost APGENCO thermal units needs to be set aside. Unit cost of power from APGENCO thermal units is 15.60% higher than the CGS units and 38.72% higher than Sembicorp unit.

3.4 DSTPS and Sembicorp units are located in the same geographical region, in Nellore district. But there is considerable difference in cost of power generated from these units. Cost of power from DSTPS is 29.49% higher than cost of power from Sembicorp unit. Even variable cost of DSTPS (Rs. 3.14/u) is 28.16% higher than variable cost of Sembicorp Unit (Rs. 2.45/u)

3.5 High cost of power from APGENCO units casts a shadow on the working of these units. Once these units were shown as examples of low cost and efficient functioning. The increasing cost of power from these units demands critical re-examination of power procurement from these units.

3.6.1 The present ARR filings show that fixed cost of APGPCL Stage II will be increasing from Rs. 2.14 Crore during 2019-20 H2 to Rs. 16.63 Crore during 2020-21. Energy availability from this plant will be 30.44 MU during 2019-20 H2 and 66.06 MU during 2020-21. While energy during 2020-21 is double to that of 2019-20 H2 indicating full year being taken in to account, fixed cost is expected to increase nearly eight times and if full year is taken in to account it will be increasing by four times. There is no explanation for such increase in fixed cost of APGPCL Stage II unit.

3.6.2 While during 2019-20 H2 power from APGPCL is 22.12% costlier than IPP Gas units during 2020-21 power from APGPCL will be 51% costlier than IPP Gas units. As source of fuel is the same for all these units, high power purchase cost from APGPCL units needs to be scrutinised.

Variable Renewable Energy:

3.7.1 In ARR for the FY 2020-21 APDISCOMs did not include power available from variable renewable energy (VRE) sources – wind and solar units even when available VRE capacity will be 8,432.45 MW and available energy will be 13,193.67 MU which is about 18.85% of the proposed energy procurement during the ensuing year. According to APSPDCL's filing, "In view of variable nature of generation with character of non-dispatchability, the availability from VRE sources has not been considered for power purchase cost" (Para 3.3.2)

3.7.2 Newspaper reports indicate that the PPAs with VRE are being set aside at the behest of the State Government of AP due to high power procurement cost from these sources. There are issues related to power purchase/procurement cost from VRE sources and the way power purchase cost is fixed in the case of VRE plants. During various public hearings held by the Commission members of the public drew attention to non-transparent manner in which the power purchase costs from these units were fixed. It needs no reiteration that VRE power procurement costs are high and are in need of revision downwards. The present opportunity

has to be utilised to set the tariffs for these units right. But it is not advisable to totally jettison these sources.

3.7.3 Renewable power is being promoted in the context of climate change and global warming. According to Section 86 (1) (e) of the Electricity Act, 2003 one of the functions of the State Commission is “promote cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of distribution licensee.” Accordingly, the APERC had issued Regulations on Renewable Power Purchase Obligations (RPPO). According to the existing RPPO APDISCOMs need to procure 15% of power to be supplied during the year 2020-21 from renewable sources including VRE sources. If RE power is not procured according to the RPPO to that extent renewable energy certificates (REC) needs to be purchased and this will become additional expenditure over and above the PPA obligations. Present DISCOMs proposals are in complete violation of RPPO Regulations meant to promote renewable energy. High cost power from these sources which is over and above the RPPO threshold may be set aside to bring down power purchase cost burden.

3.7.4 Here it is relevant to note that the APERC in its Order dated 15th April, 2019 on Load Forecasts and Resource Plans for the 4th Control Period (FY 2019-20 to FY 2023-24) considered 3,892 MW to 3,757 MW of wind capacity (Para 130) and 2,728 MW of solar capacity (Para 131) across the 4th Control period.

