

Note by Prayas (Energy Group)

For the 19th meeting of the SAC of APERC on 13/02/2024, at Tirupathi

Sreekumar N, Member, Prayas (Energy Group), Pune

sreekumar@prayaspune.org, <https://energy.prayaspune.org/>

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1. It is good that the MYT, ARR and RST tariff submissions, accepting objections, posting replies and conducting public hearing have been completed in a short time of three months. We look forward to the analysis and final orders from APERC.

This note, prepared for the 19th meeting of the SAC of APERC provides some comments on the petitions and outlines some steps to improve the AP power sector, especially in the areas of financial health, reliable supply and consumer satisfaction.

2. Resource plan and storage: As mentioned by many during the public hearing, the finalisation of the load forecast and resource plan should have happened before the current MYT and ARR/FPT process. Resource plan process had started in May 2023 and public hearing held in August 2023, but the order has not been issued. During the public hearing, we had pointed out some gaps in the resource plan petitions, major points being the issues with forecast, smart meter roll-out and absence of cost optimisation & storage in generation planning. DISCOMs have not responded to the final round of objections submitted in September 2023. The current petitions also have gaps in all these areas.

There is no mention of storage options (BESS or PSP) in the current petitions, which could reduce the dependence on market purchase. As per CEA, the 1200 MW Greenko Pinnapuram project with 1 TMC, 1000 MWh storage, is 60% complete and is expected to be commissioned by Dec 2024 ([Dec 2023 Hydro status report](#) of CEA). But this project is not listed in the petitions. Grid- India released demand pattern analysis reports in Dec 2023, and their analysis of [AP demand for 2015-2022](#) clearly indicates the need for storage to meet peak occurring during non-solar hours.¹ The graph (Figure 14, Anticipation of storage requirement) from the report reproduced in Figure 1, is an indication.

¹ Soar hours are from 0900 to 1800 hours. Figure 5 (High demand spread during the day) in the AP report gives information of high demand (>95% peak) hours occurring outside solar hours. Based on an analysis of 5-year block-wise demand data, the Figure indicates minimum of 00:00 hours (Jan) and maximum of 02:15 hours (Oct) average high demand hours outside solar hours.

