BEFORE THE HIMACHAL PRADESH ELECTRICITY REGULATORY COMMISSION

Date of Order: 28.04.2025

CORAM: Sh. Devendra Kumar Sharma, Chairman
Sh. Yashwant Singh Chogal, Member (Law)
Sh. Shashi Kant Joshi, Member

In the matter of:

Himachal Pradesh Electricity Regulatory Commission (Resource Adequacy Framework)Regulations, 2025

ORDER

India has witnessed the fastest economic growth in the past few years and has become the fifth largest economy in the world and poised to become the third largest economy by the year 2030 or even earlier, which essentially requires addition of electricity power generation capacity, being key to this growth, at a pace matching or slightly ahead of the growth in demand of power, so that the shortage of electricity does not slow down the pace of this growth. The Resource Adequacy Planning is designed to ensure this by timely adding to the adequate generation capacity to match the projected demand and supply reliable electricity 24x7 by judicious mix of long term, medium term and short term contracts of energy at a least cost (without over reliance on the electricity market)

and combat climate change, as a part of Nationally Determined Contributions (NDCs);

Therefore, keeping in view the above and in order to achieve the objectives of the Electricity Act, 2003 (36 of 2003) (hereinafter referred to as "the Act"), the Himachal Pradesh Electricity Regulatory Commission (hereinafter referred to as "the Commission") in exercise of the powers conferred under section 181 read with sections 61, 66 and 86 thereof and all other powers enabling it in this behalf, has notified the Draft Himachal Pradesh Electricity Regulatory Commission (Framework for Resource Adequacy) Regulations, 2025 on 27th February 2025, as required by sub-section (3) of section 181 of the said Act and rule 3 of the Electricity (Procedure for Previous Publication) Rules, 2005. The same were also published in the Rajpatra, Himachal Pradesh on 03rd March 2025.

2. The Commission also invited public objections and suggestions by 03rd April, 2025 by way of insertions in two Daily Newspapers i.e. "The Tribune" and "Dainik Bhaskar" dated 23rd March 2025. The full text of the Draft Regulations was also made available on the Commission's website: www.hperc.org.

3. The Commission vide letter dated 25th March 2025, requested the major stakeholders including the Industries Associations, the State Government, the Directorate of Energy,

the HIMURJA, the HPPTCL, the HPSLDC, the Consumer Representative and the Distribution Licensee to send their objections/suggestions as per the aforesaid public notice, on or before 03rd April, 2025.

4. A public hearing in the matter which was scheduled to be held on 9th April 2025 from 11:00 A.M. onwards, was rescheduled for 10th April 2025 from 11:00 A.M onwards in the Commission. The Public Notice in this regard was published in the Newspaper viz. "Times of India" and "Amar Ujala" on 03rd April 2025. The Commission vide letter dated 4th April 2025 also informed the major stakeholders to furnish their comments and attend the hearing on the stipulated date and time.

5. The following stakeholders have filed their written submissions:

(i) The Indian Energy Exchange;
(ii) GNA Energy Private Limited;
(iii) The Himachal Pradesh State Electricity Board Limited; and
(iv) Centre for energy Regulation (CER) and Energy Analytics Lab (EAL).

6. The public hearing in the matter was held on 10th April, 2025, as scheduled. List of the participants who attended the public hearing is annexed as **"Annexure-'A'**.

7. During the public hearing, the representatives of the Himachal Pradesh State Electricity Board Limited (HPSEBL for short) remained present and have presented their views.

8. The Commission has carefully examined and analysed the written suggestions/objections and the view points expressed by the HPSEBL during the public hearing. The analysis and views of the Commission are as under:-

(A) Comments on Regulation 5.5 of the Draft Regulations:

Stakeholders Comments:

Centre for energy Regulation (CER) and Energy Analytics Lab (EAL) has submitted that the Demand Assessment and Forecasting, as proposed in Clause 5.5 states that *"The distribution licensee shall determine the energy forecast for a consumer category by adopting any of the following methodologies and/or combination thereof:- (a) Trend Analysis i.e., Year on Year/Compounded Annual Growth Rate (CAGR) for past period and time series analysis; (b) End Use or Partial End Use method; (c) Auto-Regressive Integrated Moving Average (ARIMA); (d) AI including machine learning, ANN techniques; and (e) Econometric Modelling (specifying the parameters used, algorithm, and source of data)".*

It is also suggested that the Regulations should not be limited only to the currently adopted demand forecasting methodologies. Rather, the accuracy of demand forecasting

being critical constraint in effective power planning and resource allocation, the Regulations should provide for hybrid of methodologies and also provide room for any new methodological approach that may emerge in the future.

