

Comments and suggestions on Draft APERC (Framework for Resource Adequacy) Regulations, 2026

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The Andhra Pradesh Electricity Regulatory Commission (APERC or the Commission) has issued draft Resource Adequacy (RA) regulations, 2026 on 6th March 2026, and invited comments on the same by 27th March 2026. These regulations provide a framework for the Andhra Pradesh DISCOMs to plan their power procurement in a cost-optimal manner while taking cognizance of available technologies, given the cost reductions in standalone BESS by ~75% since 2022 and the emergence of cost competitive Solar+ESS and FDRE contracts to provide close to round-the clock supply, as well as changes in demand. The Draft also covers Transmission & Distribution planning. It applies to generating companies, distribution licensees, TRANSCO, SLDC, all grid connected entities and stakeholders within AP. We welcome the publication of these draft regulations which has incorporated the following forward-looking frameworks:

1. The mandate to develop and prepare long-term 10 year rolling generation RA plans.
2. The consideration of generation RA studies in transmission and distribution network resource plans as part of the RA process.
3. Requiring the institution of dedicated planning cells in Distribution Licensees for:
 - a. Resource adequacy to be set up within three months of the notification of these regulations.
 - b. Power procurement optimisation via purchase and sale on market platforms to be set up within 45 days of the notification of these regulations.
4. Requiring DISCOMs to furnish a plan to meet their Resource Adequacy Requirement for a 5-year horizon to the Commission for approval.
5. Directing the DISCOMs, SLDC and STU to develop a grid resilience and disaster management plan.

Considering this, Prayas (Energy Group)'s comments and suggestions highlight areas where more clarity is needed to enable a smooth rollout and implementation of the RA regulations. In addition, we suggest certain changes towards ensuring a robust and transparent resource planning and cost-effective power procurement.

One broad comment is that dedicated planning cells are needed not only in Distribution Licensees, but also in Transmission licensees and Generating Companies. We hope that the Commission would include this aspect in the final Regulations.

A request to the Commission is to conduct public hearing on this crucial Regulation, before finalising it. As of March 2026, twenty states have finalised Resource Adequacy Regulations and Nine of them have done so after holding a public hearing.¹

1. Extent and applicability of Resource Adequacy regulations

The resource adequacy process in India is in its nascent stages, and while the proposed regulatory framework also covers transmission and distribution network planning, it is largely limited to the assessment of generation resource adequacy. With consistent implementation and the growing capacity of the key stakeholders (DISCOMs, SLDC, STU, Commission etc), the framework should evolve to include key aspects like,

- Co-optimisation of transmission and generation resource planning

¹ Nine SERCs which have organised public hearing are: Assam, Bihar, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh and Punjab. Rajasthan held a public hearing in March 2026, but the order has not yet been issued.

- Determination of capacity credits using Effective Load Carrying Capability (ELCC)
- Optimisation of Distribution network expansion
- Factoring of extreme weather events etc

Periodic revisions of the regulations facilitate a growing robustness of the state resource adequacy process, while taking into the changing contexts and requirements of the sector. Given this, the applicability of the resource adequacy regulations should extend for a period of 5 years, after which it could be revised, based on implementation experience

Thus, we request the Commission to,

- Revise regulation 1.3 as follows:

*"This regulation shall come into force from the date of its publication in the Official Gazette of Andhra Pradesh **for a period of five years ending on 31st March 2031.**"*

2. Transmission and distribution network resource adequacy plan

It is a welcome sign that Regulation 5.4 mentions that the distribution plan should be prepared concurrently with the LT DRAP. Similarly, Regulation 5.2 include transmission network and distribution network augmentation as well in the key steps.

As per Regulation 5.5, STU is to develop and transmission planning criteria (which has to align with the latest transmission planning criteria from CEA and state Grid code) which takes into account the RA plan of the DISCOM. STU has to file these criteria with the Commission as part of the MYT/Annual tariff petitions. This is a good provision, but it is necessary to give a deadline to the STU to develop State specific transmission planning criteria. For the Transmission plan, the time horizon (of 10 years) and revision (every year) could be same as that for LT DRAP. It is also necessary to update the AP State Grid Code, which was finalised many years ago.

Regulation 5.2 (D) mentions "Planning of distribution network augmentation/ strengthening", and 5.4 mentions that Resource Adequacy plans and Distribution plan should be concurrently developed. But the Draft Regulation does not elaborate the approach for this. APERC Guidelines on load forecast, resource plan and power procurement (2006) and [CEA Electricity Distribution network planning criteria 2023](#) do provide some framework for Distribution network planning. But the APERC 2006 Guideline is dated and CEA 2023 Criteria is general in nature.

