

BEFORE THE ANDHRA PRADESH ELECTRICITY REGULATORY COMMISSION

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

OP Nos. 51, 52, and 53 of 2020

IN THE MATTER OF

Petition requesting the Commission

1. To review power consumption estimates.
2. To review power purchase costs.
3. To direct DISCOMs to recover arrears proactively.
4. To advise the Government of Andhra Pradesh to pay subsidies to DISCOMs in time.
5. To direct DISCOMs to improve safety and avoid deaths due to shocks.
6. 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

3rd Floor, Plot No. 39, Radha Krishna Nagar,
Hyderguda Village, Attapur,
Hyderabad – 500048

Represented by

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Convenor

People's Monitoring Group on Electricity Regulation,
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Hyderabad – 500048

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,

Central Power Distribution Corporation of A. P. 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 APDISCOMs for the year 2021-22 are with reference to the public notice published in the newspapers on 06-12-2020.

Over estimation of power consumption:

Table 1: Power requirement during 2021-22

| DISCOM | Power requirement (MU) |
|----------------|-------------------------------|
| APEPDCL | 25,016.18 |
| APCPDCL | 15,956.64 |
| APSPDCL | 27,395.59 |
| Total | 68,368.41 |

2.1 For the ensuing year 2021-22 APDISCOMs estimated total power requirement to be 68,368.41 MU. Experience over the years shows that APDISCOMs tend to overestimate power requirement. This appears to be the case with the estimation for the ensuing year also. Because of COVID-19 pandemic affecting the economy during the FY 2020-21 power consumption is much less than that allowed by the Commission and it may not be correct to use this year for comparison. We can look at the previous year 2019-20. During 2019-20 while the Commission allowed the DISCOMs to procure 63,674 MU the DISCOMs procured 60,528 MU only. In their ARR and tariff proposals for the FY 2019-20 the DISCOMs estimated power requirement to be 67,713 MU. This shows that DISCOMs' estimation of power requirement in their ARR is much higher than the actual power procurement. Given this experience APDISCOMs' estimation of power requirement for the ensuing year has to be subjected to critical examination.

2.2 APDISCOMs state that they have changed the methodology for load forecast and is now basing it on monthly trends, rather than annual growth rates, except for agriculture and lift irrigation. The details of the monthly trend method, including the data used and calculations done are not furnished. Considering the stated demand fall, especially for commercial and industry consumers, due to COVID and slow return to normalcy, these forecasts needs to be reviewed.

2.3.1 Estimation of electricity consumption by agriculture pump sets is a critical part of arriving at electricity consumption estimate for the ensuing year. Though the DISCOMs explained the methodology followed by them they did not provide other critical information. Since measurements from sample DTs are still being used to estimate this, the details of the

DTs with installed meters, those with valid readings, actual readings and basis for arriving at the consumption should be provided.

2.3.2 DISCOMs state that DBT is going to be implemented in AP, and meters will have to be fixed on all pump sets. The schedule for this roll-out is not clear. Considering the many challenges faced by pilot DBT projects in other states like Punjab and Rajasthan, it is crucial that DISCOMs prepare a road map for implementing the DBT. We suggest that a few pilot programs be implemented first and the lessons from these used for full roll-out. APDISCOMs' filings show that already some consumer groups like laundries, MBC communities, gold smiths, Nayee brahmin community and handlooms are receiving subsidies through DBT method. (APSPDCL Filing, p.81) Experience with this exercise needs to be shared with the public/stakeholders and lessons learnt in implementing this have to be factored in while piloting DBT in the agriculture sector in the state.

2.3.3 DISCOMs in their submissions also mentioned solar power consumed by off grid solar pump sets. These pump sets will not be used throughout the year. They may be used for about 200 days in an year. By connecting these pump sets to the grid, the power generated by solar panels during the days pump sets are not operational can be pumped in to the grid. By converting these off-grid solar units to grid connected solar units more solar power will be available in the state at no cost to the state.