Additionally, periodic validation and refinement of forecasting models using real-time data and emerging trends in electricity consumption will help enhance reliability. Further, collaboration with research institutions, power utilities, and industry experts can further support the development of more precise and adaptive forecasting methodologies.

Commission's Views:

The Commission has considered the suggestions carefully and is of the belief that the Demand Assessment and Forecasting is a critical and continuous process and therefore, the method used for assessment and forecasting should not be restrictive. To enhance the reliability, there should be hybrid approach to access the demand and forecasting continuously. Therefore, the Commission agrees with the suggestion of the stakeholders and decides to insert a proviso belowRegulation 5.5 as under:-

"Provided that Discom shall make an endeavour to periodically validate and refine the forecasting models using real-time data and emerging trends in electricity consumption; and, also make use of/ develop new emerging methodologies for Demand Assessment and Forecasting."

(B).Comments on Regulation 5.9 of the Draft Regulations:

Stakeholders Comments:

Centre for energy Regulation (CER) and Energy Analytics Lab (EAL) has suggested that the Commission should allow flexibility to the distribution licensees to modify load/energy forecasts for different consumer categories in the load/energy forecasting methodologies, instead of prescribing specific methods. The Commission may provide broad guidelines while enabling licensees to adopt suitable approaches based on the impact of various factors such as economic parameters, policies, historical data, and future projections. This flexibility will allow for the incorporation of advanced forecasting techniques, sector-specific variations, and emerging trends, ultimately leading to more accurate and dynamic demand estimation.

Commission's Views:

On careful consideration of the suggestions, the Commission is of the view that sufficient provision has been made in sub regulation (5) of Regulation 5 of the proposed Regulations especially in sub regulation (9) of this Regulation for the Discom to utilise advanced forecasting techniques for making sector-specific variations based on emerging trends for arriving at more accurate and dynamic demand estimation. Therefore, the Commission considers it appropriate to retain the provisions of sub regulation (9) of Regulation 5 of the Draft Regulations without any modification.

(C) Comments on sub regulation 2(f) of Regulation 8 of the Draft Regulations:

Stakeholders Comments:

Centre for energy Regulation (CER) and Energy Analytics Lab (EAL) have stated that the Capacity Credit Factor Method for Variable Renewable Energy (VRE), the proposed clause 8(2)(f) states that "Resultant CC factor is (Total Generation for top load 250 hours)/(Installed supply RE Capacity for top load 250 hours), as per formula below:

CC factor = Sum of RE Generation in Top x hours/Sum of RE Capacity in Top x hours"

It has been suggested that choice of top x hours of demand (250 hours, as proposed in the above clause) should be based on analysis of peak demand data. A larger value of 'x' would include RE generation across wider set of hours, thus reducing the reliability of the capacity factor. In contrast, a smaller value of 'x' would be aligned to a lower value of LOLP and NENS (discussed later). The choice of 'x' hours should thus be in consonance with the target value for LOLP and NENS. Furthermore, the above formula should consider lower of the availability and generation across time blocks (for the top x hours) for the numerator value. This would ensure that the due account is taken for the forecasting error, as lower RE availability in short-run would lead the Discom to make procurement of ST power.

Commission's Views:

On careful consideration of the suggestions, it is necessary to highlight that for determination of CC (Capacity Credit) factor for generation resources, the Net Load Base approach is adopted, which takes into consideration, the load derived by excluding the renewable generation (MW) from gross load prevalent on the Grid during any time block. The Commission has carefully considered 250 hours after taking into consideration all factors for calculation of Capacity Credit factor. Therefore, the Commission is of the view that the proposed top 250 hours in the Draft Regulations reflects the true picture, therefore, the suggestion to this effect is of no consequence. The Commission, therefore considers it appropriate to retain the provisions of sub regulation (2) (f) of Regulation 8 of the Draft Regulations, without any modification.