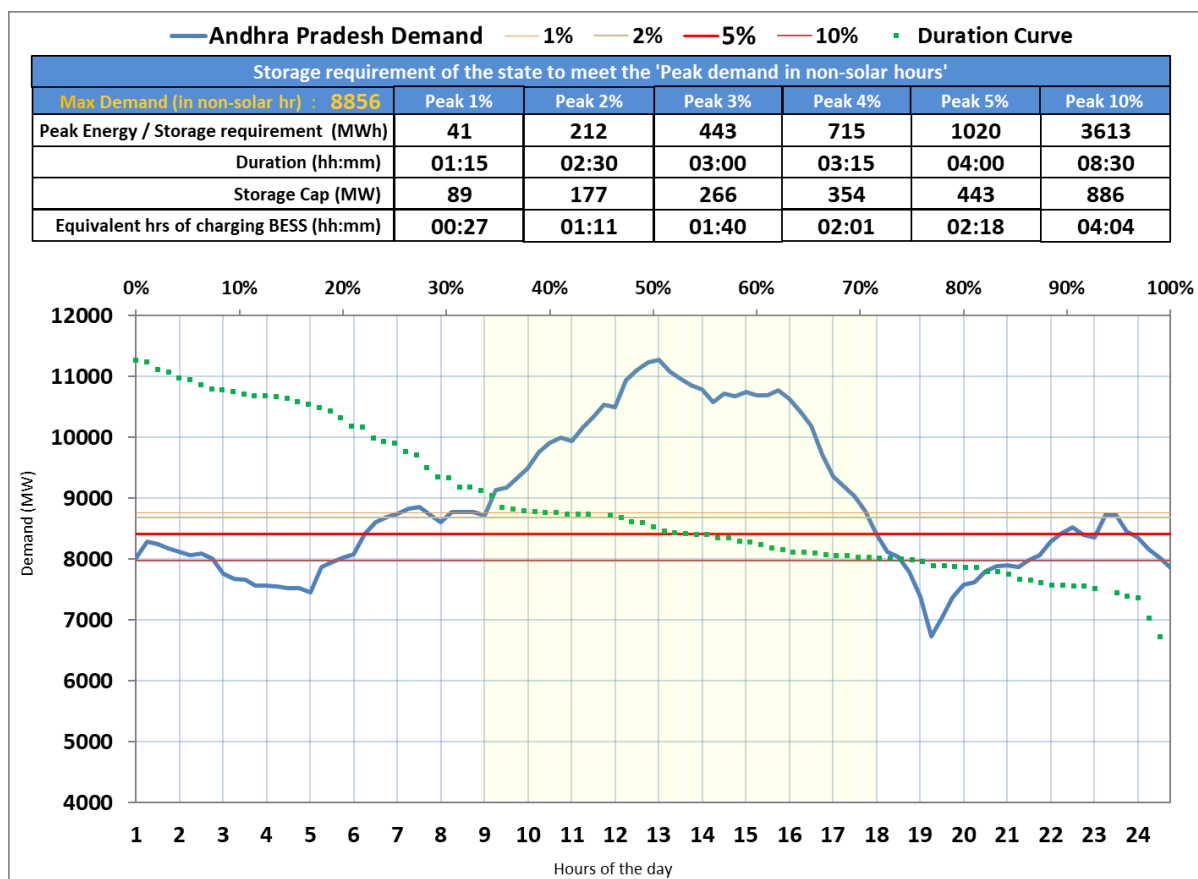


Figure 1: Anticipation of storage requirement for AP (from GRID-India report)

In the SAC meeting, we hope to hear from APERC and licensees why the crucial load forecast and resource plan process could not be completed and why storage requirement is not considered while preparing the petitions. We also wish to know from APERC when the load forecast & resource plan order is likely to be issued.

Considering the high penetration of renewable in AP, it is high time that AP utilities took up a detailed modelling exercise, with block-wise demand forecasts and cost optimal supply & storage mix to provide 24 x 7 supply. This modelling exercise covering capacity expansion and generation dispatch should consider different scenarios in demand growth, consumer migration, efficiency gains and market power options. All future power purchase should be as per the results of this exercise and any exceptions should be approved by APERC after a public process.

On a related note, the regulatory framework for tariff determination of BESS and Pumped storage needs to be developed by APERC, since the current Regulations do not cover them.

MYT for RST is essential: The practice of DISCOMs taking exception from MYT petitions for RST is not good. While it is true that it is difficult to forecast demand

growth for five years, the facility of a mid-term review and true-up during the 5-year control period should address that concern. Even with the current practice, there are differences in the forecast and actuals. One of the benefits of MYT process for RST is to assure tariff certainty to consumers and implement a reasonable tariff increase to cover the rising cost of supply. We request APERC and the DISCOMs to work towards ensuring that the next ARR and RST proposals are for the remaining years of the control period.

As was mentioned during the public hearing, there has been no significant tariff increase in the past four years (except for few categories). But true-up Fuel & Power Purchase Cost Adjustment (FPPCA) charges burden is high on small consumers.² It appears that the total of annual true-up and FPPCA charges is quite high and nearly equal to the revenue gap. This is indeed a sign of the gaps in demand forecast and power purchase planning.

To protect consumers from tariff shock, we suggest that the cap of monthly levy of fuel surcharges should be specified as a percentage of the variable charge / energy charge levied on consumers, say at 15% to 20%, rather than 40p/Unit. This approach aligns with the existing Rules and is already the practice in Chhattisgarh, Haryana, Karnataka, Madhya Pradesh and Maharashtra. Not specifying cap for each consumer category may lead very high percentage tariff increase for some consumer categories.³ We also wish to know the trend of monthly FPCCA. If it is really high and is mostly capped to 40 p/Unit, then there would be significant true-up burden in future.

3. Comments on DISCOM replies: We thank the DISCOMs for providing detailed replies to the questions of some objectors. But not all the replies are satisfactory, as explained in the next points, point 4 to point 12.
4. Review of 4th CP: DISCOMs reply is that actuals for FY23 has been submitted to APERC. On pointing out that FY23 actuals are not provided due to the change in control period, DISCOMs have provided RSF spreadsheets which include FY23 sales, but not other data. In any case, review is much more than providing actuals for the previous control period and that has not been done. We request APERC to formalise the process of review, so that this crucial aspect is taken up before

² As per the [2023 amendment to APERC Tariff Regulations](#), FPPCA is to be recovered on a monthly basis, uniformly from all consumers, with a ceiling of 40p/Unit.

