Submission before the Rajasthan Electricity Regulatory Commission

Prayas (Energy Group) *March 24, 2025*

In the matter of: Petition under Section 86(1) (b) and other applicable provisions of the Electricity Act, 2003 for seeking approval for procurement of 3200 (4*800) MW power for 25 years through competitive bidding process based on Model Bidding documents viz. RFQ, RFP and PSA issued under MoP, GoI Guidelines dated 06.03.2019 and amendments thereon for procurement of Electricity from Thermal Power Stations to be set up on Design, Build, Finance, own & Operate basis and sourcing fuel including allocation of coal under B(iv) of Shakti.

Rajasthan Urja Vikas & IT Services Limited (RUVITL) filed a petition seeking the approval of the Rajasthan Electricity Regulatory Commission (RERC or Commission) for the procurement of 3200 MW thermal power for 25 years through competitive bidding process. RUVITL, through its petition, has highlighted important matters such as furthering competition in power procurement, promoting localised solar solutions, and focusing on the state's developmental roadmap and priorities.

But the consideration of adding 3200 MW of RTC thermal power, locked in over 25 years – at a time when the power sector is seeing fast paced changes such as downward price trends in cleaner generation alternatives, increasing targets such as the Renewable Purchase Obligations, and national goals of reducing emissions– is not likely to be the most optimal or prudent option for the state. Prayas (Energy Group) has the following inputs towards ensuring that sector and consumer interests are safeguarded:

1. Unrealistic projection of peak demand

CEA prepared a Resource Adequacy Plan (RAP) for Rajasthan with inputs from RUVNL. The RAP arrives at a target of 20,532 MW of thermal capacity by FY32. With pipeline capacity in addition to currently operating capacity, a deficit of 3141 MW by FY32 has been claimed. This is the basis of RUVITL's proposal to purchase 3200 MW RTC thermal power.

To arrive at its recommendations, the RAP considers energy requirement based on the 20th Electric Power Survey (EPS), but considers peak demand based on RUVNL submissions. In both instances, it considers the higher of 20th EPS values or RUVNL submissions. Such a treatment is inconsistent, as it combines values from two different projections based on potentially different assumptions and methodologies. This results in unrealistic projections of demand, and thus, unreliable recommendations of capacity additions. The peak demand as considered in the RAP as compared to the peak demand considered in the 20th EPS and based on historic actuals is presented in Table 1.

Table 1. Peak Demand profile FY24-FY32

Year	RAP Projection (Given by RVUNL)	20th EPS (Utilities Only)	FY24 Actual Peak Demand Projected at 5 year CAGR
FY24	18979	17906	18128
FY25	20284	18959	19243
FY26	21680	20030	20427
FY27	23172	21175	21684
FY28	24766	22358	23018
FY29	26470	23590	24434
FY30	28291	25048	25937
FY31	30237	26048	27533
FY32	32317	27032	29226
Difference from RAP in FY32		*5285*	*3091*

As seen above, the RAP considers a cumulative growth rate of 6.88% over the FY24-FY32 period, resulting in a peak demand of 32,317 MW in FY32. The 20th EPS, on the other hand, projects a lower peak demand of 27,032 MW for the utility in FY32, at a cumulative growth rate of 5.28% over FY24 to FY32.

If the actual growth rate of peak demand in Rajasthan over the FY19-FY24 is considered (6.15%), the peak demand for the state in FY32 is 29,226 MW. This is over 3000 MW lower than the consideration in the RAP, calling to question the need for the 3200 MW capacity being considered for tendering.

Even if the peak demand of 32,317 MW in FY32 as projected in the RAP is considered, the procurement of the proposed 3200 MW to meet this peak demand is questionable. According to the RAP, Rajasthan would have procured 22,132 MW of solar and 1157 MW of nuclear, in addition to the 17,391 MW of contracted coal capacity as per the petition. This is more than enough capacity to meet even a peak demand of 32,317 MW, which occurs during the daytime as per the RAP.

Moreover, the RAP does not discuss the duration of peak demand, which is a necessary parameter towards ascertaining the nature of capacity required to address it. Given the emergence of competitive firm and dispatchable RE options, as discussed in section 3 of this submission, RTC coal capacity is not likely to be suitable to meet such demand.

The energy requirement adopted in the RAP, as per the 20th EPS, also considers a higher T&D loss percentage than that allowed by the Commission for FY25. The Commission should ensure T&D loss trajectories in line with its recommendations are adopted towards appropriate estimation of energy requirement.

2. No assessment of net demand

Given the ongoing energy transition and the increasing share of RE capacity, the role and demand of coal-based generation is changing. Solar capacity is increasingly being deployed to meet daytime demand, shifting the demand for coal-based power to the evening/non-solar hours.

Seasonal variations further compound the complexity of demand evaluation. Moreover, in Rajasthan as well as the rest of India, peak demand has shifted to the day time hours when solar is available.

To effectively assess the demand for coal-based generation, net demand (total demand less demand met by RE) must be evaluated. The RAP and the petition, however, are based on total demand and peak load, the bulk of which would be met by solar. As seen in section 5.4 of the RAP, there is a significant pattern of surplus capacities across the day and the year. This further highlights the need for assessment of net demand for ascertaining coal-based capacity additions, which is absent in the RAP or the petition.