Thus, we request the Commission to:

- Revise regulation 5.5 as follows,

*"The STU is required to develop and prepare transmission planning criteria **within six months of the publication of this Regulation.** These criteria must align with the latest transmission planning criteria from the CEA and the state grid code, and also consider the RA plan of the Distribution Licensees. The STU must file these criteria with the Commission as part of the MYT/Annual Tariff petitions. **Commission will take up the updating of the State Electricity Grid Code (SEGC), and till that time, STU could use the current SEGC and relevant provisions of the latest IEGC.**"*

- Revise regulation 5.4 as follows

*"In compliance with this Regulation, the Distribution Licensees shall develop and prepare the following plans: the LT-DRAP, which is to be created concurrently with the Distribution plan; the MT-DRAP; and the ST-DRAP. **The Commission with inputs from the Distribution Licensees, shall develop the updated State specific Distribution network planning criteria within six months. APERC Guidelines on load forecast, resource plan and power procurement (2006) and CEA Electricity Distribution network planning criteria 2023 could be used as guidelines to develop this. Till such criteria are ready, the APERC and CEA guidelines should be used by DISCOM to prepare the Distribution plans.**"*

3. Strengthening demand forecast

The efficacy of any resource adequacy study based on capacity expansion and subsequent unit commitment/production cost simulation to assess compliance to the reliability metrics can only be as good as the robustness of the forecasted demand. Thus, towards ensuring a robust and improved demand forecast, we recommend:

- a) That the regulations list the demand drivers that should be considered while doing these studies - new appliances and loads, appliance usage behaviour, industrial activity, efficiency measures, captive/open access demand, etc. The drivers that have been considered in demand estimation should also be spelt out by the licensees along with the methods used when submitting their RA plans. It is critical that the link between these drivers and estimated demand is justified on the basis of load research studies. Such load research studies should be based on available data such as connected load, sales and granular consumer meter data. The first study should be published a year from notification of the regulations in accordance with the guidelines for load research issued by the Commission which shall include sampling methodology (sample sizes and identification of feeders, etc) and protocols for data storage and maintenance from metering infrastructure.
- b) While capacity expansion modelling can be carried out on at an hourly granularity, it is critical that production cost simulations use 15-min forecasts in line with the scheduling and dispatch practices in order to consider operational constraints such as thermal ramp rates in the context of sub-hourly variability in demand and RE generation. This, along with renewable generation profiles at the same granularity, would help in more accurate representation of variability in the RA studies.

Regulation 6.5 lists trend analysis (based on historical CAGR growth rates) as a valid method to forecast category-wise energy demand as part of the resource adequacy study. However, it is important to note that a focus solely on past trends is not sufficient, as future electricity demand will be influenced by evolving technologies, climate conditions, preferences, and policies across multiple sectors. These factors include but are not limited to:

- Industrial policies which attract or discourage certain types of industries like data centres or pharmaceuticals.
- Adoption of electric vehicles and policies to support public charging infrastructure.
- Increasing affordability and consumer adoption of air conditioners and coolers

Carrying out load-surveys is critical towards evaluating the impact of the above-mentioned factors on future demand growth and share. Regulation 7.2 of the draft regulations already require the DISCOMs (in collaboration with the SLDC) to carry out load research to determine the short-term demand forecast. The results of this annual load research study should also feed into the medium-term and long-term demand forecasts determined by the DISCOMs. Since three categories - namely LT Domestic, LT Agriculture and HT Industry - account for nearly 80% of the DISCOM sales in AP, it is important to pay special attention to the demand forecast of these categories.

Further, trend-analysis needs to be more disaggregated to capture various geographies and energy services and the DISCOM should clearly describe the method that was employed along with the data that was used for the method. Such trend analysis can also act as inputs to various methods and techniques as elaborated in regulation 6.5 of the draft regulations.

Additionally, given the growing adoption of captive rooftop solar systems by domestic, commercial and industrial consumers, it is critical that the distribution licensees maintain detailed datasets to better understand their generation and local consumption patterns. Such datasets should track,

- Number and size of rooftop solar systems at a circle-wise disaggregation.
- Generation profile of these rooftop solar systems at a block-wise or ToD slot-wise granularity.
- Energy supplied to the grid from these systems at a block-wise or ToD slot-wise granularity

A robust methodology to determine agricultural demand is critical, especially considering that agriculture accounts for 25% of the DISCOMs sales in Andhra Pradesh. Given this, the Commission should commission a study to improve the methodology for agricultural demand estimation on the basis on data from agricultural feeders.