³ This approach aligns with the existing Rules and is already the practice in Chhattisgarh, Haryana, Karnataka, Madhya Pradesh and Maharashtra.

preparing further plans. The RSF formats could also be revised to ensure that actuals for one year is inadvertently not publicly available when the control period changes.

5. Improving sales forecast: As was done during the Resource plan public hearings, clarifications were sought on the method used for sales forecast, including that of agriculture. The answers are sketchy and not clear. Logic for choosing the growth rates for some categories is not explained.

For agriculture, clarification was sought on giving a break-up of LT free power and related agriculture sales. In the reply to Dr. Thimma Reddy, EPDCL has provided details of the number of connections for some agriculture categories, whereas CPDCL and SPDCL has given the sales break-up for some years. DISCOMs need to provide data in the petitions, on free power - number of connections, connected load, monthly sales) for all the years (actuals for previous years in the control period, estimate for the current year and forecast for the future years in the CP).

As per the replies, the method used by EPDCL to estimate free power sales appears different from that of other two DISCOMs. It is high time that all the DISCOMs employ the same approach, the ISI methodology, as approved by APERC. SPDCL and EPDCL in their petitions and CPDCL in its reply state that they plan to use feeder metering based approach to estimate agriculture sales in future. This is a welcome initiative, but we request APERC to clearly prepare practice directions to be followed for this. The outline is provided by the DISCOMs, but details like handling in-valid meter readings, periodic recalibration of APERC approved losses (11 kV feeder, DT and LT) etc needs to be finalised, by APERC.

In its reply, EPDCL has provided data on Srikakulam agriculture IRDA meters for FY23. As per this data, as of Mar 2023, there are 30,731 meters and 99% of meter readings are taken. It is good to see that the monthly meter failure rate is low, varying from 2% (Mar 2023) to 18% (Oct 2022). As seen from Figure 2, there seems to be a significant reduction in meter failure rate (FY23 average is 8.9%) and improvement in valid meter readings from FY22 to FY23. As per news reports, in FY22, only half the meter readings were valid and meter failure rate was about 22%. We request APEDCL to explain the steps that were taken to make this happen. We also request APEPDCL to clarify if “actual readings taken” mentioned in the reply are all valid readings. Why do the total number of monthly meter failures in FY23 add up to 30,856, which is close to the total number of agriculture IRDE meters in Srikakulam? Does it mean that, on an average every meter faces at least one failure in a year? It appears that some are repaired, as the number of replacements in FY23 is 8272

(around 28% of the total). We request details of the down-time of meters and the steps being taken to further reduce meter failures.

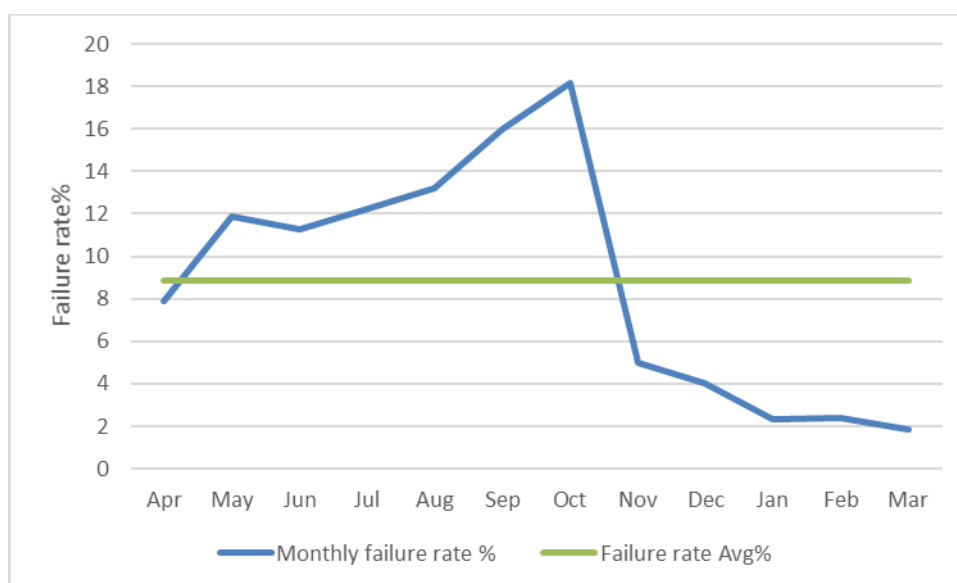


Figure 2: Monthly and Annual average IRDE meter failure % in FY23 Srikakulam

Source: EPDCL reply to Dr. Thimma Reddy

As we have submitted during the resource plan hearings, we request APERC to direct the DISCOMs to report detailed status of agriculture IRDE and Smart meters so that the health status can be monitored, and required corrective actions taken.

