



## **Statement of Object and Reasons for proposed Haryana Electricity Regulatory Commission (Framework for Resource Adequacy) Regulations, 2024**

The Haryana Electricity Regulatory Commission, in exercise of the powers conferred on it by section 181 of the Electricity Act 2003 (Act 36 of 2003) and all other powers enabling it in this behalf and after previous publication, proposes to make the Haryana Electricity Regulatory Commission (Framework for Resource Adequacy) Regulations, 2024.

1. The clause (b) of sub-section (1) to Section 86 of the Electricity Act 2003 provides that the State Commission shall regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State. Accordingly, the Commission has framed and notified the Haryana Electricity Regulatory Commission Guidelines for Load Forecasts, Resources Plans, and Power Procurement Process having regulation no. 31/99 notified in the official gazette on 12th July, 1999 in the State.
2. The Central Government has issued the Electricity (Amendment) Rules, 2022 with amendment of the Electricity Rules, 2005. Rule 16(2) of Electricity (Amendment) Rules, 2022 specify that:  
**16. Resource Adequacy-** (1) *A guideline for assessment of resource adequacy during the generation planning stage (one year or beyond) as well as during the operational planning stage (up to one year) shall be issued by the Central Government in consultation with the Authority, within six months from the date of commencement of these rules.*  
(2) *The State Commission shall frame regulations on resource adequacy, in accordance with the guidelines issued by the Central Government and the model Regulations framed by Forum of Regulators if any, the distribution licensees shall formulate the resource adequacy plan in accordance with these Regulations and seek approval of the Commission.*  
(3) *The State Commission shall review the resource adequacy, for each of the distribution licensees, as per the time line given in resource adequacy guidelines issued by the Central Government.*  
(4) *The State Commission may determine non-compliance charges for failure to comply with the resource adequacy target approved by the Commission.*

*(5) The National Load Dispatch Centre and the Regional Load Dispatch Centres shall carry out assessments of resource adequacy, for operational planning, at the national and regional levels respectively, on an annual basis, in accordance with the guidelines issued by the Central Government.*

*(6) The State Load Dispatch Centre shall carry out assessments of resource adequacy, for operational planning, at the state level, in consultation with all the concerned stakeholders on an annual basis, in accordance with the guidelines issued by the Central Government and the directions of the State Commission.*

*(7) The State Load Dispatch Centre shall review the operational resource adequacy on a daily, monthly and quarterly basis.*

3. Further, Ministry of Power (MoP) has issued guidelines for Resource adequacy planning framework for India vide its letter dated 28.06.2023. Forum of Regulators has also drafted the model Regulations on the Resource Adequacy Framework.
4. Keeping in view the Rule 16(2) of the Electricity (Amendment) Rules 2022, FOR Model Regulations and Ministry of Power guidelines, the Commission now proposes to frame Haryana Electricity Regulatory Commission (Framework for Resource Adequacy) Regulations, 2024 by repealing the existing Haryana Electricity Regulatory Commission Guidelines for Load Forecasts, Resources Plans, and Power Procurement Process having regulation no. 31/99.
5. Draft Haryana Electricity Regulatory Commission (Framework for Resource Adequacy) Regulations, 2024 are enclosed as Annexure-A. The comments/suggestions/objections from all the stakeholders are solicited under Sub-section (3) of Section 181 of the Electricity Act, 2003 read with Rule 3 of the Electricity (Procedure for Previous Publication) Rules, 2005 on the draft regulations.
6. It needs to be noted that the draft Discussion Paper is for discussion and a final view on these Regulations shall be taken by the Hon'ble Commission after considering the feedback received from the Stakeholders through public hearing.