Thus, we request the Commission to:

- Revise regulation 6.2 as follows,

*"The Distribution Licensee shall conduct a comprehensive demand assessment and forecasting, covering ~~hourly or sub-hourly~~ **15-minute block-wise** periods within their distribution area. This must utilise scientific modelling tools and comprehensive input data, covering both the Long-term and Medium-term time horizons, to ensure accurate demand predictions"*
- Revise regulation 6.5 as follows,

"The Distribution Licensee shall determine the energy forecast for each consumer category. by utilising any of the following methodologies, individually or in combination:

 - A. **Disaggregated Time Series Analysis and Trend Analysis:** This includes assessing Year-on-Year growth or calculating the Compounded Annual Growth Rate (CAGR) over a specified historical period **at various spatial granularity such as circle/division/consumer/end-use energy service etc.**
 - B. **Econometric Modelling:** This method must include a clear specification of the parameters used, the algorithm adopted, and the source of the data.
 - C. **Advanced AI and Machine Learning Techniques:** Specifically, this covers the use of Artificial Intelligence (AI), including machine learning, and Artificial Neural Networks (ANNs).
 - D. **Specific Demand Forecasting Models:** This includes the Auto-Regressive Integrated Moving Average (ARIMA) method.
 - E. **End Use Methodology:** This can be either a full End Use or a Partial End Use method, **which include specific bottom-up end-use service level demand estimation to account for emerging end-uses such as air-conditioners, electric vehicles, electrification of industrial processes and so on."**
- Revise regulation 6.8 as follows,

*"The Distribution Licensee shall employ state-of-the-art tools, scientific methodologies, and a robust database. This database should comprehensively cover relevant data for the Licensee's area, including, but not limited to, weather patterns, historical consumption data, demographic and econometric information, detailed consumption profiles, and the anticipated impact of various policies and market drivers, **such as new appliances and loads, appliance usage behaviour, industrial activity, efficiency measures, captive/open access demand, etc, in his area."***
- Issue draft guidelines for public consultation on bottom-up demand estimation using load survey studies within three months of the notification of these regulations.
- Commission a study to establish a robust methodology for agricultural demand estimation within three months of the notification of these regulations. This study could address aspects such as the quality of feeder metering, accuracy of consumer mapping, quality of metered data in mixed feeders and re-assessment of normative feeder losses based on sample field measurements.

4. Generation resource planning

Regulation 14.6 of the draft regulations require the DISCOMs carry out power procurement in adherence with the higher of the Renewable Purchase Obligations as notified by the Commission or the Renewable Consumption Obligation as notified by the Ministry of Power. This is a welcome step, as the trajectory

notified by the Commission in the 2022 renewable power purchase obligations regulations ends in FY 2026-27 with a lower target of 24%.

In addition to this, the regulations should also require adherence to the Energy Storage Obligation targets as notified by the Ministry of Power in July 2022 under the Electricity Act, 2003, in light of the growing role of energy storage towards ensuring reliable and cost-optimal supply. Moreover, since the Regulations require DISCOMs to carry out ten year RA studies whose time horizon would extend into the 2030's, the Commission could issue guiding long-term RPO/RCO and ESO targets in the absence of long-term trajectories issued by the Ministry of Power.

While requiring adherence to the RPO/RCO/ESO targets is necessary, it is equally importance to ensure that these targets do not act as an upper ceiling on the magnitude of renewable energy that is contracted by the DISCOMs. The contracting decisions must be based on the results of a capacity expansion and production cost simulation model with an accurate reflection of costs, transmission constraints and commissioning timelines.

Requiring the DISCOMs to carryout production cost simulation at a 15-minute block-wise granularity subsequent to the capacity expansion run would ensure that the results of the RA exercise are reflective of the operational constraints and costs of integrating renewable energy. Following are some aspects of renewable energy integration that are captured by such studies:

- Ramping constraints
- Ramp rates and costs incurred during start-up and shut-down procedures at thermal power plants.
- Costs and benefits of operating thermal power plants at lower technical minimum.
- The cost and requirement of energy storage.

Thus, we request the Commission to,

- Revise regulation 14.6 as follows:

*"Procurement of power capacity from RE sources by the Distribution Licensee to meet the RPO **and ESO** targets must adhere to the higher of the Regulations notified by the Commission periodically or the RCO targets specified in the notifications issued by the Ministry of Power (MOP) under the Energy Conservation Act, 2001 **and ESO targets specified in the notification issued by the Ministry of Power under the Electricity Act, 2003 (as amended).**"*

- Consider issuing guiding long-term RPO/RCO and ESO targets in the absence of long-term trajectories issued by the Ministry of Power.
- Ensure the magnitude of renewable energy contracted by the DISCOMs are not capped at the RPO/RCO and ESO targets, but instead are based on the results of an RA study with an accurate reflection of costs, transmission constraints and commissioning timelines.

