Submitted to Rajasthan Electricity Regulatory Commission | March 2026

# Submission on Draft RERC (Framework for Resource Adequacy) Regulations, 2026


CENTRE FOR ENERGY, ENVIRONMENT & PEOPLE

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# 1. INTRODUCTION

Rajasthan Electricity Regulatory Commission (RERC) has issued the Draft (Framework for Resource Adequacy) Regulations, 2026, inviting public comments.

This submission is being made by the Centre for Energy, Environment & People, Jaipur (CEEP), with the objective of strengthening the proposed regulatory and procedural framework for Resource Adequacy in Rajasthan. The submissions are divided into the following sections:

i. General Comments
ii. Section-wise Comments

We request the Commission to accept this submission on record and give us an opportunity to submit our oral submissions during the public hearing process.

# 2. GENERAL COMMENTS

## 2.1. Transmission planning

Regulation 2 of the Draft states the objective as enabling the Resource Adequacy framework by outlining a mechanism for planning of generation and transmission resources. However, beyond this reference, transmission planning is not substantively addressed elsewhere in the Draft. In effect, the framework functions primarily as a generation planning and procurement mechanism. It is submitted that resource adequacy inherently requires coordinated planning of both generation and transmission.

Adequate transmission is essential to ensure that capacity is deliverable, prevent congestion, optimize system costs, and maintain reliability. Excluding transmission risks creating capacity that exists in principle but cannot be effectively utilized in practice. Incorporating transmission planning within the framework would establish a structured process with clear technical criteria and transparent procedures, enabling coordinated implementation by the relevant agencies. It would also allow for better accounting of network constraints and more accurate cost attribution, thereby ensuring that planning outcomes are realistic, reliable, and economically efficient

## 2.2. Data Transparency and Public Disclosure Requirements

The Draft provides certain provisions for collection and sharing of data; however, they lack the specificity required to ensure meaningful data availability, standardisation, and public transparency. Chapter 7, Regulation 19 of the Draft requires Discoms to maintain and share a list of data with the SLDC for demand assessment and forecasting. However, these obligations are limited to demand-related data shared only with the SLDC. The Draft does not specify any process for the collection, sharing, or public disclosure of critical inputs such as capacity credit factors, actual generation profiles, plant availability data of contracted generating stations, or the modelling inputs and assumptions used in preparing the LT-DRAP and MT-DRAP, including attributed costs of generation and storage technologies and their gestation periods. The Draft also do not prescribe standard templates for data submission by the Discoms. Additionally,

there are no provisions to ensure that data is made available in machine-readable and searchable formats such as spreadsheets.

We recommend that all data shared by entities under the obligations of these regulations should also be made publicly available. This should include all inputs to demand forecasting, actual consumer category-wise forecasts, and other relevant and critical assumptions, considerations, and inputs. It is further recommended to:

a. amend Regulation 21 to broaden the public disclosure mandate to include demand forecasts across all scenarios, capacity credit computations, plant availability data, resource gap analyses, and the modelling inputs and assumptions underlying each DISCOM's LT-DRAP and MT-DRAP;
b. prescribe standardised data templates as an annexure to these Regulations, clearly specifying the format, granularity, and periodicity of data to be submitted by DISCOMs, covering demand forecasts, generation resource characteristics, and resource adequacy modelling inputs; and
c. require that all data published under these Regulations be made available in machine-readable formats, specifically raw spreadsheets (.xlsx, .csv) or searchable PDFs, and treat submission of data in non-machine-readable formats as an incomplete filing.

### 2.3. Public Consultation and Engagement in Demand Assessment and RA Planning

Regulation 23 of the Draft regulations requires DISCOMs to prepare RA plans in consultation with state and central sector generating companies, transmission companies, and load dispatch centres. It also permits DISCOMs to consult research agencies. However, research organisations and civil society are mentioned only as optional participants, and there is no provision for public consultation on RA plans before their submission to the commission.

Resource Adequacy (RA) plans have direct and long-term implications for consumers. Given this impact om consumers and wider public, the preparation and approval of RA plans should not be treated as a purely technical exercise solely involving the utilities and regulators. Broader stakeholder engagement, including consumer groups, academic institutions, research organisations with expertise, and civil society must be ensured. This engagement and consultation should be a regulatory requirement rather than merely a permit, recognising the expertise available in Rajasthan's academic and research ecosystem.