**HARYANA ELECTRICITY REGULATORY COMMISSION**

**Discussion Paper for proposed Haryana Electricity Regulatory Commission (Framework for Resource Adequacy) Regulations, 2024**

In exercise of the powers conferred on it by section 181 of the Electricity Act 2003 (Act 36 of 2003) read with section 61, 66, and 86 thereof and all other powers enabling it in this behalf and after previous publication, the Haryana Electricity Regulatory Commission hereby makes the Haryana Electricity Regulatory Commission (Framework for Resource Adequacy) Regulations, 2024 as under: -

**1. Short Title, Extent, and Commencement**

- 1.1. These Regulations may be called the Haryana Electricity Regulatory Commission (Framework for Resource Adequacy) Regulations, 2024.
- 1.2. These Regulations shall extend to the whole state of Haryana.
- 1.3. These Regulations shall come into force from the date of their notification in the Official Gazette.

**2. Objective**

- 2.1. The objective of these Regulations is to enable the implementation of Resource Adequacy framework by outlining a mechanism for planning of generation and transmission resources for reliably meeting the projected demand in compliance with specified reliability standards for serving the load with an optimum generation mix.
- 2.2. The Resource Adequacy framework shall cover a mechanism for demand assessment and forecasting, generation resource planning, procurement planning, and monitoring and compliance.

**3. Scope and Applicability**

- 3.1. These Regulations shall apply to the generating companies, distribution licensees, State Load Despatch Centre, State Transmission Utility, and other grid connected entities and stakeholders within the State of Haryana.

**4. Definitions**

- 4.1. In these Regulations, unless the context otherwise requires,

- a. "Act" means the Electricity Act, 2003 (36 of 2003) and subsequent amendments thereof.
- b. "Authority" means Central Electricity Authority referred to in sub-section (1) of Section 70 of the Act.
- c. "Capacity Credit" or "CC" means a percentage of a resource's nameplate capacity that can be counted towards resource adequacy requirements.
- d. "Commission" or "State Commission" means the Haryana Electricity Regulatory Commission (HERC) constituted under the Act.
- e. "Expected Energy Not Served" or "EENS" means the expected amount of load (MWh) that may not be served for each year within the time horizon for Resource Adequacy planning.
- f. "Loss of Load Probability" or "LOLP" means probability that a system's load will exceed the generation and firm power contracts available to meet that load in a year.
- g. "Long Term" means ten years for development of demand forecast, generation resource plan, and procurement plan.
- h. "Long-Term Distribution Resource Adequacy Plan" or "LT-DRAP" means plan for assessment of Long-term resource adequacy by distribution licensees.
- i. "Medium term" means duration exceeding one year and upto five years for development of demand forecast, generation resource plan, and procurement plan.
- j. "Medium-Term Distribution Resource Adequacy Plan" or "MT-DRAP" means plan for assessment of medium-term resource adequacy by the distribution licensee.
- k. "Net Load" means the load derived upon exclusion of actual generation (MW) from renewable energy generation resources from gross load prevalent on the Grid during any time-block.
- l. "Normalized Energy Not Served" or "NENS" represents is the total expected load shed due to supply shortage (MWh) i.e. 'EENS' as a percentage (%) of the total system energy, and therefore represents an overall percentage of system load that cannot be served.
- m. "Planning Reserve Margin" or "PRM" means specified percentage of peak load forecast of the system as may be stipulated by the Authority/Commission from time to time, to address the demand and supply variation ensuring adequacy of generation resources in the system.