3.7.5 The context is the review of power purchase costs from VRE - wind and solar. These costs are the reason for setting aside VRE PPAs. Instead of raising this issue in the ARR filings APDISCOMs are raising issues related to other costs involved in procuring power from VREs. On the one hand this diverts attention from the main issue. On the other this discourages promotion of VRE in the context of climate change. These costs are worth bearing as an alternative to the costs involved in accessing coal based thermal power.

3.7.6 Significantly, APDISCOMs for the first time demand that the state government pay towards VRE subsidy. According to para 3.6.3 of APSPDCL’s ARR filing “the consumption of VRE in place of dispatchable energy will entail” VRE subsidy minimum of Rs. 2,324.66 Crore and maximum of Rs. 3,498.90 Crore. An important issue in this context is how far VRE integration costs/subsidy mentioned are correct. Transmission costs are one part of this cost: These costs are already approved by the Commission for the 4th Control period and by not buying VRE power we are not going to do away with these costs. Another part of this cost is the costs involved in backing down coal based thermal power plants to facilitate VRE. The difference between VRE cost and variable cost of thermal plants is taken in to account. In other words, they are comparing thermal variable costs with VRE costs. This comparison may be relevant only in the context of backing down of thermal plants. Otherwise total costs (fixed + variable) of the thermal plants have to be compared with VRE costs. In this context hard facts need to be examined - In how many cases thermal plants were backed down to facilitate VRE sources. APDISCOMs’ ARR filings show that all the available energy from APGENCO thermal power plants are being despatched. If despatch was low from plants like DSTPS it was attributed to logistical issues or non-availability of fuel. At the same time there are also instances of backing down of VRE plants in the name of safe operation of thermal plants and grid safety.

3.7.7 APDISCOMs also refer to this as Must Run Incentive. According to this filing, “This MRI is the subsidy payable by State Government to the developer. This MRI subsidy amount will be paid directly by the State Government to the developers under the bilateral agreement between state government and the developers. The same is therefore not supposed to be included in the power purchase cost in ARR.” And “Out of the VRE tariff, Tariff payable by DISCOM is paid to developer by DISCOM under the PPA, and the MRI subsidy is paid to developer by State Govt under the bilateral agreement.” This is for the first time that APDISCOMs are making such a claim. Until now/all these years in the ARRs total power purchase cost of VRE units was included but not on the lines mentioned in the above extracts. Does it mean that all these years consumers are paying more than necessary towards power from VRE sources and/or that the State Government is escaping from its obligation to meet VRE integration/ MRI subsidy.

3.7.8 It is relevant to mention here that the Wind Power Policy of the GoAP neither refers to any bilateral agreements between developers and GoAP nor Must Run Incentive. According to Section 8 i) of Andhra Pradesh wind Power Policy 2015 **Must run status** “Injection from wind power projects shall be considered to be deemed scheduled subject to prevailing regulations/grid code of appropriate commission.” (G.O. MS. No. 9 dated 13.02.2015)

3.7.9 In the background of improved weather forecasting and the APERC Forecasting, Scheduling and Deviation Settlement of Solar and Wind Generation Regulation, 2017 (Regulation 4 of 2017) VRE integration costs are less relevant.

3.7.10 The present debate on VRE shall be taken as an opportunity to re-examine the way solar power is being deployed. Solar power is suitable for decentralised power generation. Through solar power energy needed by the consumers can be generated near the consumption point, obviating the need for costly T&D network. But in the name of reaching targets both central and state governments are promoting utility/megawatt scale plans running in to thousands of MWs at a single place through solar parks or mega solar plants that need extensive T&D network. In the solar power procurement costs from these plants more than one third of it goes to T&D expenditure. It is time to give up solar parks and mega solar power plants and promote rooftop solar units and feeder level small plants to meet needs of agriculture pumpsets.

3.8 While unit variable cost of power from thermal plants is projected to increase by about 10% over the variable cost approved by the Commission for FY 2019-20 total power purchase cost per unit is projected to increase by more than 20%. From the present filings it is not clear what factors contributed to the remaining more than 10% in crease in power purchase cost per unit compared to the one approved by the Commission for FY 2019-20.