5. More robust capacity crediting framework

The proposed method for calculating capacity credit in section 10 of the draft regulations may not reflect the dynamics that affect the value of certain technologies. For instance:

- **Certain resources have diminishing capacity credit as their penetration increases.** For example, solar capacity may have a certain value in a system where there is a day-time peak. However, each additional megawatt of solar added to the system may have diminishing value. This may be particularly relevant when making decisions for a longer period like ten years.
- **The impact of one resource on the capacity credit of other resources.** For example, in a solar heavy system, additional solar capacity is likely to have a low-capacity value. However, addition of storage resources can result in a higher capacity value for solar. Thus, capacity values need to be calculated with different combinations of capacities of different technologies

Methodologies such as those based on the Effective Load Carrying Capability (ELCC) metric can be effective in determining capacity credits for combinations of different technologies². **It would be necessary to start experimenting with other methods as noted above in year 2 or 3 of the RA exercise. The Commission could specify a trial period as part of section 9 of the draft regulations.**

In the interim period, it is critical that the RA studies are carried out as per the 'top net-load hours CC methodology' differentiated across solar vs non-solar hours as well as monsoon vs non-monsoon seasons. Additionally, the Central Electricity Authority, in its paper titled "Methodology for Capacity Credit of Generation Resource & Coincident Peak Requirement of Utilities Under Resource Adequacy Framework", recommended the adoption of the "Critical Days" methodology with a differentiation in solar and non-solar periods to determine the capacity credit of variable renewable energy source. Either of the two methodologies would better capture the dynamics of technologies like solar, wind and hydro as compared to the net load-based approach currently outlined in section 10 of the draft regulations.

Thus, we request the Commission to:

- Specify trial exercises to determine the capacity credit based on Effective Load Carrying Capability (ELCC) methodology in section 10 of the regulations, similar to regulation 23 of the draft regulations mandating the development of a grid resilience and disaster management plan.
- Utilise top net-load hours CC method differentiated across solar/non-solar hours and monsoon/non-monsoon seasons or "Critical days" methodologies to calculate capacity credits in section 10 of the draft regulations.

6. Planning Reserve Margin

Regulation 4.1(r) of the draft regulations define Planning Reserve Margin as ***"a percentage of the capacity over and above the State's coincident share in national peak demand as may be laid down by Authority or approved by the Commission from time to time for the purpose of generation resource planning."*** **[Emphasis added]** Additionally, regulation 11.2 stipulates that *"The PRM shall be as determined by the Authority or approved by the Commission, utilising reliability indices such as LOLP and NENS."*

The Planning Reserve Margin (PRM) of any system is determined by iterative capacity expansion models, followed by production cost simulations to verify the system meets the specified reliability standards with respect to LoLP and NENS. The National Generation Adequacy Plan issued by the Central Electricity Authority on March 2026, projected a PRM of 13% – 14% in FY 2035-36. However, it is important to note that this PRM was determined for the entire country, and is relevant for meeting the national coincident peak demand.

While requiring DISCOMs to plan power procurement towards ensuring adequate capacity to meet their share in the national peak demand is necessary, the PRM determined at the national level may or may not ensure reliability in supply for the State throughout the year. This is especially the case considering that ~25% of distribution licensee sales in Andhra Pradesh are to agricultural consumers whose demand is highly seasonal in nature. Such a sales mix could mean that the state of Andhra Pradesh might experience a higher peak demand at a different period as compared to the state's share in the national peak demand.

Therefore, while the distribution licensees should be required to plan their power procurement towards ensuring adequate capacity to meet both the state's share in national peak demand, they should also be mandated to undertake studies to ensure that state's demand is met at all times, including its own peak

² Application of ELCC in RA studies is explained in the paper titled "Capacity and Reliability Planning in the Era of Decarbonisation – Practical Application of Effective Load Carrying Capability in Resource Adequacy", available at <https://www.ethree.com/wp-content/uploads/2020/08/E3-Practical-Application-of-ELCC.pdf>

demand, after taking into consideration capacity sharing that is possible at the national level through intra-DISCOM sharing and short-term and market purchases.

Thus, we request the Commission to:

- Revise regulation 4.1(r) as follows,
*“Planning Reserve Margin” or “PRM” means a percentage of the **available** capacity over and above ~~the State’s coincident share in national peak demand~~ **the peak demand** as may be laid down by Authority or approved by the Commission from time to time for the purpose of generation resource planning;”*
- Reflect this definition of PRM in the rest of the provisions of the resource adequacy regulations.

7. Resource Adequacy Requirement

The draft regulations do not currently define “Resource Adequacy Requirement” in section 4 of the draft regulations. It is important to include this definition, especially considering that the magnitude of penalties levied on the DISCOM are determined against compliance to its Resource Adequacy Requirement (RAR).

Additionally, there is a need to move away from focusing solely on the annual peak demand. Instead, emphasis should also be placed on peak and net peak during morning and evening shoulder periods. This is necessitated by the growing penetration of renewable energy, the changing role of coal, and the increasing need for ramping, so that power procurement can be better informed. Further, demand patterns can change significantly across seasons – therefore, these values should be captured seasonally to optimise power procurement. The Central Electricity Authority, in its paper titled “Methodology for Capacity Credit of Generation Resource & Coincident Peak Requirement of Utilities Under Resource Adequacy Framework”, also recommends that distribution utilities ensure adequate generation capacity during both the solar and non-solar peak demand. Verifying compliance to the RAR at multiple instances as mentioned above would ensure that the DISCOM undertakes the necessary procurement to ensure reliable supply at all times throughout the year.