- n. "RA Guidelines" means Guidelines for Resource Adequacy planning framework for India notified by Ministry of Power in consultation with Central Electricity Authority framed under Rule 16 of Electricity (Amendment) Rules, 2022 and subsequent amendments in the guidelines issue from time to time.
  - o. "Resource Adequacy" or "RA" means a mechanism to ensure adequate supply of generation to serve expected demand (including peak, off peak and in all operating conditions) reliably in compliance with specified reliability standards for serving the load with an optimum generation mix with a focus on integration of environmentally benign technologies after taking into account the need, inter alia, for flexible resources, storage systems for energy shift, and demand response measures for managing the intermittency and variability of renewable energy sources.
  - p. "Short term" means one year for development of demand forecast, generation resource plan, and procurement plan.
  - q. "Short-Term Distribution Resource Adequacy Plan" or "ST-DRAP" means plan for assessment of short-term resource adequacy by the distribution licensee.
  - r. "State Transmission Utility (STU)" means the Haryana Vidyut Prasaran Nigam Limited or any such utility declared by the State Government engaged in the transmission of electricity within the state.
- 4.2.** All other words and expressions used in these Regulations, although not specifically defined herein above, but defined in the Act, shall have the meaning assigned to them in the Act. The other words and expressions used herein but not specifically defined in these Regulations or in the Act but defined under any law passed by the Parliament applicable to the electricity industry in the State shall have the meaning assigned to them in such law.

## **Chapter 2**

### **General**

#### **5. Resource Adequacy Framework**

- 5.1.** Resource Adequacy framework entails the planning of generation and transmission resources for reliably meeting the projected demand in compliance with specified reliability standards for serving the load with an optimum generation mix.
- 5.2.** Resource Adequacy framework shall cover following important steps:
  - a. Demand assessment and forecasting

- b. Generation resource planning
  - c. Procurement planning
  - d. Monitoring and compliance
- 5.3.** The medium and short term for the purpose of these Regulations shall be considered as:
- a. Long-Term procurement plan for a period up to ten years; and
  - b. Medium term procurement plan for a period up to five years; and
  - c. Short-term procurement plan for a period up to one year.
- 5.4.** The Resource Adequacy exercise shall be developed and prepared for a planning period of 10 (Ten) years on annual rolling basis.
- 5.5.** The distribution licensee and STU shall develop and prepare Medium-Term Distribution Resource Adequacy Plan (MT-DRAP) and Short-Term Distribution Resource Adequacy Plan (ST-DRAP) in accordance with the conditions outlined under these Regulations.
- 5.6.** The Distribution Licensee and STU shall undertake Long-Term Distribution Resource Adequacy Plan (LT-DRAP) to meet peak demand and electrical energy requirement as per RA Guidelines and other amendments/ guidelines issued by the Authority/Commission in this regard.

### **Chapter 3**

#### **Demand Assessment and Forecasting**

##### **6. Long-term and Medium-term Demand Forecast**

- 6.1.** Demand assessment and forecasting is an important step for Resource Adequacy assessment. It shall entail sub-hourly or at least hourly assessment and forecasting of demand within the distribution area of distribution licensee for multiple horizons (short/medium/long-term) using comprehensive input data and policies and drivers and scientific mathematical modelling tools.
- 6.2.** The distribution licensee shall be responsible for the assessment and forecasting of demand (MW) and energy (MWh) within its own control area.
- 6.3.** The distribution licensee shall determine the load forecast for each consumer category for which the Commission has determined separate retail tariff.

- 6.4.** The distribution licensee shall determine the load forecast for a customer category by adopting any of the following and/or combination of following methodologies:
- a) compounded average growth rate (CAGR);
  - b) end use or partial end use;
  - c) trend analysis;
  - d) Auto-regressive integrated moving average (ARIMA);
  - e) AI including machine learning, ANN techniques; and
  - f) econometric (specifying the parameters used, algorithm, and source of data).
- 6.5.** The distribution licensee may use Electric Power Survey (EPS) projections as base and/or any other methodologies other than the above-mentioned after recording the merits of the method. Further, distribution licensee should use best fit of various methodologies for the purpose of demand/load forecast taking into consideration probabilistic modelling approach for various scenarios (viz. most probable, business as usual, aggressive) as outlined under Clause 6.14.
- 6.6.** For the purposes of deciding the load forecast for a customer category and the methodology to be used for load forecasting of a customer category, the distribution licensee must conduct statistical analysis and shall select the method for which standard deviation is lowest and R-square is highest.
- 6.7.** The distribution licensee shall utilize state-of-the-art tools, scientific and mathematical methodologies, and comprehensive database such as but not limited to weather data, historical data, demographic and econometric data, consumption profiles, impact of policies and drivers etc. as may be applicable to their control area.
- 6.8.** The distribution licensee may modify the load obtained on either side, for each customer category, by considering the impact for each of the but not limited to the following activities. The impact shall be considered by developing trajectories for each of the activities based on the economic parameters, policies, historical data, and projections for the future.
- a) demand-side management;
  - b) open access;
  - c) distributed energy resources;
  - d) DSM and demand response measures;