Energy efficiency and conservation initiatives:

Expenditure claimed under energy efficiency and conservation initiatives. (Rs. In Crores)

Particulars	2019-20			2020-21		
	EPDCL	SPDCL	Total	EPDCL	SPDCL	Total
DELP	9.84	28.76	38.60	---	22.89	22.89
Solar Pumpsets	93.74	36.58	130.32	43.79	110.42	154.21
Energy Efficient Pumpsets	25.32	45.53	70.85	30.33	28.76	59.09
Total	128.90	110.87	239.77	74.12	162.07	236.19

4.1 For the ensuing year APDISCOMs claimed Rs. 236.19 Crore towards different energy conservation measures. During the current year i.e., 2019-20 they claimed an expenditure of Rs. 239.77 Crore towards the same. These measures are expected to generate commensurate or even excess energy savings. To verify whether savings have been achieved the Commission Ordered the DISCOMs to file periodic reports on progress of these initiatives. But no such reports are forthcoming from APDISCOMs.

4.2 The Commission in its Order in O.P. No. 20 of 2017 dated 17-06-2017 related to installation of energy efficient pump sets had directed, “The petitioner shall submit a quarterly performance and compliance report on the implementation of the project, more particularly about quantum of actual energy savings and the cost benefit analysis done through a 3rd party, the first such report becoming due by 1st August 2017.” (Para 22.j) When we pointed out lack of these reports during the tariff process for the FY 2018-19 the Commission in the Tariff Order for the FY 2018-19 noted, “Both the distribution licensees may furnish both the learned objectors the data or results of the third-party inspections or studies or any other positive material with them on the savings effected with the copies of the same to the Commission to satisfy that the gap between the desired and achieved is little.” (Para 150) As there was no sign of these reports, we again raised this issue in the context of the tariff process for FY 2019-20 APSPDCL has replied that it was going to conduct third party survey on implementation of AgDSM programme. In the Tariff Order of FY 2019-20 the Commission noted, **“The DISCOMs are conveniently silent as to why periodical reports on replacement with energy efficient pump sets were not submitted to the Commission as rightly pointed out by the esteemed objectors. The breach of directions shall yield place to compliance at least hereafter.”** (para. 114. Emphasis in the original) Even after this there is no sign of reports from DISCOMs on savings achieved due to these interventions. We request the Commission to direct the DISCOMs to file reports on progress in implementation of these programmes and savings achieved.

5.1 In the Tariff Order for FY 2019-20 the Commission has allowed Rs. 3 Crore as grants to APSEEDCO for promotion of energy conservation and efficiency. In the ARR for 2020-21 also APDISCOMs claimed similar amount to support APSEEDCO. As New and Renewable Energy Development Corporation of AP (NREDCAP) is already functioning as a nodal agency in the State for promotion of energy conservation and efficiency we do not see

any need for another body to discharge similar functions. We request the Commission to see that no expenditure is allowed under this as a part of ARR for FY 2020-21.

6.1 APDISCOMs claim Rs. 5,376 Crore towards true-up claim during FY 2019-20. The main issue is the growing financial losses of the DISCOMs. According to Section 1.2 i) of the UDAY MoU GoAP shall take over 50% of loss during 2019-20.

6.2 APDISCOMs did not provide details on true-up claim for the FY 2019-20. We request the Commission to direct APDISCOMs to file a detailed petition on the same and conduct a separate public hearing on it.

Deaths due to shocks:

Year	Particulars	EPDCL	SPDCL	Total
2018-19	Deaths due to Dept faults	16		
	Deaths not due to Dept faults	218		
	Total	234	354	588
	No. of cases ex-gratia paid	51	183	234
2019-20 (1st Half)	Deaths due to Dept faults	23		
	Deaths not due to Dept faults	48		
	Total	71	199	270
	No. of cases ex-gratia paid	69	85	154

7.1 The above figures do not include accidents involving department personnel. While EPDCL provided information about these accidents SPDCL did not provide the same. According to EPDCL's filing 6 department personnel died due to electrical accidents during 2018-19 and one person died during the first half of 2019-20.