(D) Comments on sub-regulations (10) and (15) of Regulation 10 of the Draft Regulations:

Stakeholders Comments:

(a) The Indian Energy Exchange (IEX) has submitted that the short-term market provides flexibility to the participants to procure power at an optimal rate for the near future. Further, owing to the steps being taken by the Government and the Hon'ble CERC, the Indian power market is expected to deepen in the coming years. The State Electricity

Regulatory Commissions (SERCs) of Haryana, Karnataka, Punjab and others States have fixed 10-15% of power procurement through short term markets in the notified Resource Adequacy Regulations. Therefore, for the States to utilize the short-term market optimally and to maximize its benefits, the RAR through short term requirements may be increased in line with other States. In view of the above submissions, the IEX has proposed to consider changes in the Regulation 10 (10) of the Draft Regulation as under:

> *"The distribution licensee is suggested to keep the share of Long-term contracts in the range of 75-85% of the RAR and Medium–term contracts in the range of 10%-15% of the RAR while the rest to be met through Short-term contracts not more than 15% of RAR".*

(b) The HPSEBL has suggested to keep the share of Long-term contracts in the range of more than 75% of the RAR and Medium-term contracts in the range of 10%-15% of the RAR while rest to be met through Short-Term contracts not more than 15% of RAR, and further submitted that power procurement through Day-Ahead Market (DAM), should not be considered towards the RAR.

(c) CER & EAL has suggested that Power exchange provides a variety of products of varying maturity for power procurement. While near-term products like RTM and DAM may not be able to provide certainty of availability of power

required in advance, some of the Term Ahead Market (TAM) products offer a choice of procurement up to 3 months in advance (which may likely be enhanced further). The RA framework allows for ST products, which are to be procured by a Discom, either in a previous year or within a year. Inclusion of some of the TAM products towards RA of a Discom may thus also be permitted. In the light of the above argument presented in the previous para, the clause may specifically provide for exclusion of DAM and RTM and other similar low maturity products, which do not offer certainty of procurement in advance. Therefore, depending on liquidity of some of the TAM products, advance procurement of at least for the first six months of the following year (which are generally high demand months) may be feasible. Given that T-GNA is available up to a period of 11 months, at the time of submission of Resource Adequacy plan in Sep/Oct, the Discom may be in a position to procure some of its requirements through such market products.

(d) CER & EAL has further stated that in the proposed Regulation 10(15) that "*The distribution licensee shall also demonstrate to the Commission 100% tie-up for the first year and a minimum 90% tie-up for the second year to meet the requirement of their contribution towards meeting national peak. Only resources with long/medium/short- term contracts shall be considered to contribute to the RAR*".

It is suggested that the Commission may consider that gestation period for setting up new capacity is long, 100% tie-up of capacity may not be feasible for the first few years of its implementation. A graduated approach for the capacity adequacy requirement to the extent of 95%, 98% and 100 % be applied for the first three years respectively (to be applicable for the first year post notification of the Regulations may be adopted. Rush for 100% capacity requirement may force the Discom to enter into sub-optimal short/medium-term contracts. It is proposed that the rollout of the RA plan should have sufficient time for the utilities to ensure compliance for the first year of implementation, to the least. This further highlights the importance of demand response, which would have relatively much shorter gestation period.