We recommend that the Commission mandate

a. Publish white papers for public comments on methodologies for demand assessment & forecasting, generation resource planning, modelling for resource mix to meet RA requirement, and procurement planning.
b. Publish the draft LT-DRAP before its submission to the CEA
c. Public consultations on each of the crucial steps Discoms take in the process.
d. Include civil society organisations (CSOs), research institutions, and academic organisations in the consultation process.

The Regulations should further provide for a minimum comment period defined during which the white papers and LT-DRAP are made publicly available in appropriate machine-readable formats. Regulation 23 should be amended to mandate consultation with research organisations and civil society in the RA plan preparation process.

## 2.4. Building Institutional Capabilities of Utilities

The Draft places significant and complex RA planning obligations on utilities without adequately addressing the institutional capacity required for their effective implementation. In this context, the present submission outlines key gaps in the Draft Regulations, the critical linkage between RA planning and the energy trilemma, risks arising from inadequate internal capacity and potential outsourcing of core functions, and specific recommendations for strengthening the regulatory framework.

### 2.4.1. Deficiencies in the Draft Regulations

The Draft imposes extensive and technically complex planning obligations on Discoms and the SLDC, including the preparation of DRAPs, development of hourly demand forecasts across multiple scenarios, and computation of capacity credit, all within stringent timelines. These functions require specialised technical expertise and robust institutional capacity, which are presently limited within Rajasthan's utilities.

While Regulation 22.1 requires the establishment of a RA Planning Cell within three months, this provision is insufficient to ensure operational readiness. The Draft merely requires that such a cell possess "*requisite capability and tools*," without prescribing adequate measures relating to staffing levels, technical qualifications, domain expertise, or analytical/software infrastructure, and the funding of these activities and tools. In the absence of clearly defined benchmarks, the provision risks resulting in a nominal or compliance-driven institutional arrangement, rather than the development of substantive in-house capability. Given its centrality to long-term system planning, cost optimisation, and reliability management, RA planning must be treated as an integral and non-delegable function of the Discoms and SLDC, rather than a peripheral or compliance-oriented exercise.

### 2.4.2. Risks Arising from Limited Internal Capacity and Outsourcing

Given the complexity of RA planning and the absence of explicit recognition of RA planning as a core business function, there is a heightened risk that utilities may treat these obligations as compliance-driven and rely on external consultants for execution. Such an approach is inconsistent with the strategic importance of RA planning. Outsourcing of core RA functions, dilutes institutional accountability for critical planning decisions and impedes the development of in-house expertise. Further, RA planning is a continuous and iterative process that requires sustained internal ownership; it cannot be effectively substituted through periodic external engagements.

Excessive reliance on external agencies may also result in misalignment between planning outputs and the utilities' long-term operational and financial strategies, with adverse implications for energy security, sustainability, and affordability. Over time, this may weaken

the utilities' ability to independently undertake planning functions and respond to evolving system and regulatory requirements.

#### 2.4.3. Recommendations

In view of the above, it is respectfully submitted that the Commission may consider the following measures:

a. **Mandatory Capacity Building Plan:** Require Discoms to submit a detailed capacity building plan as part of the approval process, outlining specific steps to develop internal RA capabilities, including staffing, training, analytical tools, and data systems, with provision for periodic regulatory review;
b. **Restriction on Outsourcing of Core Functions:** Introduce an explicit provision mandating that core RA planning functions, including DRAP preparation and associated modelling and analysis, shall be undertaken exclusively by the Discom's internal RA Planning Cell and shall not be outsourced to external agencies;
c. **Dedicated Provision under ARR and Tariff Framework:** Create a separate expenditure head for RA capacity building under the ARR and tariff framework. Discoms should be required to budget for and report capacity building expenditures covering personnel, tools, training, and data infrastructure as part of their ARR filings, thereby enabling regulatory oversight and incentivising sustained investment in internal capability.

### 2.5. Adherence to commission's protocol on PPAs

Regulation 16 of the Draft requires prior approval of the Commission for any new capacity arrangement or tie-up, as well as for all new or amended long- and medium-term Power Purchase Agreements. However, it has been observed that this requirement is often not adhered to in practice, with the Commission being approached on a post-facto basis. In several instances, tendering and planning processes have progressed without explicit prior approval, and proposals are submitted only after key decisions have already been finalised, effectively reducing prior approval to a mere formality.

We therefore recommend that the Commission mandate that all applications seeking prior approval for new long- and medium-term PPAs under Regulation 16 be accompanied by a clear demonstration of alignment with the Discom's Commission-approved MT- and LT-DRAP. This should include justification of how the proposed procurement contributes to meeting the determined Resource Adequacy Requirement (RAR), along with evidence of compliance with the provisions of these regulations in a prudent and transparent manner.