2.4 Consumption by open access and captive consumers will reduce the power purchase requirement of DISCOMs. This is not currently accounted for in the demand forecasts.

T&D Losses:

Table 2: T&D losses during FY 2021-22

| DISCOM | Power requirement (MU) | Total sales (MU) | Losses (MU) | % of losses |
|---------|------------------------|------------------|-------------|-------------|
| APEPDCL | 25,016.18 | 22,596.46 | 2,419.72 | 9.67 |
| APCPDCL | 15,956.64 | 14,182.27 | 1,774.37 | 11.12 |
| APSPDCL | 27,395.59 | 24,272.22 | 3,123.37 | 11.40 |

2.5 During the FY 2019-20 APEPDCL registered T&D losses of 6.96%. Compared to this during the ensuing year these losses will be 9.67%. Similarly, in the case of APSPDCL while during FY 2019-20 T&D losses stood at 8.19% of the total power procured, during the ensuing year these losses will be 11.40%. These show that during the ensuing year losses are estimated to be higher than that achieved in the past. In the background of huge investments made in T&D network in the past and proposed to be made during the ensuing year and also improving human resources these losses shall come down. Instead, the ARR for the ensuing year present an opposite trend. When lower T&D losses are adopted total power requirement in the state will also come down.

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 in the state will also come down.

Power purchase costs:

3.1 According to APDISCOMs' ARR filings for FY 2021-22 while energy requirement during the ensuing year stands at 68,368.42 MU, energy availability would be 71,380.96 MU indicating a surplus of 3, 012.54 MU. APDISCOMs underestimated availability of power during the ensuing year. While during the year 2020-21 APGENCO thermal power units provided 25, 078.24 MU during the year 2021-22 these units are expected to provide 22,627.77 MU which is 2,450 MU less than the previous year. APDISCOMs did not include SDSTPS second unit in their power availability. The Commission in its tariff order for the year 2020-21 included power procurement from this plant. If this plant is included in the units available for power supply about 10,600 MU of additional power will be available. APDISCOMs also did not include power available from APGPCL. APDISCOMs in their filings mentioned that following the Articles of Association APGPCL Stage II is withdrawn from APTRANSCO. Then APGPCL Stage I shall be available for APDISCOMs. During the year 2020-21 APDISCOMs' filings show that 57.2 MU were available from this plant. This much power shall be available during the ensuing year also. If we take these three sources – APGENCO Thermal units, SDSTPS and APGPCL Stage I – in to account 13,108 MU additional power will be available. This takes the surplus power available in the state during the ensuing year to 16,120 MU. As APDISCOMs overestimated power requirement during the ensuing year the surplus power available will be much more.

3.2 Fixed costs of APGENCO thermal units, particularly of RTPP Stage III and IV, are very high. Per MW fixed cost of RTPP Stage IV is Rs. 1.78 Crore and that of Stage III is Rs. 0.81 Crore. Compared to these fixed cost of Kudgi Stage I, which is one of the latest thermal power plants of NTPC, is Rs. 0.59 Crore per MW. We request the Commission not to allow high fixed costs of APGENCO's RTPP Stage III and IV units.

3.3 APDISCOMs adopted Rs. 4.53 per unit as average cost of power from renewable energy (RE) units. As the High Court Order in WP No. 9844 and batch, where in an ad hoc tariff of Rs. 2.43 per unit for wind power and Rs. 2.44 per unit for solar power were determined, is still in force average cost of RE units needs to be suitably modified.

3.4 In the case of Central Generating Stations, the variable Cost Rates for FY 2021-22 were projected as per the actual weighted average variable cost of H1 FY 2020-11 with a 5% escalation to cover up the increase in Fuel Cost. We request the Commission not to allow 5% escalation of variable cost of CGS units as proposed by DISCOMs. In case there is any change in fuel prices during the ensuing year the same may be addressed through true up or fuel surcharge adjustment (FSA) exercise.