- e) electric vehicles;
  - f) tariff signals;
  - g) changes in specific energy consumption,
  - h) increase in commercial activities with electrification
  - i) increase in number of agricultural pump sets and its solarization
  - j) changes in consumption pattern from seasonal consumers
  - k) availability of supply; and
  - l) policy influences such as 24X7 supply to all customers, LED penetration, efficient use of fans/appliances, increased use of appliances for cooking/heating applications, electrification policies, distributive energy resources, storage, and policies, which can impact econometric parameters, impact of national hydrogen mission. For each policy, a separate trajectory should be developed for each customer category.
- 6.9.** The distribution licensee may take into consideration any other factor not mentioned in clause 6.8 after recording the merits of its consideration.
- 6.10.** The long-term and medium-term load profile of the customer categories for which load research has been conducted may be refined on the basis of load research analysis. A detailed explanation for refinement conducted must be provided.
- 6.11.** The summation of energy forecast (MWh) for various consumer categories upon adjusting for captive, prosumer, and open access load forecast, as obtained as per clauses 6.4 to clause 6.10, as the case may be, shall be the load forecast for the licensee.
- 6.12.** The licensee shall calculate the load forecasts (in MWh) by adding a loss trajectory approved by the Commission in the latest tariff order. In the absence of the loss trajectory as approved by the Commission for the planning horizon, an appropriate loss trajectory stipulated by State or National policies shall be considered with a detailed explanation.
- 6.13.** The peak demand (in MW) shall be determined by considering the average load factor, load diversity factor, seasonal variation factors for the last three years and the load forecasts (in MWh) obtained in clause 6.12. If any other appropriate load factor is considered for future years, a detailed explanation shall be provided.
- 6.14.** The distribution licensee shall conduct sensitivity and probability analysis to determine the most probable demand forecast. The distribution licensee must also develop long- term



and medium-term demand forecasts for possible scenarios, while ensuring that at least three different scenarios (most probable, business as usual, and aggressive scenarios) are developed.

## **7. Short term (Hourly/Sub-hourly) Demand Forecast and Aggregation at State**

- 7.1.** The distribution licensee shall develop a methodology for hourly or sub-hourly demand forecasting and shall maintain a historical database.
- 7.2.** For the purpose of ascertaining hourly load profile and for assessment of contribution of various customer categories to peak demand, load research analysis shall be conducted and influence of demand response, load shift measures, time of use shall be factored in by distribution licensee with inputs from state load dispatch center. A detailed explanation for refinement conducted must be provided.
- 7.3.** The distribution licensee shall utilize state-of-the-art tools, scientific & mathematical methodologies and comprehensive data such as but not limited to weather data, historical data, demographic and econometric data, consumption profiles, policies and drivers etc. as may be applicable to their control area.
- 7.4.** The distribution licensee shall produce hourly or sub-hourly 1-year short-term (ST) and 5-year medium-term (MT) and 10-years Long-Term (LT) forecasts on a rolling basis and submit to STU by 30<sup>th</sup> April of each year for the ensuing year(s).
- 7.5.** STU with inputs from SLDC and based on the demand estimates of the distribution licensees of the State, shall estimate, in different time horizons, namely long-term, medium term and short term, the demand for the entire State duly considering the diversity of the State.
- 7.6.** SLDC shall aggregate demand forecasts by distribution licensees, consider the load diversity, congruency, seasonal variation aspects and shall submit state-level aggregate demand forecasts (MW and MWh) to the Authority and NLDC and RLDC by 31st May of each year for the ensuing year(s).