Thus, we request the Commission to,

- Include the definition of “Resource Adequacy Requirement” in section 4 of the draft regulations.
- Verify compliance to the resource adequacy requirement during multiple periods like solar vs non-solar hours and monsoon vs non-monsoon.

8. Mechanism of power procurement

The draft regulations require distribution licensees to carry out 10-year (LT) resource adequacy studies on a rolling basis. However, given the uncertainty over this time period, the Commission should only approve power procurement for the short-term and medium-term basis. This would ensure that the distribution licensee contract the necessary capacity to ensure reliability on a medium-term horizon while avoiding resource lock-in and the risk of stranded assets in the long-term.

This is also reflected in the regulation 12.16 and 12.17 of the draft regulations, wherein distribution licensees are required to demonstrate 100% and 90% tie up for the first and second year respectively, and subsequently formulate a plan to meet their resource adequacy requirement for year three to year five. To aid the systematic contracting of the additional generation capacity, the Commission can require the distribution licensees to create and publish an annual bidding calendar in line with the approved medium-term power procurement plan.

Additionally, regulation 14.7 and 14.8 of the draft regulations require distribution licensees to contract renewable energy and storage via competitive bidding processes as notified by the Ministry of Power. This is welcome requirement, ensuring the consumers are not burdened with sub-optimal or excessive power procurement costs.

However, it is important to note the source-wise generation capacity results of any RA study are directly impacted by the capital expenditure and variable cost assumptions considered as part of the model. Given the fast-paced nature of the changes happening in the sector, and global economic uncertainties, these assumptions might not be reflective of the actual prices realised via competitive bidding. Therefore, the Commission can consider requiring an upper limit/cap on the prices realised for each technology in line with the assumptions considered in the RA study, as part of the tender issued by the DISCOM. In addition to this, the Commission can require the distribution licensees to issue technology agnostic tenders when contracting Round the Clock and energy storage, ensuring the discovery of the most cost optimal price.

Thus, we request the Commission to,

- Require distribution licensees to create and public an annual bidding calendar in line with the approved medium-term power procurement plan to contract the additional generation capacity.
- Add the following proviso to regulation 17.1 as follows,

“Provided that any new capacity arrangement/tie-up shall be carried out in line with the short-term and medium-term distribution resource adequacy plan as approved by the Commission.”
- Revise regulation 14.7 as follows,

*“Power procurement from Wind, Solar PV, Wind-Solar Hybrid, FDRE, and Round-the-Clock (RTC) generation sources shall be carried out as per the guidelines for the tariff-based competitive bidding process notified by the Ministry of Power **at a price cap as determined by the Commission in line with the assumptions considered in the approved resource adequacy plan. Options of issuing technology-agnostic tenders will also be explored when contracting Round the Clock (RTC) power.**”*
- Revise regulation 14.8 as follows,

*“~~The Distribution Licensee shall contract storage capacity corresponding to the results of the LT-DRAP capacity addition requirement for future years~~ **the approved resource adequacy plan** from the BESS, the PSP, or any other storage technology as per the guidelines for tariff-based competitive bidding process notified by the Ministry of Power **at a price cap as determined by the Commission in line with the assumptions considered in the approved resource adequacy plan. Options of issuing technology-agnostic tenders will also be explored when contracting energy storage.***

Provided that, if the Licensee proposes to contract storage capacity from the BESS or the PSPs developed and owned by the Government-owned (Government of Andhra Pradesh/ Government of India) generating companies by a process other than that specified by the Competitive Bidding Guidelines, the Licensee shall take prior approval of the Commission with proper justification.”

9. Nature of contracts considered for compliance to the Resource Adequacy Requirement

Regulation 14.10 read with regulation 12.9 of the draft regulations permits distribution licensees to meet their RA requirement by contracting Short-term and Medium-term power through the DEEP and PUSHp portal. It also allows DISCOMs to procure power on OTC Platform with prior approval from the Commission.

However, OTC Platforms only facilitate buyers and sellers to execute contracts without taking counterparty risk or credit risk. This, coupled with the absence of transparent price discovery mechanisms on OTC platforms, put distribution licensees at risk of contracting expensive power without the guarantee of delivery.

Power exchanges take counter party risk ensuring higher certainty in delivery of power and offer transparent price discovery mechanisms. All three exchanges (IEX, PXIL, HPX) in the country have offered monthly, weekly or daily contracts which can be signed upto 3 months (90 days) in advance since 2022 under the Term Ahead Market segment. Additionally, power exchanges are legally authorised to offer upto 11 month-ahead contracts with prior approval from the Central ERC.