3.5 APDISCOMs estimated that during October and November months of the ensuing year the state will be facing a deficit of 392.80 MU power and proposed to procure it from market sources. In the backdrop of additional power available as mentioned above the need for procurement from market has to be revisited. APDISCOMs also proposed 10% escalation in price for market procurement. In case the Commission considers to include market

procurement the price prevailing during the current year i.e., 2020-21 may be taken in to account and any variation in prices during the ensuing year may be addressed through true up or fuel surcharge adjustment (FSA) exercise.

10,000 MW solar power for agriculture:

4.1 The GoAP proposed to set up 10,000 MW capacity solar power plants to meet agriculture demand. And already bids have been invited to set up about 6,050 MW capacity solar power plants. The draft PPAs show that these plants need to be set up within 21 months. Though this issue did not figure in ARR and tariff proposals of APDISCOMs we are placing this issue before the Commission given its implications for the DISCOMs as well as electricity consumers in the state.

4.2 While the idea of linking solar power with agriculture pump sets is to be welcomed the issue is with the way this solar capacity addition is being rolled out.

4.3 One of the issues to be examined is under the prevailing surplus power situation whether this solar power capacity addition is required. The Tariff Order issued by APERC for the FY 2020-21 had projected a surplus of 9,504 MU, that is 12% of the available energy. The ARR for the year 2021-22 shows that surplus available during the ensuing year will be more than 16,000 MU. Many states have been reporting surplus for the past few years. Demand growth has reduced due to economic slowdown, COVID and many other reasons. Due to all these reasons, cost of power in the market has reduced and selling surplus power is not a financially good option. Since demand is low, existing generating stations generate less power, or are being under-utilised. But the distribution companies have to pay the full the fixed cost to them as per the contract. These add to the losses of the distribution companies, which are already in a poor financial health. Hence any capacity addition, including these proposals adding up to 6,050 MW, have to be examined in the overall AP power situation.

4.4 These projects have to be seen in the context of the Load forecast and resource plans approved by the APERC, based on proposals by power utilities and public consultations. After due process, APERC had passed the order on "[Approval of Load Forecasts and Resource Plans](#)" dated April 15, 2019. As per this plan for 2019-20 to 2023-24, no addition was to be done to the solar capacity of 2,729 MW (as of 2019-20) till 2023-24 (Table 136, para 132, page 145 and Annexure B, page 208-211). It may be noted that the resource plan preparation is expected to take an integrated view of the sector – starting with demand projection, loss trajectory, generation capacity addition plan, transmission plan and distribution plan. As per the Annexure B of the order referred above, the total generation capacity required in AP in 2023-24 is 20,537 MW. The proposed capacity addition by APGECL is 10,000 MW of solar power, and the current proposals add up to 6,050MW.

4.5 Another issue to be examined is whether this is the best model or plan to harvest solar power to meet agriculture pump sets' needs. The intention of GoAP to provide 9-hour continuous day time power supply for agriculture pumping is indeed welcome. But setting up separate large scale centralised solar projects may not be the best or the only option. For states like AP, which has good grid connectivity, grid interactive distributed small or medium scale solar projects have multiple benefits. The solar feeder option, where 2-10 MW size solar plant

is set up near 33 kV substation to supply all the pump sets on a 11-kV feeder is by far the best option. These reduce transmission and distribution investment, does not need subsidy and is convenient to farmers. This also reduces T&D losses. This option also ensures dedicated solar power for farmers, whereas large scale solar plant power is common to all grid users. This is Component A in the KUSUM scheme of the Government of India. States like Maharashtra, Rajasthan and Haryana are implementing such projects for agriculture pump sets. There is also a provision of central performance-based incentive for this scheme, making it further attractive. More details are available at: <http://164.100.94.214/pm-kusum-scheme> as well as <https://www.prayaspune.org/peg/resources/solar-feeder.html>. Telangana ERC has already started the process of initiating schemes under solar feeders.