Commission's Views:

The Commission has carefully considered the above suggestions and is of the view that higher quantum of tied up power on long term basis shall provide energy availability security to the consumers of the State and the Distribution Licensee, and also bring certainty and reasonability in the power procurement cost. The CEA framework talks about tying up of 75% to 80% of total supply from long term sources. The modal CERC Regulations also provide for tying up of atleast 75% of demand from long term contracts. Therefore, in consideration of the parameters specific to the State and the

interest of the consumers and the licensee, the Commission is of the considered view that the licensee must endeavour to keep the share of long term contracts to be more than 85%. Further as far as the suggestion to adopt a graduated approach for the capacity adequacy requirement to the extent of 95%, 98% and 100 % for the first three years respectively is concerned, the Commission feels that the proposed draft provision is exhaustive and finds no merit in modifying it. Further, the adequacy requirements are linked with the power tie-up contracts and the DISCOM has enough flexibility to enter into new contracts based on available capacity addition nationwide. It is also pertinent to mention here that the Resource Adequacy Plan is dynamic in nature and shall keep on changing based on the demand supply situation. In so far as the comments of CER & EAL that the near-term products like RTM and DAM may not be able to provide certainty of availability of power required in advance, and some of the Term Ahead Market (TAM) products offer a choice of procurement up to 3 months in advance (which may likely be enhanced further), may be included. The Commission is of the view that short term contracts of a period upto three months cannot be part of RAR.

Therefore, the Commission considers it appropriate to retain the provisions of sub regulations (10) and (15) of Regulation 10 of the Draft Regulations with slight

modifications of the proviso to sub regulation (10) of Regulation 10 and also proviso to sub regulation (3) of Regulation 12 as follows:-

"Provided that power procurement through Day Ahead Market (DAM) and Real Time Market (RTM) and other similar short duration contract, shall not be considered towards the contribution for meeting RAR."

(F) Comments on sub regulation (8) of Regulation 12 of the Draft Regulations:

Stakeholders Comments:

(a) GNA Energy Private Limited has submitted that the CERC-regulated platforms may be included as part of sub regulation (8) of Regulation 12 and suggested to re-draft the sub regulation (8) of Regulation 12 as under:

"Distribution licensee may procure power on Short-term and Medium-term basis through DEEP and PUShP portal, over the counter (OTC) or any other platform recognized and approved by the Central Electricity Regulatory Commission."

(b) CER & EAL have stated that the role of procurement through DEEP and PUShP portal would only be relevant if it has adequate horizon for procurement of power i.e. it should exclude any procurement to be undertaken for a period of less than 3 months in advance or for a minimum period to be specified by the Commission.

Commission's Views:

On careful analysis of suggestion, the the Commission is of the firm opinion that as per the CERC (Power Market) Regulations 2021, the OTC Platform cannot provide for price discovery and consequent execution of contract, as is done by the power exchange and the DEEP/PUShP Portal. Further, OTC platforms are also not recognised under the Short-Term Bidding Guidelines of Ministry of Power, so any power procurement and contract executed through such platforms shall not have legal sanctity. Therefore, the Commission considers it appropriate to retain the provisions of sub regulation (8) of Regulation 12 of the Draft Regulations, without any modification.

(G) Comments on sub regulation (1) of Regulation 13 Sub regulation (1) and (2) of Regulation 14 and Regulation 18 of the Draft Regulations:

Stakeholders Comments:

GNA Energy Private Limited has submitted that Over-the-Counter Platforms are well suited for this role, as they are digital platforms equipped with state-of-art software, have advanced data and analytics capabilities (including handling real-time data), and facilitate information exchange between stakeholders for buying/selling of power (both for intra-state and inter-state buyers and sellers), including providing surplus/deficit situations across India and within the State to

enable capacity sharing. OTC Platforms are regulated by the Central Electricity Regulatory Commission(CERC) and are also the data repository for the Indian Power Market as defined under the Power Market Regulations (PMR) 2021, thus, ensuring data security and confidentially. PMR also mandate OTC Platforms to enable the exchange of information between buyers and sellers. Distribution Licensee can use this information to monitor power surplus and deficit situations nationwide and within the State. Thus, OTC Platforms with advanced software capabilities may act as the central coordinating agency between Discoms, SLDC and HPERC for the successful implementation of RA in the State by providing a central platform for building, accessing, and maintaining/updating RA models, enabling continuous monitoring and tracking compliance/progress with the defined targets, and providing the necessary tools for optimizing procurement and capacity sharing. By leveraging the advantages of OTC platforms, the State can enhance its ability to meet energy demands while minimizing disruptions and promoting a more resilient power sector. The entire power supply delivery chain should be digitalized on a single digital platform/OTC Platform to bring transparency and ease of monitoring and compliance. They enable seamless information exchange between buyers and sellers, helping entities like Distribution Licensees monitor power availability. By acting as a central coordination point, OTC platforms can

support the successful implementation of Resource Adequacy (RA) in States, track compliance and optimize procurement. Digitalizing the entire power supply chain on a single OTC platform sector enhances transparency, simplifies monitoring and promotes a resilient power sector. Navigating to power exchanges requires a deep understanding of market dynamics and procurement strategies. Smaller companies or buyers may struggle with the complexity of forecasting, bidding and balancing supply from exchanges.