## 3. SECTION-WISE COMMENTS

### 3.1. Trend Analysis/CAGR as a Demand Assessment and Forecasting Methodology

Chapter 3 of the Draft specifies the demand assessment and forecasting framework, permitting Discoms to adopt any one or a combination of five prescribed methodologies. While Regulation 6.8 requires Discoms to select the statistically best-fit methodology based on the lowest standard deviation and the highest R-squared value, the Draft does not establish

any oversight mechanism to ensure that this statistical selection criterion is actually applied in practice.

"*Trend Analysis/CAGR*" is the simplest of the five methodologies and the least demanding in terms of data requirements, technical capability, and institutional effort. It extrapolates historical growth rates forward without accounting for structural shifts in demand, sectoral and technological improvement, etc. A Discom that defaults to CAGR-based forecasting, while technically complying with the list of permitted methodologies, would fail to account for major and structural complexities and would produce forecasts that are inadequate for the purposes of long-term RA planning.

The Draft creates no accountability for this outcome. There is no requirement for Discoms to justify their methodology choice beyond a statistical fit test on historical data, no obligation on the Commission to scrutinise the appropriateness of the chosen methodology during plan approval, and no minimum standard that distinguishes between methodologies acceptable for short-term forecasting and those required for long-term RA planning.

We recommend that the Commission:

i. specify that for long and medium-term demand forecasting, standalone "*Trend Analysis/CAGR*" shall not be used, in the event it is allowed to be used, it must not be considered sufficient, and the Discoms must supplement "*Trend Analysis/CAGR*" with at least one other methodology that accounts for structural and temporal demand drivers;
ii. require Discoms to submit, as part of their LT-DRAP, a detailed methodology note justifying the forecasting approach adopted for each consumer category, including the statistical basis for methodology selection, the data inputs used, and a demonstration that the chosen methodology adequately captures the structural demand drivers relevant to that category over the planning horizon.

### 3.2. Losses Trajectory as per the Commission

Regulation 6.13 of the Draft requires Discoms to calculate energy forecasts within the State boundary by considering "*distribution losses and intra/inter-State transmission losses as per realistic loss trajectory proposed by Licensees*". The proviso to Regulation 6.13 further clarifies that for ARR estimation and true-up purposes, the AT&C loss trajectory specified by the Commission shall apply.

This drafting creates a material inconsistency. While tariff determination is based on Commission-approved loss trajectories, RA planning permits the use of self-proposed trajectories by Discoms. The absence of a uniform, Commission-approved benchmark for such a critical input undermines the credibility and consistency of the RA exercise.

Given that loss levels directly affect demand estimation and, consequently, capacity planning, any divergence in assumptions between RA planning and tariff determination may result in distorted projections. The use of **optimistic or non-standardised loss trajectories** for RA planning purposes can lead to underestimation or overestimation of demand. This creates

risks of over-procurement of capacity, risks of stranded assets and avoidable cost burdens or risks of under-procurement and potential load shedding.

It is therefore essential that a **stringent, realistic, and consistently applied loss trajectory** be utilised across both RA planning and tariff processes to ensure accuracy, accountability, and alignment in system planning. The Commission is therefore requested to amend Regulation 6.13 accordingly.

## 3.3. Capacity Credit Factor of all Resources

9.2 prescribes a detailed and methodologically robust net load-based approach for computing the capacity credit ("CC") of RE resources. This is a welcome step, as it appropriately evaluates resource contribution during system stress conditions rather than relying on simplistic averages. However, the Draft misses out on few crucial aspects of computation of CC.

### 3.3.1. Treatment of RE as a Homogeneous Category

The Draft treats RE as a homogeneous category. This is particularly problematic in the context of Rajasthan, where solar capacity significantly outweighs wind, and the two technologies have materially different generation profiles, variability patterns, and coincidence with peak demand. A uniform approach risks misrepresenting the actual contribution of each technology to system adequacy and may distort planning outcomes.

### 3.3.2. Inconsistent Treatment of Thermal and Hydro Resources

In contrast to RE, Regulation 9.4 prescribes only high-level principles for computing CC of thermal and hydro resources (*coal availability, forced outages, and water availability*) without any defined methodology. This creates an inconsistency in the framework.

The underlying principle applied to RE, that is assessing performance during peak or stress hours rather than entire year, should equally apply to thermal and hydro resources. Their dependable contribution to reliability is most meaningfully measured during peak demand periods, not as an annual average.

