



APSERC: APSERC (Framework for Resource Adequacy) Regulations, 2024 [Draft]

Keywords: Resource Adequacy (RA), Demand-Supply Mismatch, System Security and Reliability, Power Procurement Planning, Demand Forecasting, Long-term Contracting, Flexibility in Short-term Procurement, Energy Banking, Demand Response, Time-of-Day (TOD) Tariff

APSERC notified draft **Arunachal Pradesh Electricity Regulatory Commission (Framework for Resource Adequacy) Regulations, 2024** on 28th February, 2024 for providing framework for resource adequacy. The key highlights of this draft is mentioned below:

Objectives:

The overall objective of the Resource Adequacy (RA) framework is to avoid demand-supply mismatches and ensure system security and reliability at a national level. This involves enhancing the accuracy of long-term demand forecasting and power procurement planning. The framework emphasizes the necessity for distribution licensees to focus on adequate contracting through long-term contracts (at least 75%) to maintain system reliability and manage costs effectively. Additionally, it seeks to provide flexibility for short-term procurement adjustments and recognize the roles of demand response and TOD tariffs in achieving resource adequacy.

The documents can be accessed [here](#)

CER Opinions:

The overall objective of the Resource Adequacy (RA) framework is to avoid demand-supply mismatches and ensure system security and reliability at a national level. This involves enhancing the accuracy of long-term demand forecasting and power procurement planning. The framework emphasizes the necessity for distribution licensees to focus on adequate contracting through long-term contracts (at least 75%) to maintain system reliability and manage costs effectively. Additionally, it seeks to provide flexibility for short-term procurement adjustments and recognize the roles of demand response and TOD tariffs in achieving resource adequacy.

- 1. Necessity of resource adequacy framework:** The ongoing challenge of catering to the peak demand reliably is currently being faced by the utilities in India. Sufficient amount of power supply coupled with demand response framework and sharing of inter-state and inter-region power should be adopted to meet the peak demand reliably. The overall objective of Resource Adequacy (RA) framework is to avoid demand-supply mismatch, ensure system security and reliability at the national level.

Power procurement cost is a major part of the RA study. Power procurement plans and contracts typically have a long-term horizon and, hence, need to be worked out well in advance, based



on reliable and dependable forecast. CER, IIT Kanpur carried out a research on the importance of these aspects and published a book on “Regulatory Framework for Long-term Demand Forecasting and Power Procurement Planning”¹. IITK have also worked on numerous similar assignments and have provided their opinion on “Power Purchase and Procurement Process Regulations”², and “Terms and Conditions for short-term procurement/sale of power Regulation, 2021”³.

Given the experience of CER and EAL in carrying out Long-term Demand Forecasting and Power Procurement Planning for the states of Uttar Pradesh and Chhattisgarh, we reinforce the need for a robust regulatory framework for the same. From these studies, it was inferred that significant economic benefits in terms of reduced private and social costs is possible through RA.

Comments⁴ provided on ‘Draft Guidelines for Resource Adequacy Planning Framework for India’ guidelines issued by the Central Electricity Authority (CEA) can also be reviewed from Volume 2 Issue 3 of Power Chronicle, a quarterly newsletter of the Energy Analytics Lab (EAL).

- 2. Long-term Distribution Licensee RA Plan (LT-DRAP):** *Clause 12(3) In its overall power procurement planning approach, the distribution licensee shall lay greater emphasis on adequate contracting through Long Term contract (at least 75%).”*

Previous studies carried out by CER-EAL, IIT Kanpur for long-term demand forecasting and power procurement planning (spanning a horizon of ten years, has revealed that such long-term analysis enables the discom to take timely decision for contracting capacity over a period time while keeping in mind long-term demand trajectory and economics thereof.