Commission's Views:

The Commission appreciates the views of the GNA Energy Private Limited and is of the view that Over the Counter (OTC) Platform is an electronic platform for exchange of information amongst the buyers and sellers of electricity and the objectives of the OTC Platform is to provide an electronic platform with the information of potential buyers and sellers of electricity to maintain a repository of data related to buyers and sellers and provide such historical data to Market Participants and to provide such services as advanced data analysis tools to Market Participants. Further, the OTC Platform is mandated not to engage in the negotiation, execution, clearance or settlement of the contracts and maintain neutrality without influencing the decision making of the Market Participants in any manner, hence cannot be part of the present Regulatory process. Therefore, the Commission considers it appropriate to retain the provisions

of sub regulation (1) of Regulation 13, sub regulations (1) and (2) of Regulation 14 and Regulation 18 of the Draft Regulations without any modification.

(H). Comments on Regulation 16(a) of the Draft Regulations:

Stakeholders Comments:

The Indian Energy Exchange (IEX) has suggested that any additional power procured on account of increased demand or shortfall in power supply or for the purpose of optimization must be through competitive route so as to safeguard the interest of the end consumers and distribution licensees. In line with the above, the IEX has proposed to edit clause 16(a) of the Draft Regulations as below:-

"(a) In case, where there has been an unanticipated increase in the demand for electricity or a shortfall or failure in the supply of electricity from any approved source of supply during the year or when the sourcing of power from existing tied-up sources becomes costlier than other available alternative sources, the distribution licensee may enter into additional agreement for procurement of power as per the extant guidelines for Short term power procurement."

Commission's Views:

The Commission is of the considered view that the Resource Adequacy Regulations take into consideration all the reasons cited by the IEX. The forecast for long term, medium term and short term demand of power is to be based on the historical trend of demand and other relevant factors, by application of scientific formulas in the software developed by the CEA.

Further, the forecasts/projections are duly approved by the CEA and the Commission. This coupled with the provision/(s) of regular on-going review of the long term, medium term and short term forecast and the tying up of power in the range of more than 85% for long term, in the range of 10% to 15% for medium term leaving a margin of 5% appears sufficient to cater to the uncertainties. Therefore, the Commission considers it appropriate to retain the provisions of Draft Regulation 16(a) without any modification.

(I). Comments on Regulation 16(b) of the Draft Regulations:

Stakeholders Comments:

GNA Energy Pvt. Limited has submitted that the Distribution Licensee may be allowed banking with other States through CERC-regulated platforms, such as OTC platforms. A Distribution Licensee may be permitted to engage in electricity banking with other States via platforms regulated by the Central Electricity Regulatory Commission (CERC)|, such as Over the Counter (OTC) platforms. These platforms enable exchange of electricity between States, allowing for the transfer of surplus power to be stored and used alter when needed. The CERC ensures that these transactions comply with regulatory standards, ensuring fairness, transparency, and efficiency in inter state power trading. In this regard, the following State Regulatory Commissions are already allowing utilities in their

respective States to use CERC-regulated OTC Platforms.

1. Assam Electricity Regulatory Commission (AERC) In its draft framework for Resource Adequacy Framework (06.09.2024)have allowed distribution licensees to contract power through OTC Platforms recognized and approved by CERC. A relevant extract has been provided below for ready reference:

   "Distribution Licensee may contact power through State Generating Stations/Central Generating Stations/ Independent Power Producers (IPPs)/Captive Power Plants (CPPs)/Renewable Power Plants including Co-Generation Plants/Central Agencies/State Agencies/Intermediaries/ Traders/Aggregators/Power Exchanges or through bilateral agreements/Banking arrangements with other Distribution licensee, over-the counter(OTC) or any other platform recognized and approved by the Central Electricity Regulatory Commission and any other sources as may be approved by the Commission under section 62 or section 63 of the Act in compliance with competitive bidding guidelines."