## **Chapter 4**

### **Generation Resource Planning**

- 8.** Generation resource assessment and planning is the second step after demand assessment and forecasting and entails assessment of the existing and contracted

resources considering their capacity credit and identification of incremental capacity requirement to meet forecasted demand including planning reserve margin.

**9. Key contours and important steps in Generation Resource Planning:**

- 9.1. Generation resource planning shall entail the following steps namely, (a) capacity crediting of generation resources, (b) assessment of planning reserve margin, and (c) ascertaining resource adequacy requirement and allocation for obligated entities within control area (regional/state).
- 9.2. The distribution licensee shall map all its contracted existing resources, upcoming resources, and retiring resources to develop the existing resource map in MW for the long term and medium term.
- 9.3. The mapping shall include critical characteristics and parameters of the generating machines, such as heat rate, auxiliary consumption, ramp-up rate, ramp-down rate, etc., for thermal machines; hydrology and machine characteristics, etc., for hydro machines; and renewable resources, their Capacity factors/CUFs, etc. for renewable resource-based power plants to be considered in the resource plan. All the characteristics and parameters with their values for each generating machine considered shall be provided in the resource plan.
- 9.4. Constraints such as penalties for unmet demand, forced outages, spinning reserve requirements, and system emission limits as defined in State and Central electricity grid codes and emission norms specified by the Ministry of Environment and Forest shall be identified and enlisted.
- 9.5. The distribution licensee shall also include a planning reserve as specified by the Authority or Commission, as the case may be. In the absence of any guidelines from the Commission, the distribution licensee can consider suitable planning reserve. The value of planning reserve considered shall be stipulated in the resource plan along with justifications.

**10. Capacity Crediting of Generation Resources**

- 10.1. The distribution licensee shall compute Capacity Credit (CC) factors for their contracted generation resources by applying the net load-based approach as outlined under Clause 10.2 of this Regulation. The five-year average of the Capacity Credit (CC) factor for each type of the contracted generation resource for the recent five years on a rolling basis shall be considered as Capacity Credit factor for the purpose of generation resource planning.

**10.2.** The Net Load based approach/methodology for determination of Capacity Credit (CC) factors for generation resources (including wind and solar) shall be adopted as under:

- a) For each year, the hourly recorded Gross Load for 8760 hours / 8784 hours for leap year (or time-block) shall be arranged in descending order.
- b) For each hour, the Net Load is calculated by subtracting the actual wind or solar generation corresponding to that load for 8760 hours or 8784 hours as the case may be (or time-block) and then arranged in descending order similar to Step 1.
- c) The difference between these two load duration curves represents the contribution of capacity factor of wind generation or solar generation, as the case may be.
- d) Installed capacity of wind or solar generation capacity is summed up corresponding to the top 250 load hours.
- e) Total generation from wind or solar generation corresponding to these top 250 hours is summed up.
- f) Resultant CC factor is (Total Generation for top load 250 hours)/(Installed RE Capacity for top load 250 hours), as per formula below:

$$\text{CC factor} = \frac{\text{Sum of RE Generation for top x hours}}{\text{Sum of RE Capacity for top x hours}}$$

- g) The process for CC factor determination shall be undertaken for each year for duration of past five-years and the resultant CC is the average of CC values of past 5 years.
- 10.3.** For the purpose of Inter-state contracted RE generation or intra-state RE resources, contribution of CC factor for the RE or generation resource where such resource is located into grid (viz. inter-state or intra-state, as the case may be) as contracted by the distribution licensee shall be considered. For this purpose, CC factors as specified by Authority or the Commission, if any, shall be considered.
- 10.4.** CC factors for hydro generation resources shall be computed based on water availability with different CC factors for run-of-the-river hydro power projects and dam-based/storage-based hydro power projects. CC for thermal resources shall be computed based on coal availability and forced outages.
- 10.5.** The distribution licensee shall share CC factors for their contracted resources along with justification for its computations with State Load Dispatch Centers.