- 3. Flexibility regarding Contract Capacity Timeline:** *Clause 12(5) “The distribution licensee shall contract capacities by 30th November of each year and submit the Annual Rolling Plan to STU/SLDC by 31st December of each year for ensuring year(s).”*

By November 30th, all the short-term requirement cannot be contracted. The RA framework desires that such contracts be in place by the cut-off date. By the very nature of the ST contract which can be done within a gap of few hours to few months in advance. Contracts spanning

¹ Singh et al. (2019), Regulatory Framework for Long-term Demand Forecasting and Power Procurement Planning, CER Monograph, Book ISBN:978-93-5321-969-7, https://cer.iitk.ac.in/assets/downloads/CER_Monograph.pdf

² Draft Detailed Procedure for Madhya Pradesh Electricity Regulatory Commission (Power Purchase and Procurement Process) Regulations, Revision-II, 2022 (RG-19(2) of 2022), https://cer.iitk.ac.in/odf_assets/upload_files/blog/Revision_2_2022_Power_Procurement_Draft_Regulation.pdf

³ APERC (Terms and Conditions for Short-term Procurement/sale of power) Regulation, 2021, https://cer.iitk.ac.in/odf_assets/upload_files/Draft_APERC_Terms_and_Conditions_for_short_term_procurement_sale_of_power_Regulation_2021.pdf

⁴ Anoop Singh, “Comments on CEA (Resource Adequacy Framework for India), 2022[draft]” Power Chronicle, Volume 5, Issue 5 https://eal.iitk.ac.in/assets/docs/power_chronicle_vol_5_issue_3.pdf

few months are not available through the competitive platforms like the power exchanges (PXs). The dynamic nature of the power market would have a significant bearing on the price discovered for such ST contracts.

Some amount of flexibility should be available to the distribution licensee to enable it to tie up ST procurement spread over a period. This would also avoid rush to the market (by all discoms across the country with similar provisions), and thus influencing the electricity prices for ST contracts. This flexibility would also allow the discom to fine tune its projects on an ongoing basis and thus adjust its power procurement needs. **Quarterly update may be provided for fine-tuning the ST needs and be reported to the Commission within 2 weeks of end of each quarter.**

4. **Timelines for approval of respective contract capacity:** *Clause 16 (3) states “...Distribution licensees shall perform LT-DRAP, MT-DRAP and ST-DRAP exercise by 31st August of each year for the ensuing year(s)”*. The draft should clearly specify a timeline for information sharing with the respective STU / SLDC regarding contracted capacities for the ensuing year for meeting RAR, after approval of APSERC.
5. **Explicit role of Demand Response and TOD tariff:** The draft proposes achieving resource adequacy through increased generation capacity and power procurement planning, but does not take into account the role of demand response and demand shift caused by the implementation of TOD tariffs. The discom should be allowed flexibility to implement/fine-tune such programs, in case of a mismatch between the peak demand and the adequacy of resources to meet the same.
6. **Energy Banking:** As per the prevailing practices, discoms resort to energy banking across hours of the day or eve across seasons. Role of banking should be accounted for while preparing the ST resource adequacy plan. Discoms may have such ST agreements in place by November of a previous month, and thus should be reflected in the resource adequacy plan of the discoms.
7. **Compliance Framework:** Non-compliance for securing adequate resource adequacy for meeting the forecasted demand of the proceeding years may be dis-incentivised by limiting the amount of procurement of power through ST contracts/PXs. This limit may only be relaxed in case of say extenuating circumstances that may lead to sudden and unforeseen demand in a particular month, beyond a limit of sat 5% of the forecasted amount. The discoms should demonstrate this along with its petition for true up later.
8. **Review of historical RA plans:** The discom should provide a report, along with its true up petition, on the efficacy of its resource adequacy plan for the year (for which true up is being submitted). Such a review should identify reasons for departure from the historical forecast and deviation in resource adequacy plan. The discoms should identify measures to address the same while submitting the RA plan for the proceeding years.



9. Data Compilation and Sharing: Demand forecasting and planning for resource adequacy requires a lot of data. A standardised format may enable the discom to collect such data and report it for RA analysis. Such information should also be available for further research, especially by academic institutions. This would enable development of alternate models and estimate and would help the discom as well as the Commission in the long-run by learning from such alternate RA plans.

10. Information Sharing: The discoms should share the resource adequacy reports/plans through a special webpage on its web portal. This should be archived and searchable so that it can be easily accessed later by the stakeholders. The uploaded documents should be in PDF format (not scanned) along with any supporting files.