2. **Joint Electricity Regulatory Commission (Framework for Resource Adequacy) Regulations, 2024(Section 14 (7))**

   "The distribution licensee may contract power through State Generating Stations/Central Generating Stations/ Independent Power Producers (IPPs)/Captive Power Plants/ Central Agencies/State Agencies/Intermediaries/Traders/ Aggregators/Power Exchanges or through bilateral agreements/Banking arrangements with other distribution licensees, Over-the-counter(OTC) or any other platform recognized and approved by the Central Electricity

Regulatory Commission".

3. Maharashtra Electricity Regulatory Commission (Framework for Resource Adequacy) Regulations, 2024. (Section 14(7))

"14(7). The distribution licensee may contract power through State Generating Stations/Independent Power Producers (IPPs)/Captive Power Plants (CPPs)/Renewable Power Plants including Co-Generation Plants/Central Agencies/ State Agencies/Intermediaries/Traders/Aggregators/Power Exchanges or through bilateral agreements/Banking arrangements with other distribution licensees, Over-the–counter(OTC) or any other platform recognized and approved by the Central Electricity Regulatory Commission and any other sources as may be approved by the Commission under Section 62 or Section 63 of the Act in compliance with competitive bidding guidelines."

4. The OTC platforms allow the buyers/Sellers to tailor Power Purchase Agreements (PPAs) to meet their load requirements, pricing, and duration that align with their energy needs. This flexibility can ensure DISCOMs to secure energy supplies that match the State's seasonal and long-term consumption patterns, optimizing energy procurement by avoiding shortages or excesses. The platforms other than OTC typically operate with standardized contracts that do not allow for customization. Contracts on such platforms are pre-defined in terms of size, duration, and other terms, which may not perfectly align with the specific needs of all

buyers or sellers.

5. Further, the OTC Platforms can provide advanced data analytics services for better prediction of the State's energy demands, which would help improve Demand–Supply matching, leading to efficient electricity procurement and avoiding potential supply shortages.

6. The Respondent craves leave and reserves the right to make further submissions if required.The Commission may kindly allow this Respondent to participate in the hearing through virtual mode.

Commission's Views:

The Commission is of the view that the Distribution Licensee is allowed banking with other States through open bidding process. CERC-regulated platforms, such as OTC Platform cannot provide banking premium discovery and consequent execution of contract as is done in open bidding process. Further, OTC platforms are also not recognised under the Short-Term Bidding Guidelines of Ministry of Power, so any power banking arrangement and or contract executed through such platforms shall have no legal sanctity. The provision made by AERC, Jt.ERC and MERC have no applicability to the present regulatory mechanism. Therefore, the Commission considers it appropriate to retain the provisions of Regulation 16(b) of the Draft Regulations, without any modification.

(J). Comments on Regulation 17 of the Draft Regulations:

Stakeholders Comments

CER & EAL have requested for a clarification on Resource Adequacy (RA) Compliance and Capacity Tie-up. They have suggested that the Commission may consider providing a clear definition of RA compliance in the draft RA Regulation clause 17. The current framework does not explicitly distinguish between non-compliance due to timeline constraints and capacity tie-up shortages. Additionally, it is important to address how a capacity shortage can be assessed before reaching the defined compliance year. Furthermore, in scenarios where actual demand does not grow as projected, Discom that have maintained contracted capacities may require clarity on whether they would be incentivized for surplus capacity tie-up. Conversely, if Discom does not contract the required capacity due to lower-than-expected demand growth, it is essential to determine whether they would still be subject to the same penalties. Providing explicit regulatory guidance on these aspects will help ensure a balanced and fair approach to RA compliance, fostering both reliability and financial prudence in power procurement.