Thus, we request the Commission to,

- Revise regulation 14.10 as follows,

"The Distribution Licensee may procure power on a short-term and Medium-term basis through the DEEP and PUSH portal and Term-Ahead Markets (TAM). ~~Further, the Distribution Licensee may procure power on a short-term basis through the OTC platform with the Commission's prior approval.~~"

10. RA studies and power procurement plans should be approved via a transparent public hearing process as part of the tariff regulatory process

Power procurement costs alone account for 70 – 80% of the distribution licensees expense and can have long-term implication on their financial viability and consumer tariffs. Therefore, it is critical that state-level stakeholders have the opportunity to comment on the assumptions, modelling approaches and results of such an exercise via a transparent public hearing process.

Additionally, it is critical to ensure that the sales forecast, demand forecast, T&D loss trajectory, power purchase costs and all other assumptions considered as part of the RA process are consistent with those used as part of the regulatory process to determine retail supply tariff for distribution licensees. Moreover, the power procurement plan approved as part of the retail supply tariff process to determine the Annual Revenue Requirement should be based on the resource adequacy plan approved by the Commission.

Therefore, approving the resource adequacy plan as part of the annual regulatory process to approve retail supply tariff would ensure a streamlined process carried out via a public consultation process. Such a process has been carried out by the Maharashtra ERC wherein the medium-term resource adequacy plan for all the Maharashtra distribution licensees (MSEDCL, Tata Power (Distribution), AEML) was approved as part of the multi-year tariff process conducted in 2025. The RA regulations notified by the Telangana ERC in February 2026 also contain explicit provision to approve the state RA plans via a public process.

It would be beneficial to discuss the resource adequacy plans in jointly convened quarterly meetings of the State Advisory Committee (SAC) and the Coordination Forum (CF) with participation from "Special invitees" prior to the commencement of the public consultation process. Such discussions would offer the Commission and key stakeholders in Andhra Pradesh to discuss the various assumptions and scenarios considered as part of the RA study.

Given the nascent and onerous nature of the resource adequacy studies, undertaking a Technical Validation Session (TVS) would offer the Commission an opportunity to validate and verify the robustness of the demand estimates and RA studies. Empanelling researchers and civil society organisation with some expertise as part of the TVS would extend legitimacy to the process, thereby ensuring broad buy-in to the plan. For this, the ERC could set up a panel similar to the manner in which Consumer Representatives or State Advisory Committee members are nominated.

The discussions from the SAC and CF meetings, and the data gaps, deficiencies in the methodology identified as part the TVS process should form a part of the final resource adequacy report that is made available as part of the annual tariff process for public comments.

Thus, we request the Commission to,

- Approve the generation resource adequacy plan as part of the annual regulatory process to approve retail tariff supply.
- Approve the distribution and transmission resource adequacy plans as part of the Multi-year tariff processes to approve transmission and distribution tariffs.
- Ensure that the demand forecasts, sales forecasts, power purchase costs, T&D loss trajectory and all assumptions used as part of the RA process are consistent with those used for the approval the Distribution Licensee annual revenue requirement.

- Present the draft Resource Adequacy plans in the SAC/CF meeting before seeking public comments
- Consider empanelling researchers and civil society organisation to participate as part of the technical validation sessions
- Outline separate timelines for the first year of the resource adequacy regulations following the notification of the regulations in the official gazette. Such a process was followed by the Maharashtra ERC, whose notified timelines can be found here - <https://merc.gov.in/wp-content/uploads/2024/06/Notifcation-Timelines-for-submission-of-RA-Plans.pdf>

11. Penalty provision

Section 19 of the draft regulations does not notify any explicit penalty provisions for non-compliance to the RA requirement by the DISCOMs.

We acknowledge that RA is new concept for the Indian power sector and RA studies are rather complex and time consuming to undertake. Therefore, there needs to be an initial period during which these methods are fine-tuned and capacity building of the various institutions involved is undertaken. In this context, it is imperative that there be a trial period of a few years (1-2) for the RA framework specified by CEA guidelines, IEGC and the Commission. RA targets should not be binding during this trial period and penalties should not be imposed for non-compliance with specified RA targets during this period. Without such a cautious approach followed by serious public deliberations on the results of the various studies, RA requirements may not result in cost-optimal investments, and instead may result in long term, base-load contracting with associated inefficient resource lock-ins.

However, towards ensuring that the DISCOMs adhere to the RA framework during this trial period of 1 – 2 years, the Commission can instead consider levying penalties for not adhering to various processes and timelines as proposed in the draft regulations. These would include:

- a) Timely collation, sharing and publishing of various input data sets (incl. data as suggested in all Annexure data formats) and projections.
- b) Scientific demand assessment for Short Term (ST), Medium Term (MT) and Long Term (LT) specifically with a bottom-up analyses for several scenarios for LT.
- c) Conducting capacity expansion and production cost simulations for ST, MT and LT and publishing the studies along with the input data for consultation and public comments.
- d) Setting up of dedicated RA cells and market cells with adequate and appropriately skilled staff in line with section 25 of the draft regulations.