**10.6.** 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.

**11. Assessment of Planning Reserve Margin (PRM)**

**11.1.** Planning Reserve Margin (PRM) as a percentage of peak load represents the excess generation resource or planning reserve required to be considered for the purpose of generation resource planning.

**11.2.** Such Planning Reserve Margin (PRM) factor (for example, 7%) shall be based on the reliability indices in terms of Loss of Load Probability (LOLP, for example, 0.2%) and Normalized Energy Not Served (NENS, for example, 0.05%) as may be specified by the Authority and the same shall be considered by utilities in their planning for resource adequacy requirement and generation resource capacity planning.

**11.3.** The capacity planning by the distribution licensee and State level resource adequacy planning by STU/SLDC shall factor in PRM while developing state-level Integrated Resource Plan.

**12. Ascertaining Resource Adequacy Requirement and its Allocation for Control Area**

**12.1.** Upon applying CC factors as determined under Regulation 10 of these regulations and determining adjusted capacity for contracted generation resources (existing and planned), the sum of such adjusted contracted generation capacity (existing and planned) over a time axis of 15-minute intervals or longer, but not more than one hour, shall form the resource map of the distribution licensee.

**12.2.** The distribution licensee shall subtract the resource map developed in clause 12.1 from the demand forecast developed in section 6 (ref. Clause 6.13) to identify the resource gap. The resource gap in terms of RA compliance for the distribution licensee for the long term and medium term shall be developed in the manner as specified in these Regulations.

**12.3.** The distribution licensee shall conduct sensitivity and probability analysis to determine the most probable resource gap. The distribution licensee shall also develop long-term and medium-term resource gap plans for possible scenarios, while ensuring that at least three different scenarios (most probable, business as usual, and aggressive) are developed.

- 12.4.** Based on most probable scenario, the distribution licensee shall undertake development of Long-term Distribution Resource Adequacy Plan (LT-DRAP), Medium-term Distribution Resource Adequacy Plan (MT-DRAP) and Short-term Distribution Resource Adequacy Plan (ST-DRAP) exercise by 31st August of each year to meet RA target requirement.
- 12.5.** RA requirement planning shall be done with reference to national coincident peak to optimize requirement of incremental capacity addition through annual rolling plan. Mid-term review of national RA requirement planning shall be conducted to check for events of slippages by states, if any.
- 12.6.** While planning RA requirement, the distribution licensee shall duly factor in the allocation of RA requirement to the state as may be suggested by the Authority or the NLDC, as the case may be, based on contribution to National Co-incident Peak Demand (CPD) for MT-RA and ST-RA.
- 12.7.** The distribution licensees may keep the share of Long-Term contracts in the range of 75-80% of the Resource Adequacy Plan (RAR) and Medium-Term contracts in the range of 10% - 20% of the RAR while the rest to be met through Short-Term contracts. Provided that power procurement through Day-Ahead Market (DAM), shall not be considered towards the contribution for meeting RAR.
- 12.8.** The Distribution licensees may take inputs from the LT-NRAP like PRM, capacity credits, etc., while formulating their LT-DRAP and shall submit their plans to CEA by 31<sup>st</sup> August of each year for the ensuing year(s) for validation.
- 12.9.** The Distribution licensees shall submit the LT-DRAP plan duly vetted by CEA along with necessary supporting documents and details for meeting RAR to the Commission within 15 days from the date of receipt of CEA's approval.
- 12.10.** The Commission shall approve MT-DRAP and ST-DRAP of the distribution licensees by 31st October of each year for the ensuring year(s) incl. annual rolling plans, as the case may be, upon taking into consideration various scenarios as well as allocation of Resource Adequacy requirement allocated to the State/distribution licensee based on its contribution to the National peak or National RA requirement as determined by Authority or the NLDC or the RLDC, as the case may be.