4.6 Along with the solar feeders, grid connected solar pump sets may also considered as an alternative to the mega solar power plants. Solar power is suitable for distributed, decentralised power generation and supply as solar power can be generated at the point of consumption

4.7 Even if centralised solar capacity is to be added as proposed by APGECL, it is better to do in phases, giving time to prepare power evacuation systems and considering that the current power surplus situation may change in the next few years.

4.8 The APDISCOMs will come before the Commission for approval of PPAs with solar power developers. As the recent practice of APDISCOMs show they will approach the Commission only after starting drawing power from these plants or after setting up of these plants is complete which will be too late to examine the issues raised above. Hence this submission before the Commission.

4.9 Besides the above, NREDCAP has also floated proposals for setting up pumped storage units with total capacity of about 6,000 MW. These also have to be seen in the context of the points mentioned above.

Arrears:

5.1 APDISCOMs in their filings have provided information on arrears of Rs. 50, 000 and above. While APEPDCL has provided an abstract of the information APSPDCL has provided individual service wise information (APCPDCL information is provided in the APSPDCL website). According to this information arrears of Rs. 50,000 and above in the state total about Rs. 8,499 Crore. If arrears below Rs. 50,000 are taken in to account total arrears will be much more. While in the case of APSPDCL these arrears stood at Rs. 6,677.58 Crore in the case of APEPDCL these arrears stood at Rs. 1,821.50 Crore. At the same time, in the case of APEPDCL arrears due from government departments and local bodies stood at Rs. 1,123.68 Crore. In other words, government departments and local bodies together accounted for 61.69% of these arrears. APSPDCL did not provide this disaggregated information. Situation in APSPDCL in this regard would not have been much different. These arrears are of the size of 20% of the DISCOMs' ARR. This size of arrears puts lot of pressure on finances of the DISCOMs. We request the Commission to direct APDISCOMs to be proactive in recovering arrears.

5.2 Along with these arrears, non-payment of subsidies by the state government is adding to the financial pressure faced by the DISCOMs in the state. According to APDISCOMs filings total amount to be received from GoAP towards subsidies at the end of first half of the FY 2020-21 stands at Rs. 12, 432.54 Crore (CPDCL = Rs, 411.12 Crore; EPDCL = 3,656.33 Crore; SPDCL = 8,365.09 Crore). The amount to be received by APDISCOMs from consumers and from the state government towards subsidies works out to be more than 50% of the ARR. To this one has to add the implications of the Commission's order on retail supply true up for the 3rd control period where by the Commission has not allowed revenue true-up and most of the carrying cost. Added to these, in the ARR and tariff proposals for the FY 2021-22 APDISCOMs have projected a combined deficit of Rs. 12, 234.97 Crore. All these indicate deteriorating financial health of APDISCOMs. This in turn is leading to mounting dues to generation companies by APDISCOMs.

5.3 Finances of the state government are also in a precarious position indicated in its failure to fulfil its subsidy commitments.

Growing Govt subsidy:

| | |
|---------|----------|
| FY 2018 | 3700 Cr |
| FY 2019 | 6745 Cr |
| FY 2020 | 7064 Cr |
| FY 2021 | 10061 Cr |

5.4 In these trying circumstances it devolves on to the Commission to devise a plan/scheme to steady the finances of APDISOMs and improve their functioning.

5.5 We request the Commission to advise the state government to fulfil its commitments with regard to the subsidies completely in time as envisaged in Section 65 of the Electricity Act, 2003. Under Section 86 (2) of the Act the Commission has the powers to advise the state government.

5.6 In the tariff order for the FY 2021 the Commission has provided as follows: "In the absence of any external subsidization u/s 65 of the Electricity Act, 2003 for the total revenue gap of Rs10,060.63 Cr. (Rs.7247.18 Cr. for APSPDCL and Rs. 2813.44 Cr. for APEPDCL) as determined by the Commission in this order, the licensees will have to charge the rates contained in the above Full Cost Recovery Tariff Schedule during FY2020-21 for retail sale of electricity to generate the revenue to meet the approved ARR for FY2020-21." (Para 221) Under the prevailing circumstances the Commission may have to direct the DISCOMs to bring the contents of this Para in to operation!