As of March 2026, 20 State/Joint ERCs have notified resource adequacy regulations. Of these, 7 ERCs (Assam, Jharkhand, Karnataka, Maharashtra, Mizoram, Tamil Nadu and Tripura) have notified explicit penalties equivalent to 1.1 times the Marginal Capacity Charge (Rs./kW/month) or 1.25 times the Average Capacity Charge (Rs./kW/month) whichever is higher.

To put this non-compliance charge in context, as per data submitted by the Andhra Pradesh DISCOMs as part of the true-up process for FY 2023-24, the Marginal Capacity Charge was Rs. 1,392/kW/month (or Rs. 13.91 lakh/MW/month) and the Average Capacity Charge was Rs. 616/kW/month (or Rs. 6.16 lakh/MW/month). 1.1 times the marginal charge would have been Rs. 1531/kW/month and 1.25 times the average capacity would have been Rs 770/kW/month. Thus, the noncompliance would be the higher of the two, at Rs 1531/kW/month.

For context, the recent winning bid of Rs 280/kW/month (Rs. 2.8 Lakh/MW/month) for the 6th BESS tender issued by GUVNL with a capacity of 500 MW/1000 MWh (2 cycles/day, i.e., 2000 MWh or 4 hours/day, No Viability Gap Funding), the proposed penalty would be 5.5 times the BESS winning bid. Given the increasing penetration of renewable energy, coupled with the increasing competitiveness of BESS,

consideration of energy storage has become a critical aspect of the supply mix to ensure resource adequacy.

The Assam ERC, in its RA regulations, has introduced a trial period of 1 year, and has proposed to levy penalties in graded manner after the trial period as shown in table 1 below. The Tripura ERC has also adopted a similar framework in its RA regulations. This ensures that DISCOMs have a trial period to test and carry out RA exercises without financial implications but are held accountable for non-compliance after the trial period in a graded manner. The Commission can consider adopting a similar penalty framework.

Table 1: Graded penalty as adopted by the Assam ERC in its resource adequacy regulations.

Year	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
% Of Penalty	0%	25%	50%	75%	100%

Note: The regulations came into force from 1st April 2025 and were applicable from FY 2025-26 onwards.

Source: [Assam ERC \(Framework for Resource Adequacy\) Regulations, 2024](#)

Regulation 19.2 of the draft regulations stipulates that the Commission may provide performance-based incentives to the DISCOMs for “verifiable improvement in system reliability (e.g., achieving LOLP/NENS levels significantly better than the prescribed standard); achieve demonstrable, prudently managed cost savings for consumers through optimised long-term procurement and effective capacity sharing; and successfully integrate high volumes of variable renewable energy without compromising system security or reliability.”

However, it is important to note that system reliability, savings in power procurement costs and RE integration are reliant on actions of multiple entities across the electricity value chain. These actions cover, but are not limited to:

- The flexible operation of contracted thermal power plant by generating companies.
- The timely commissioning of transmission infrastructure and generation infrastructure including energy storage.
- The reliability supply of coal within permissible coal quality grades etc

These aspects are often outside the control of the DISCOMs and require coordination across multiple entities. Given this, the Commission must take a considered view after deliberations with key stakeholders in the state prior to the introduction of any performance-based incentives.

Thus, we request the Commission to:

- Revise regulation 19.1 as follows:

“19.1. Distribution Licensees shall comply with the RA requirement in accordance with the timelines specified under Clause 21 of this Regulation ~~In case of non-compliance, appropriate non-compliance charges, as may be determined by the Commission, shall apply.~~

Provided that any shortfall in compliance to Resource Adequacy requirement shall attract penalty for the financial year as follows:

FY27 – 0%

FY28 – 25%

FY29 – 50%

FY30 – 75%

FY31 – 100%

Provided that Distribution Licensee shall be subjected to reduction in Annual Revenue Requirement at the penalty rate per kW of shortfall in RA compliance for the financial year; Provided further that the penalty rate shall be equivalent to 1.1 times the Marginal Capacity Charge (Rs./kW/month) or 1.25 times the Average Capacity Charge (Rs./kW/month) whichever is higher, as approved by the Commission for the power procurement by the concerned distribution licensee under its ARR/Tariff Order for the relevant financial year, unless separately specified by the Commission;

Provided further that the distribution licensee shall not be allowed to recover such penalty in any manner including as part of its ARR in future financial years."

- Consider issuing penalties for non-compliance to the various timelines and processes as laid out in the draft regulations during the trial period (FY27).
- Take a considered view based on deliberations with key sector stakeholders prior to the introduction of any performance-based incentives.