## Chapter 5

### Procurement Planning

13. Procurement planning shall consist of (a) determining the optimal power procurement resource mix, (b) deciding on the modalities of procurement type and tenure, and (c) engaging in the capacity trading or sharing to minimize risk of resource shortfall and to maximize rewards of avoiding stranded capacity or contracted generation.
14. **Procurement Resource Mix**
  - 14.1. The distribution license in its power procurement strategy shall lay emphasis on the optimal procurement generation resource mix that shall enable smooth RE integration in its portfolio of power procurement resource options while meeting reliability standards.
  - 14.2. For identification of the optimal generation procurement resource mix, optimization techniques and least-cost modelling shall be employed in order to avoid stranding of assets. The distribution licensee shall engage in adoption of least cost modelling and optimization techniques and demonstrate the same in its overall power procurement planning exercise to be submitted to Commission for approval.
  - 14.3. Procurement by distribution licensees shall be consistent with the identified resource mix and considering overall national electricity plan and policies notified by the Appropriate Government from time to time.
  - 14.4. The power capacity procurement from renewable energy sources for fulfilling the RPO targets shall be carried out as per HERC (Terms and Conditions for determination of Tariff from Renewable Energy Sources, Renewable Purchase Obligation and Renewable Energy Certificate) Regulations, 2021, as amended from time to time.
  - 14.5. The power procurement from Wind, Solar PV, Wind Solar Hybrid, Round the Clock (RTC) generations shall be carried out as per the guidelines for Tariff Based Competitive Bidding process notified by the Ministry of Power.
  - 14.6. The Distribution licensees shall contract storage capacity corresponding to the results of LT – DRAP/MT- DRAP capacity addition requirement for future years from Battery Energy Storage System (BESS) and Pump Storage Projects (PSP) as per the guidelines for Tariff Based Competitive Bidding process notified by the Ministry of Power.
15. **Procurement Type and Tenure**

- 15.1. The distribution licensee, while determining the modalities and tenure of procurement of resource mix, shall ensure that at the initial level, available capacity within the region shall be optimized. For further optimization, procurement contract shall be decided first within the region subject to the least cost resource availability considering transmission constraints & cost of transmission for procurement from outside the region and then across regions if necessary.
- 15.2. The distribution licensees shall identify the generation resource mix and also procurement strategy in long-term, medium-term and short-term horizon and seek approval of the Commission.
- 15.3. In its overall power procurement planning approach, the distribution licensee shall lay greater emphasis on adequate contracting through long and medium-term arrangements.
- 15.4. Assessment through Annual Rolling Plan shall ascertain incremental capacity addition requirement through LT/MT/ST upon factoring in existing and planned procurement initiatives of the distribution licensee.
- 15.5. The distribution licensee shall contract capacities by 30<sup>th</sup> November of each year and submit the Annual Rolling Plan to the Commission as well as STU/SLDC by 31<sup>st</sup> December of each year for ensuring year(s).
- 15.6. STU and SLDC shall submit state-level aggregated plan to RLDC and RLDC shall submit regional-level aggregated plan to NLDC by 31<sup>st</sup> January of each year for the ensuing year(s).
16. **Sharing of Capacity**
  - 16.1. The distribution licensee shall duly factor in the possibility of short-term capacity sharing while preparing the Resource Adequacy plan and optimally utilize the platform for inter-state capacity sharing or trading mechanism created by the Central Commission, and optimize the capacity costs as far as possible.
  - 16.2. The distribution licensee shall submit information about contracted capacity to the SLDC and the STU for compliance verification.
  - 16.3. The distribution licensee, the STU and the SLDC shall seek approval of the Commission to the procurement plan as well as Annual Rolling Plans.
17. **Approval of Power Purchase Agreement**