Commission's Views:

The Commission is of the view that there are adequate

provisions in the Draft Regulations which address the matter of tying up of the power in a time bound manner to cater to the demand based on the real time scenario. Therefore, the Commission considers it appropriate to retain the provisions of Regulation 17 of the Draft Regulations, without any modification.

(J) Stakeholders' General Comments:

GNA Energy Pvt. Ltd.has submitted that Resource adequacy Framework for the power sector in India should be established through a digital platform with real-time capabilities. A digital platform capable of handling real-time data enables precise monitoring and forecasting of power supply and demand, allowing for immediate and ongoing adjustments to RA planning models to ensure a stable and reliable electricity supply within the defined constraints of Discoms , SLDC and HPERC, and at minimal cost. This is particularly important in a dynamic and growing economy like India, where energy needs can fluctuate rapidly. Further, a digital platform enhances transparency and efficiency by providing all stakeholders with access to the same information, facilitating better coordination and decision–making. Thus, all stakeholders, including Discoms, SLDC and HPERC can get access to the same information, facilitating better coordination and decision making. Thus, all stakeholders, including Discoms, SLDC and HPERC can get access to information

through center talk and uniform source of truth. This will also help in predicting and planning for issues such as power outages or supply shortages more quickly, minimizing disruptions and improving overall grid reliability. Digital technology can also support the integration of renewable energy sources, which are inherently variable, by providing the necessary tools to manage their intermittency effectively. Overall, a digital platform, including for and maintaining resource adequacy, ensuring security, and promoting sustainable growth in India's power adequacy, ensuring energy security, and promoting sustainable growth in India's power sector.

Due to the increasing penetration of VRE, EV, and storage in modern power systems, RA assessments are becoming sensitive to the combination of operational uncertainties and a series of dispatch decisions, including the scheduling of generators, the charging and discharging of storage units, and transmission constraints. Therefore, to accurately assess the RA of a power system, it may be necessary to simulate the system's chronological operations using a dispatch model. The following aspects have a critical impact on the RA Assessment model:

(a) Multi-year data;
(b) Transmission limits;
(c) Storage dispatch;
(d) Non-economic thermal dispatch;

(e) Uncertain climatic conditions;
(f) Operation cost; and
(g) Short-term forecast error.

They have further informed that these aspects in Power System Modeling may not be feasible without a digital Platform with State of Art Software/Tools. Further, the RA Assessment Framework shall be successful when it is integrated with Power Procurement and is largely dependent on how on how well it feeds into the power procurement process. In alignment to this, energy operators can ensure they have the right mix of reliable, cost-effective, and sustainable energy sources to meet demand while maintaining grid stability and reducing financial risks.

CER & EAL have stated that Demand response as important component of RAR calculation, offers a low-cost option to ensure that the projected peak demand can be met without additional capacity investment. While adequate importance is given to the supply side options, role of demand response remains undermined. It is suggested that the Commission should direct the Discom to design and implement a demand response program and, incorporate the avoided 'peak capacity' requirement based on the expected available demand response in its Resource Adequacy Plan.

Commission's views:

The Commission has noted that the above comments are not specific to present regulatory framework and are mostly related

to procedures and processes. Whereas, the Commission is appreciative of the views of the stakeholders, it does not find it appropriate to include above suggestions in present Regulations.

The Commission would also like to inform that the Discom has an appropriate system of Demand Response catering to addressing of peak demand, which is also taken care of by the Discom, while preparing the RAP proposal, duly approved by the CEA.

30. In view of the above, the Commission decides to finalize and notify the Himachal Pradesh Electricity Regulatory Commission (Resource Adequacy Framework) Regulations, 2025. The Regulations are ordered to be published in the Rajpatra, Himachal Pradesh and shall come into force on date of its publication in the Rajpatra, Himachal Pradesh.

Ordered Accordingly.

Sd/-	Sd/-	Sd/-
(Shashi Kant Joshi)	**(Yashwant Singh Chogal)**	**(Devendra Kumar Sharma)**
Member	**Member (Law)**	**Chairman**

Date: 28.04.2025

Place: Shimla

Annexure-"A"

Sr. No.	Participants
1.	Ms. Sangeeta Verma, Sr. XEN, Himachal Pradesh State Electricity Board Limited.