A thermal unit that is frequently unavailable during peak hours due to coal supply constraints or forced outages contributes less to resource adequacy than its installed capacity or average annual availability would suggest. This concern is directly relevant to Rajasthan's context. RVUNL, Rajasthan's state genco, operates an installed coal fleet of approximately 8,000 MW. RVUNL has submitted on record before this Commission that its units are frequently forced to operate at reduced availability due to inadequate coal quality and supply, and unplanned forced outages.

Additionally, there is a distinct absence of granular, publicly available data confirming that this capacity maintains its availability specifically during the State's peak demand hours. A generalised CC computation based on annual average availability adjusted for fuel constraints and forced outages without isolating performance during peak periods risks artificially inflating the dependable capacity of Rajasthan's thermal fleet, leading to an understated RAR and inadequate capacity contracting.

### 3.3.3. Absence of CC Methodology for Storage Technologies

The Draft does not prescribe any methodology for computing CC for storage technologies such as Battery Energy Storage Systems ("BESS") and Pumped Storage Projects ("PSP"), despite Regulation 13.8 mandating procurement of storage capacity under the LT-DRAP. This represents a significant gap, as storage plays a critical role in meeting peak demand and managing variability, and its contribution must be assessed through a clearly defined and consistent framework.

### 3.3.4. Recommendations

It is therefore respectfully submitted that the Commission may consider the following:

a. **Disaggregated RE treatment:** Refine the CC framework to distinguish between different RE technologies, particularly solar and wind, to reflect their distinct operational characteristics and contribution to peak demand;
b. **Uniform stress-hour methodology for thermal & hydro:** Amend Regulation 9.4 to require that CC for thermal and hydro resources be computed based on availability during identified peak or stress hours (e.g., top load hours), ensuring methodological consistency across all resource types;
c. **Inclusion of storage methodology:** Insert a dedicated provision prescribing the methodology for computation of CC for storage technologies, including BESS and PSP, aligned with their operational role in supporting peak demand and system reliability.

## 3.4. Methodology for Discom-wise Peak Demand Allocation

Regulation 11.7 of the Draft requires SLDC to allocate each Discoms share in the national peak within 15 days of the publication of the LT-NRAP. But no methodology is prescribed for determining this allocation, leaving it entirely to SLDC's discretion. Given that the RAR of each Discom flows directly from this allocation and consequently determines its contracting obligations, PPA approvals, and compliance status, the absence of a transparent, rule-based allocation methodology is a material gap.

The Commission may consider referring to Resource Adequacy Regulations, 2024 prepared by Maharashtra Electricity Regulatory Commission (MERC) for the methodology. MERC's draft specifies that each Discom's share shall be determined based on average of its percentage share in the State Coincident Peak Demand and its percentage share in the State Non-Coincident Peak Demand.

We therefore recommend that the Commission adopt a similar approach, taking into account each Discom's share during:

a. the hours of the State's coincident contribution to the National Peak Demand, and
b. the State Non-Coincident Peak Demand

Notably, the Draft currently does not provide for computing each Discom's share in the State Non-Coincident Peak Demand. We recommend that SLDC, in addition to calculating each Discom's share in the State's coincident contribution to the National Peak, also compute and

publish each Discom's share in the State Non-Coincident Peak Demand to ensure transparency, consistency, and fairness in RAR allocation.

### 3.5. Over-Reliance on Long-Term and Medium-Term Contracts

Regulation 11.9 of the Draft mandates that the Distribution Licensee shall maintain the share of long-term contracts within the range of 75 to 80 percent of the Resource Adequacy Requirement, alongside medium-term contracts comprising 10 to 20 percent of the requirement. Consequently, the framework mathematically dictates that between 85 and 100 percent of the total capacity obligation must be satisfied through rigid long-term and medium-term agreements.

This stringent fixation on legacy contractual structures directly contravenes the prevailing national policy trajectory which emphasises on power exchanges and a transition towards a more flexible, market-driven procurement framework, which anticipates a future with reduced reliance on 25-year long-term PPAs.

Mandating near-100% LT/MT PPAs risks locking Discoms into long-term contracts and limits their ability to optimise the generation mix or adjust procurement in response to evolving system conditions, renewable integration, or market developments. Such inflexibility may hinder the efficient utilisation of resources, increase costs, and constrain the Discoms' ability to respond to a rapidly changing energy landscape.

We therefore recommend that the Commission revise this requirement to allow a meaningful portion of the RAR to be met through market-based instruments, including short-term contracts and power exchanges.