Deaths due to shocks:

Table 3: Fatal electrical accidents involving non-departmental persons

| Year | Particulars | EPDCL | SPDCL | CPDCL | Total |
|--------------------------------------|-------------------------------|-------|-------|-------|-------|
| 2019-20 | Deaths due to Dept faults | 29 | | | |
| | Deaths not due to Dept faults | 103 | | | |
| | Total | 132 | 310 | 4 | 446 |
| | No. of cases ex-gratia paid | 48 | 150 | 4 | 202 |
| 2020-21 (1st Half) | Deaths due to Dept faults | 74 | | | |
| | Deaths not due to Dept faults | 44 | | | |
| | Total | 118 | 114 | 18 | 250 |
| | No. of cases ex-gratia paid | 19 | 9 | 18 | 47 |

6.1 The above table shows that 446 non-department persons died due to electrical accidents during the year 2019-20. And 250 non-department persons died due to electrical accidents during first half of the year 2020-21. Many non-department persons were also involved in non-fatal accidents. Also, many animals died due to electrical accidents.

6.2 While APEPDCL gave information on deaths due to department faults and deaths not due to department faults APSPDCL and APCPDCL did not provide such classification of electrical accidents. We request the Commission to direct APSPDCL and APCPDCL to provide information on deaths due to department faults and deaths not due to department faults. During the first half of the FY 2020-21 under APEPDCL out of 118 fatal electrical accidents involving non-department persons 74 fatal accidents took place due to department faults. We request the Commission to direct APEPDCL to provide detailed information on these fatal accidents including causes for them.

6.3 The above figures do not include accidents involving department personnel. While EPDCL provided information about fatal accidents involving department personnel SPDCL and CPDCL did not provide the same. According to EPDCL's filing 4 department personnel died due to electrical accidents during 2019-20 and 3 department personnel died during the first half of 2020-21.

6.4 Though the number of fatal electrical accidents during 2019-20 are less than that took place during 2017-18 (582) and 2018-19 (588) it is not negligible. There is no significant reduction in fatal accidents, even though this issue is discussed during every tariff revision process and APERC has given many directions to the DISCOMs.

6.5 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.

6.6 EPDCL gives number of fatal accidents due to DISCOM fault - 29 out of 132 during 2019-20 and 74 out of 118 during first half of 2020-21. SPDCL and CPDCL do not provide this information.

6.7 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.

6.8 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.

6.9 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.

6.10 In the Tariff Order for the FY 2020-21 the Commission has directed, "Needless to observe, the licensees shall take all possible steps to prevent electrical accidents by adhering to all safety standards in accordance with the CEA Safety Regulations. The Commission proposes to monitor the performance of the DISCOMs on implementation of safety measures for reducing the number of electrical accidents and issue instructions in this regard from time to time in future." (Chapter-V, Para 160(d), Page No.122) In response to this directive the DISCOMs have replied that they have been following safety regulations. But the number of electrical accidents during this year also casts doubts about their claims.

6.11 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 2019-20 only 48% of victims' families under SPDCL and 38% of victims' families under EPDCL received ex-gratia.

New tariff proposals:

7.1 APDISCOMs did not provide rationale for proposed changes in the tariffs.

7.2 Also, DISCOMs did not list all the proposed changes in tariffs. For example, in the case of HT Cat I (Townships etc.) energy charges proposed to be reduced from Rs. 7 per unit to Rs. 5.95 per unit.

7.3 Under the prevailing worsening financial health of APDISCOMs giving the option for apartments and gated communities to opt for HT single point connection to HT Cat I, and reduction of energy charges from Rs. 7 per unit to Rs. 5.95 per unit that will result in further erosion of their income cannot be welcomed.

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Hyderabad

Deponent

24-12-2020

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