Since estimation of free power agriculture supply is a major issue affecting subsidy and power purchase, we request APERC to consider setting up a committee with representation from different stake holders to revise the estimation methodology.

6. Smart metering: Doubts regarding the cost benefit analysis of consumer smart meters were raised during the public hearings. DISCOMs have replied that installation of smart meters is in progress (for agriculture as well as other consumers), but no satisfactory quantitative replies have been given on cost benefit. The replies given about cost benefit during the resource public hearing were not satisfactory, and there is no response to our additional objections submitted after the public hearing. Replies were sought on the status of the APEDCL petition to APERC on prepaid smart meters procedure along with tariff determination to be followed by DISCOMs. Reply by DISCOMs indicate that APERC has asked on 27/12/2023 to DISCOMs to submit petitions under regulatory jurisdiction and not adjudicatory jurisdiction.

We request APERC to clarify the issue and if and when APERC would be examining the Smart Metering program implementation to ensure prudence of investment and to protect consumer interest. It is important to ensure that consumer interest is protected during the smart meter roll out. For example, in case of pre-paid meters, consumers should receive warning before disconnection and reconnection should be immediate on payment. Security deposit should be adjusted against bill and measures for data privacy should be put in place. For example, MPERC has issued [“Practice directions for smart pre-paid billing”](#) in December 2023.

7. Utilisation of coal fleet: Issues related to market purchase to overcome shortages and backing down of thermal stations to accommodate renewable were raised during public hearing. A comprehensive resource plan, prepared through a modelling exercise (as mentioned in point 2) is the best option. But working towards making the coal fleet flexible in terms reducing the technical minimum, improving the ramp rates etc need to be taken up by APGENCO and private coal-based projects. Thermal plants are expected to implement emission norms in the prescribed time frame, which would have impacts on fixed and variable costs. APERC could develop a framework for pass through of such costs, with time lines and tariff modifications.
8. Managing surplus power and market purchase: While there is surplus energy on an annual basis, market purchase has been high. This is the result of gaps in demand forecast and power purchase planning. In their replies, DISCOMs have indicated that real time surplus sale is not possible on PuSHP portal, since it has to be scheduled on D-2, but SWAP option has been used, which we suppose is on a planned basis. Are any other market instruments being used for real time sale of surplus power?

Considering the multiple market instruments, there a need to revise the Regulation 1 of 2022 on short term procurement/sale of power by DISCOM. Only a better demand forecast and generation capacity modelling exercise suggested in point 2, can ensure reduction in costly market power purchase and minimisation of surplus.

9. Electricity Safety: To the objection about the need to identify causes and reduce accidents, EPDCL has provided cause wise list of accidents in FY22, FY23 and FY24 (not clear upto what time in FY24). We request the other DISCOMs also to provide similar information and also their analysis of it. We also appreciate the stated efforts of DISCOMs towards reducing accidents. But we once again request all DISCOMs to provide data related to accidents in uniform format (circle-wise, department and non-department, cause -wise, human fatal & non-fatal, ex-gratia numbers & amount and animal fatal). There are minor differences in the data provided in the replies as

compared to those given in the ARR petition.⁴ We request DISCOMs to clarify which data is the updated one.

The 2023 amendment (Regulation 9 of 2023) of the 2017 Compensation Regulation (2 of 2017) is a welcome step, since it facilitates ex-gratia for more accident victims. We request DISCOMs to provide details of compensation provided for injuries (as directed in Clauses 7-12 of Chapter III of the 2017 Regulation. We also request APERC to review the provision to have the ex-gratia paid from the approved reserve fund in the ARR (Clause 28).