### 3.6. Reporting Obligation for Emergency Short-Term Procurement

Regulation 17.1(b) of the Draft permits Discoms to enter into short-term arrangements for power procurement without prior approval of the Commission when faced with emergency conditions. While this exemption is operationally necessary, the Draft imposes no post-facto reporting obligation on Discoms following such procurement.

In the absence of a reporting requirement, it is impossible to assess whether the exemption is being used appropriately or whether it is masking systematic procurement planning failures.

We recommend that the Commission amend Regulation 17.1(b) to require Discoms to submit details of any emergency short-term procurement undertaken without prior approval to the Commission within 30 days of such procurement, including the quantum procured, the source, the cost, and the circumstances necessitating the emergency arrangement.

### 3.7. Non-Compliance Charges — Absence of Rate and Recovery Framework

Regulation 18.1 of the Draft provides that in case of non-compliance with RA requirements, "*appropriate non-compliance charges as may be determined by the Commission shall be applicable*." While the principle of non-compliance charges is established, the Draft provides no rate, no formula, no entity responsible for levy and collection, and no clarity on whether

such charges are recoverable by Discoms through their ARR. Deferring all of this to a future determination with no timeline for that determination significantly weakens the enforceability of the Regulation from the outset.

We recommend the Commission to specify a rate or formula for non-compliance charges within the Regulations and explicitly bar recovery of such charges through the Discom's ARR, so that financial consequences of non-compliance are not ultimately passed on to consumers.

### 3.7.1. Trial Period for RA Compliance Before Penalty Enforcement

Regulation 18.1 of the Draft provides that non-compliance charges shall be applicable from the date these Regulations come into force, with no transitional provision. While enforcement is necessary for the long-term effectiveness of the framework, imposing penalties immediately upon commencement creates a significant risk of penalising Discoms not for wilful non-compliance but for the institutional and technical gaps that are inevitable in the first cycles of a new and complex planning obligation.

As we have submitted under the General Comments, Rajasthan's Discoms currently lack the trained personnel, data infrastructure, and modelling tools required to execute the RA framework as prescribed. The first LT-DRAP cycle alone requires Discoms to prepare 10-year demand forecasts across multiple scenarios, compute capacity credit factors for each generation resource category, conduct resource gap analyses, submit plans to CEA for vetting, and obtain Commission approval, all being undertaken for the first time and within tight timelines. Penalising shortfalls during this initial period conflates capability gaps with non-compliance, and risks creating a deterrent effect that discourages Discoms from engaging seriously with the framework rather than incentivising them to build genuine capacity.

It is worth noting that MERC, in its RA Regulations, explicitly provided that the timelines specified in the Regulations shall be applicable from FY 2025-26, with FY 2024-25 timelines to be separately notified by the Commission, effectively building in a transitional year before full compliance obligations and associated consequences came into effect. A comparable transitional provision in RERC's Regulations would allow the framework to be operationalised in a structured and supportive manner before shifting to an enforcement regime.

We therefore recommend that the Commission:

a. provide a defined trial period of one to two years from the date these Regulations come into force, during which full non-compliance charges are not levied; and
b. use the trial period to assess the quality of Discom submissions, identify systemic gaps, and, where necessary, refine the regulatory requirements, including data templates, methodology standards, and timelines, before the enforcement regime is activated, so that penalties when applied are a consequence of wilful non-compliance rather than institutional unpreparedness.

### 3.8. Alignment of RA Timelines with MYT and ARR Filing Schedule

The compliance calendar under Regulation 20 of the Draft regulations runs through an April to March cycle, with the contracting of balance capacity shortfall required to be completed by 31st March of each year. While this aligns with the financial year, it creates a practical disconnect with regulatory filing schedule. Discoms are required to submit their ARR and true-up petitions to the Commission in November each year. Power purchase cost projections, which are directly dependent on each Discom's contracted capacity position, form a central component of these filings.

With the RA timeline concluding in March, Discoms will not have a finalised contracted capacity position at the time of their ARR submission in November, forcing them to rely on provisional or estimated procurement figures in their tariff filings. This undermines the consistency between RA planning and the MYT process that we have also submitted under the general comments.

We recommend that the Commission revisit the compliance calendar under Regulation 20 to front-load the key RA milestones, specifically the LT-DRAP approval and contracted capacity submission, so that Discoms have a Commission-approved RA plan and a substantially contracted capacity position in place before their ARR and true-up petitions are filed in November, ensuring consistency between the two regulatory processes.