The proposal of adding 3,200 MW of coal-based capacity, based on assessment of total and peak demand, may result in locked-in resources and poorly utilised capacity, and should, thus, not be allowed without reasoned analysis and justification.

3. Growing share of RE

The RAP considers a RPO target 43.3% in FY30, and continues to assume the same till FY32. However, this is incongruent with the consideration of RPO in states like Uttar Pradesh and Maharashtra, where the RPO target is projected to increase to 49.5% by FY34. Further, as per RERC order 1939/2021, the Commission allowed the carry forward of 11,454 MU of RPO shortfall which had accrued between FY12 to FY20, which also has to be made up for by Rajasthan distribution licensees in the coming years. Additionally, the RAP also does not account for Energy Storage Obligations as notified by the Ministry of Power. Given this, the requirement of RE generation is likely to be more than that considered on the RAP. A more realistic evaluation of RE generation, in line with the state's requirements and targets, will reduce the deficit in demand projected to be met.

Moreover, with the increased penetration of storage options and their rapidly falling prices, RE (with storage) capacity can also be considered to meet non-solar peak demand. Recent load-following RE supply (FDRE) auctions have resulted in competitive prices (around Rs. 4.9/kWh) and with much shorter gestation periods. Therefore, locking into 25 years of RTC coal capacity from around 2029-2030 through the current petition is unlikely to be the best option for Rajasthan. Instead, with prices likely to fall further in the next 2-3 years, an FDRE or RTC-RE auction for the requisite capacity in, say, 2027 will comfortably meet the shortfall envisaged in 2029-30 without having to commit to 25 years of fixed costs for coal-based capacity that will be used increasingly sparingly going forward. Appropriate medium term contracting could be considered in the interim. Despite the utility undertaking medium-term power procurement in Rajasthan, the same has not been considered in the RAP.

Thus, the RTC thermal capacity addition recommended should be reviewed.

4. Project cost and timeline considerations

The RAP assumes a 4 year construction period for coal-based projects – indeed it expects the first unit to be commissioned withing 42 months (3.5 years). Such a timeline is nearly impossible and highly ambitious. For example, Yadadri Unit 2 and Bhusawal Unit 6, which were recently commissioned in January and February 2025, respectively, have been under construction for over

6 years. Thus, the proposed project of 3200 MW is likely to come online only after FY30, even if it were to be recommended for construction this year – and thus very unlikely to be able to serve the purpose for which this petition is being filed.

It is highly likely that alternative sources of RTC power such as FDRE and RE+storage projects will become increasingly viable and competitive within the next few years and form a cheaper, cleaner alternative with lower lock-ins, as discussed in section 3 of this submission. The tariffs discovered for such projects have been dropping significantly over the last few years, and most projects are planned to have supply commencing within 2 years of the effective date of the power purchase agreement. Even the RAP considers a declining trend for solar and battery projects over the medium term. These projects also have a much shorter gestation period. Given the emergence of viable alternatives, that are much better suited to the state's targets and goals, the proposed coal-based capacity addition of 3200 MW should not be allowed.

5. Scrutiny of tender documents

While the need for such capacity itself should be reviewed, the amended tender documents includes some positive measures. For instance, Clause 21.4.4. has been amended to delete the incentive for excess generation from coal-based generation. As highlighted in the rationale, this is indeed the right move, given the increasing role and integration of RE power. The clarification provided for Clause 22.3.1 is also a step in the right direction. It underscores the need for beneficiary consultation in use of alternate coal sources, given the impact of fuel prices on the utility and consumers. Towards ensuring that such capacity addition, if considered, happens in an accountable and reasoned manner, the following is proposed:

- Clause 1.1.1: In Clause 1.1.1 of the tender documents, the period of commencement of supply has been amended to 42-60 months, from the 36 months stipulated in the model guidelines. The rationale for such deviation is unclear. It should also be noted that the even the proposed timeline of 42 months is unrealistic, with most new thermal plants taking over 5-6 years to be commissioned. The Commission must ensure that proposed timelines are reasoned, and must hold the proponent to the stipulated timelines. Delay in commissioning has significant impacts on the planning and costs of all downstream stakeholders, and thus, must be stringently monitored and enforced.
- Clause 22.8.2: The tender documents are amended to avoid double penalty on account of non-availability in the event of fuel shortages on account of uncontrollable factors. To ensure accountability, and towards clarity, the tender documents must clearly state that no cost pass-throughs will be allowed if the fuel shortage occurs on account of controllable factors or lapses on the part of the project proponent.
- Clause 22.10.2: The penalty for non-approval of the additional FSA has been removed. However, procurement of alternate fuel, towards ensuring continued supply as required is the responsibility of the generator. The project proponent should be held accountable for the shortages on account of insufficient or improper fuel procurement, Thus this Clause, and the penalty on account of non-approval of AFSA, should be retained to ensure accountability from the generator.

In conclusion, the addition of 3200 MW of RTC coal-based power is not likely to be optimal or prudent for Rajasthan's power sector, and should thus not be allowed without reasoned analysis and justification.

We request the Commission to take our submission on record, and allow us to make any additional submissions on the matter, as needed.

Prayas (Energy Group)
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