12. Leveraging wider sector expertise in the country to finalise RA studies and power procurement plans

There is significant expertise on demand forecasting and capacity expansion & unit commitment/production cost simulations of the Indian/State power system within some Indian research groups and civil society organisations. These groups engage in various policy and regulatory processes and share their inputs and expertise in many forums. Hence, the various processes under the resource adequacy regulations (given the complexity of the studies) including transmission and distribution network plans should ideally include this set of stakeholders to bring in their expertise and experience.

Thus, we request the Commission to:

- Revise regulation 26.1 as follows:
*"The ~~Distribution Licensee shall prepare the RA Plan~~ **generation, transmission and distribution RA plans shall be prepared** in consultation with State Sector Generating Companies, Central Sector Generating Companies, Transmission Companies, National/Regional/State Load Despatch Centres, and the CEA. Furthermore, the Distribution Licensee must assess the likely availability of power and pricing across the country—covering peak, off-peak, and normal periods—by making enquiries with Trading Companies and States that have surplus power. The Distribution Licensee **and State Transmission utility/State Load Dispatch Centre may shall** also consult with research agencies possessing relevant experience.*

13. Need for enhanced transparency

The data that is mandated to be shared as per the regulations should also be made public in downloadable spreadsheet formats. Unless the input data used for RA studies is known, it is hard to interpret the results, reducing the possibility of critically engaging with the whole exercise, towards further improving it.

Further, each entity (DISCOMs, GENCOs, Transmission licensees, STU, SLDC etc.) should have a separate section on their website for RA studies and store/update data in downloadable spreadsheet formats since these decisions, especially power procurement, affect the public at large. Such transparency also enables various stakeholders to provide informed inputs and contribute constructively to the resource planning process. Without access to the relevant data, the results of the any study will only appear as a black box model which cannot be critically examined or replicated.

Prayas (Energy Group) has been conducting power sector modelling and our entire model for the Maharashtra's state-owned DISCOM (MSEDCL) along with public data is available in the public domain here (<https://github.com/prayas-energy/gridpath-mh>).

Thus, we request the Commission to

- Wherever, specific data/inputs are noted in the RA regulations and which are to be shared with relevant Central or State agencies for further analysis, the same should also be shared in the public domain. These would include but not be limited to,
 - a) Inputs to demand forecasting which are shared with the Andhra Pradesh SLDC (Regulation 20.1).
 - b) Actual demand forecast for each consumer category as per section 6 of the draft regulations.
 - c) Actual 10-year consumption profiles and demand for each consumer category shared with the Andhra Pradesh SLDC (Regulation 20.2 – 20.6)

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| <ul style="list-style-type: none">d) The existing and the contracted capacity along with their technical, financial characteristics and actual historical generation data as shared with the Andhra Pradesh SLDC (Regulation 20.7)e) Andhra Pradesh SLDC shall calculate state-specific CC factors considering the aggregate State Demand and State Net Load and contracted RE generation resources available in the State and shall submit such CC factor information to the Authority and NLDC and RLDC from time to time. (Regulation 20.8 – 20.9) |
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14. Comments on the Regulatory Formats

Annexure II of the draft Regulation gives 14 formats for data submission by different utilities. All these formats should be provided in Spreadsheet format. Comments/doubts on specific formats are given below.

- a) Format 1: Category/Sub-category-wise demand: Data is to be supplied for past “n” years and next 10 years. Please specify the value of “n” (in column heading), so that all licensees provide similar data. Basis for System Load Factor (item 16) forecast should be provided by the licensees. We suppose that these formats would be modified when additional DISCOMs are established.
- b) Format 2: Monthly Ex bus energy requirement for past n years and next 10 years: As mentioned in (a) above, “n” should be specified. The format gives monthly data for all three DISCOMs separately, but consolidated data for open access consumers. Open access data should also be given DISCOM-wise. We suppose that these formats would be modified when additional DISCOMs are established.
- c) Format 3 - Power supply projections summary and Format 5 – Peak hour supply summary: This is for the whole State, but a break-up of DISCOMs would be better. Data on previous “n” years should also be part of these formats, since RA plans are going to be an annual process.
- d) Formats F5, F6, F7 on Generation capacity: Past actual data for past “n” years should also be provided.
- e) Format 11 – on Thermal plant characteristics: This is very detailed and useful. Request similar customised formats for Hydro, Wind, Solar, PSP and BESS. For Hydro stations, monthly MU generation data to be provided. For RE stations, block-wise profile for past few years should be provided. Break-up of in-state and out of state should be provided. For Hybrid and FDRE plants, characteristics such as ToD slot-wise expected CUF should be provided.
- f) Formats 12,13, 14 (RPO, Demand-Supply deviation and Energy Availability: Request the provision of actual past data for “n” years.

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