Figure 3 is the human fatal accident data for all three DISCOMs from FY20 to FY23, compiled from ARR submissions of DISCOMs. It is true that the number of fatal accidents is reducing over the years, with a CAGR of -15% over FY20 to FY23. This is quite a small rate, because at this rate, it would take around 21 years for the annual number of fatal human accidents to reach a small number, say 10. Reply from SPDCL mentions that GoAP has constituted a committee to reduce accidents and also that accidents of the past three years will be analysed. We request DISCOMs to update the status of the GoAP constituted committee and also the proposed accident reduction trajectory and plan. As mentioned [elsewhere](#), majority of the fatalities occur at 11 kV and below and majority of the people affected are the rural public. Hence top DISCOM management attention and close monitoring by APERC are essential to increase the pace of reduction of accidents.

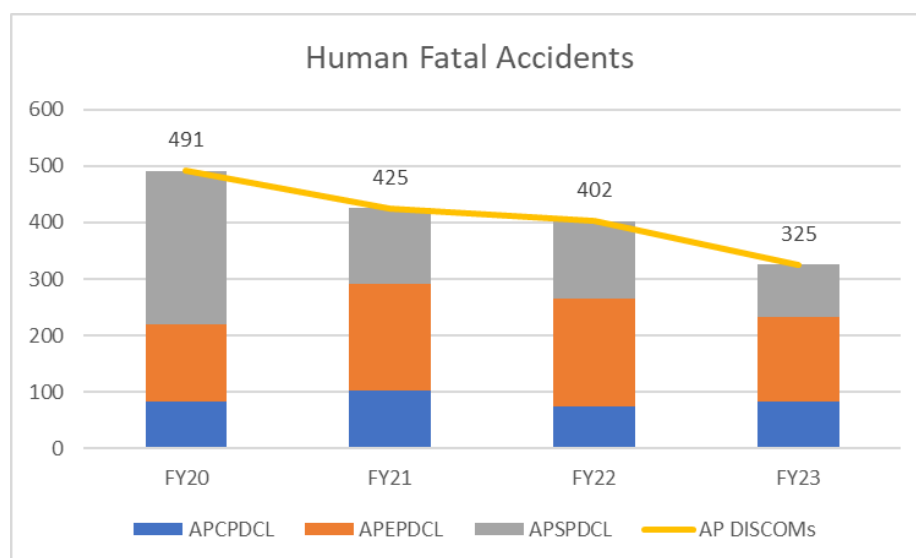


Figure 3: Trend of fatal human accidents in AP

Source: ARRs for respective years

⁴ For example: For EPDCL, in FY23, as per ARR, out of the 142 non-departmental fatal accidents, 50 were given ex-gratia. But as per reply, 118 were paid ex-gratia.

10. Performance parameters: During the public hearing, many issues related to supply and service were raised. Some are individual grievances not sorted out by the existing grievance redressal mechanism and in some cases, objectors may not have even started the redressal process. While it is true that all the three DISCOMs have been rated as A in REC's Consumer Service Rating of DISCOMs [report 2022-23](#), it is to be noted that there are five DISCOMs with A+ rating, and only CPDCL improved the rating from B+ to A this year. The performance of DISCOMs is good, but there is scope for improvement.

Considering the eagerness of public to voice grievances to APERC in the presence of top management of DISCOM, APERC could consider an exclusive public hearing only on the topic of performance parameters and consumer grievances. DISCOMs, GRFs and Ombudsman could submit detailed report on the progress in improving supply & service parameters. This could cover analysis of the past 3-5 years regarding parameters mentioned in SOP & GRF Regulations and related to safety. Comments from public could be sought on these submissions and related issues and public hearing conducted, may be once in a year. This would help to improve the grievance redressal process.

APERC has taken a positive step to amend the SOP Regulations in 2021 to include automatic compensation for few parameters to "complaining" consumers. We feel that the spirit of MoP's Electricity Consumer (Rights) Rules was to implement automatic compensation in a phased manner, without consumers having to complain about a lapse in service quality. APERC could consider a further amendment to include more parameters and removing the word "complaining".

In their replies, DISCOMs have mentioned that they have operationalised the 2021 amendment from FY23. EPDCL gives the details of "eligible" consumers, CPDCL "allowed" consumers and SPDCL the number of consumers. Please clarify that all these consumers were actually compensated, or they were eligible for compensation. The total number of such consumers of all DISCOMs add up to 21,280, quite small. To illustrate, EPDCL recorded 4,44,602 Fuse Off calls in FY23, while 1715 were "eligible" for automatic compensation. Why such a small percentage?