Further, fatal accidents have been steadily increasing:

Year	EPDCL	SPDCL	Total
2014	150	223	373
2015	152	228	380
2016	151	320	471
2017	201	242	443
2018	278	304	582
2019	234	354	588

7.2 The above table shows that there is no let up in the saga of deaths and destruction due to electrical accidents. The number of deaths increased from 443 in 2016-17 to 588 in 2018-19. First half of 2019-20 already registered 270 deaths due to electrocution. It is needless to say that most of these deaths are avoidable. The CEA has laid down detailed Regulations on safety measures to be taken up by the licensees. Licensees are not implementing these Regulations properly. Operation and maintenance of distribution network is in a very unsafe condition. At many places, especially in rural areas, bare live parts in DTRs and associated bare lines and wires are not kept inaccessible to living beings; barriers, fences and enclosures and minimum clearances to ground are not maintained so that live parts are out of reach to prevent fatal shocks in violation of CEA's Regulations. A B switches at DTRs are also not maintained properly. This is despite the fact that hundreds of crores are being spent on distribution network.

7.3 EPDCL gives number of fatal accidents due to DISCOM fault - 16 out of 234 during 2018-19 and 23 out of 71 during first half of 2019-20. SPDCL does not give this data.

7.4 To understand these accidents and to plan preventive steps properly we request the Commission to direct the licensees to provide information on break-up of accidents based on electrical location (substation, 11 kV line, Distribution transformer, LT line, consumer location etc) and causes for these accidents. It is not enough to make ex-gratia smooth and plan for it. Prevention is equally or more important.

7.5 The Commission has allowed Rs. 19 Crore to be spent by APDISCOMs during 2019-20 on measures for prevention of electrical accidents. But this seems to have no impact on the ground and in fact as seen above there is increase in electrical accidents over the time.

7.6 DISCOM should take steps to provide proper platforms and fencing for DTs; earthing should be improved and regularly maintained at DT locations, since many accidents have happened in case of HVDS transformers; regular safety audits should be conducted in rural areas to rectify low hanging wires, loose joints, leaning poles etc. DISCOM should train its field staff on safety aspects and work to increase awareness in general public.

7.7 Safety regulations have been prepared by the Central Electricity Authority (CEA). State Electrical Inspectorate and DISCOMs are expected to follow these regulations strictly. Since DISCOM license is issued by the SERC, it can ensure that these regulations are strictly followed. SERC can also discuss safety issues with Electrical inspectorate with a view to reduce accidents. In order to analyse the cause of accidents, DISCOMs should be asked to submit detailed reports of accidents giving geographical and electrical location of the accident, causes and preventive action taken. Such reports should be made available in the tariff submissions and on the website of the DISCOMs.

7.8 At the same time, it has to be pointed out that even in the matters of payment of ex-gratia there is no improvement. APERC through its new Regulation has removed burden of payment from DISCOMs. Until then compensation to the victims of electrocution was paid from internal resources DISCOMs. According to Para 28 of APERC Compensation to Victims of Electrical Accidents Regulation, 2017 (Regulation 2 of 2017) "The payment of compensation ordered under this Regulation shall be from the reserve fund provided in the Aggregate Revenue Requirement for the Retail Supply business of the distribution licensees in the Order on tariff determination for retail sale of electricity for that financial year by the

relevant orders of the Andhra Pradesh Electricity Regulatory Commission:” It is a matter of concern that during FY 2018-19 only 52% of victims’ families under SPDCL and 22% of victims’ families under EPDCL received ex-gratia.

Prayer requesting the Commission

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Hyderabad

Deponent

24-12-2019

M. Thimma Reddy