As an answer to data on trends in other performance parameters, EPDCL has given some data on DT failure & accidents, while others have noted and promised to provide in future ARR filings. We request APERC to prepare formats for reporting performance parameters, similar to RSF formats, so that all DISCOMs can report

performance in a uniform fashion, and provide analysis towards improving the performance. Some data on performance parameters are given in the business plan petition, which is good. But there is no analysis or correlation of these parameters to Capex or O&M.

APERC SOP Regulation (7 of 2004) specifies the method for calculating reliability indicators – SAIDI, SAIFI and MAIFI. Data on MAIFI is not provided by any DISCOMs. Regulations suggest separate calculation of indicators for agriculture feeders, which is not provided in the ARR submissions, and SPDCL provided this only in its reply. Regulations gives formulae for calculation of monthly values of indicators, and DISCOMs report these values in the petition. For SAIFI and SAIDI, DISCOMs have calculated the indicator for the year by averaging the monthly indicators. While average gives the average value for a month, it would be good to know the figure for the year, which we feel is not the average, but addition of the number of interruptions (SAIFI) and duration (SAIDI). Calculation of annual values is important especially since, in 2017, APERC had issued [practice directions](#) specifying annual benchmarks for these indicators for industrial feeders, with penalty for not meeting the benchmarks. It would help to clarify if these bench marks are being met, and any plans to tighten them. APERC could consider issuing a practice direction to address these issues.

11. Capital expense oversight: In their business plans, all the utilities have given information of capex during the previous control period, trends of few parameters (loss, DT failure, accidents etc) and plans for capex in the next control periods. AP DISCOMs have proposed significant investment under RDSS for metering and infrastructure. It is requested to provide the break-up of grant and loan components for the RDSS projects. There are stringent conditions in RDSS as part of the Results Evaluation Matrix, and if these are not met, grant could be converted to loans, with significant tariff impacts. Smart metering or energy efficient DTs would require high investment, and hence verifying the prudence of investment is crucial. From the replies, we understand that APERC has approved some parts of RDSS related capex of the DISCOMs. The petitions do not provide such an analysis and we request APERC to ensure that DISCOMs provide cost benefit analysis and correlate the Capex with measurable outcomes.
12. Energy efficiency and DSM: The DISCOM business plans mention energy efficiency initiatives and AP DISCOMs have carried out efficiency projects in LEDs, street lights, fans and agriculture pumps. In order to ensure proper monitoring and verification of energy efficiency gains from these projects, we request APERC to frame Energy Efficiency/DSM Regulations.

13. Addressing the Financial health of the DISCOMs: The accumulated losses, dues from government, arrears consumers and debts of DISCOM are high and increasing. We request APERC to take the initiative to set up a committee with representation from licensees, Finance department and research community to take stock and suggest a road map for remedial measures.
14. Reducing delays and improving the quality of regulatory process: During the public hearing, consumers had raised the issue of having to pay true-up charges for expenses incurred long time ago. The load forecast and resource plan process attracted very few objectors and could not be completed, possibly due to multiple iterations with the utilities.

One initiative that may help in this regard is the institution of Consumer Representative (CR), as suggested in S 94(3) of Electricity Act.⁵ A small group of CRs could be drawn from different areas of expertise. They could work with APERC and licensees on the same side of the table, to improve the regulatory documents, before they are put up for public consultation. Based on our experience in playing this role, we feel that there are four major benefits:

- a. Reduced delay: Informal consultations between all stake holders can reduce procedural hurdles and hence speed up the regulatory process
- b. Improved quality of information and data: Many gaps are best discussed across the table and addressed.
- c. Build-up of trust: Due to the long-drawn processes and limited capacity of institutions, there can be frustration and reduction of trust among stake holders – APERC, licensees, utilities and consumers. Informal discussions about the intent, constraints and long-term plans, would help to reduce distrust.
- d. Introduction of innovative ideas: Across the table loud thinking on tough problems could lead to innovative ideas to address them.

APERC could formulate Regulations for selection of CR and the role they could play along with APERC and licensees.

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⁵ S 94(3): The Appropriate Commission may authorise any person, as it deems fit, to represent the interest of the consumers in the proceedings before it.