- 17.1.** Any new Capacity agreement / tie-up shall be subject to the prior approval of the Commission in view of necessity, reasonableness of cost of power purchase and promotion of working in an efficient, economical and equitable manner.
- 17.2.** All procurement of Long/ Medium/ Short-Term power from various sources shall be carried out as per the Guidelines/ Rules/ Regulations/ Policies issued by the Commission/Central Government from time to time.
- 17.3.** Any new power purchase agreement for Long/Medium-term or amendments to existing Long/Medium-Term Power Purchase Agreement (PPA's)/ Power Sale Agreement (PSA) entered into by the Distribution licensees (HPPC) shall be subject to the prior approval of the Commission in respect of:
- i) Necessity;
  - (ii) Reasonability of cost;
  - (iii) Promoting efficiency, economy, equitability and competition;
  - (iv) Conformity with requirements of quality, continuity and reliability of supply;
  - (v) Conformity with safety and environmental standards;
  - (vi) Conformity with criterion of power purchase as laid down by the Commission;
  - (vii) Conformity with policy directives of the State Government and policies issued by the Government of India viz. National Electricity Policy, Tariff Policy, Long-Term and Short-Term power procurement guidelines etc.
- 17.4.** The Distribution licensees (HPPC) shall submit the list of all existing Power Purchase Agreements executed with different conventional power plants as well as RE Generators along with the Resource Adequacy plan.

## **Chapter 6**

### **Monitoring and Compliance**

#### **18. Monitoring and Compliance**

- 18.1. Monitoring and Reporting:** Based on the MT-DRAP and ST-DRAP, STU and SLDC shall communicate the state-aggregated capacity shortfall to the State Commission by 30<sup>th</sup> September of each year for the ensuring year(s) and advise the distribution licensees to commit additional capacities.



- 18.2. Treatment for shortfall in RA Compliance:** Distribution licensees shall comply with the RA requirement and in case of non-compliance, appropriate non-compliance charge shall be applicable for the shortfall for RA compliance.

## **Chapter 7**

### **Roles and Responsibilities and Timelines**

#### **19. Data Requirement and Sharing Protocol**

- 19.1.** Distribution licensees shall maintain and share with STU/SLDC all data related to demand assessment and forecasting such as but not limited to consumer data, historical demand data, weather data, demographic and econometric variables, T&D losses, actual electrical energy requirement and availability including curtailment, peak electricity demand, and peak met along with changes in demand profile (e.g.: agricultural shift, time of use, etc.), historical hourly load shape, etc.
- 19.2.** Distribution Licensee shall maintain all statistics and database pertaining to policies and drivers, such as LED penetration, efficient fan penetration, appliance penetration, increased usage of electrical appliances for cooking, etc., in households, increase in commercial activities for geographic areas/regions, increase in number of agricultural pumps and solarization within control area, changes in specific energy consumption, consumption pattern from seasonal consumers such as tea plants, DSM and DERs, EVs and OA, National Hydrogen Mission, reduction of AT&C losses, etc. shall also be shared.
- 19.3.** Distribution Licensee shall maintain at least past 10 years of statistics in its database pertaining to consumption profiles for each class of consumers, such as domestic, commercial, public lighting, public water works, irrigation, LT industries, HT industries, railway traction, bulk (non-industrial HT consumers), open access, captive power plants, insights from load survey, contribution of consumer category to peak demand, seasonal variation aspects, etc. shall also be shared.
- 19.4.** SLDC shall maintain the licensee-specific as well as aggregate for state as whole, the statistics and database pertaining to aggregate demand assessment and forecasting data mentioned above and share state-level assessment with the Authority and the NLDC for regional/national assessment from time to time.
- 19.5.** The distribution licensee shall share information and data pertaining to the existing and contracted capacities with their technical and financial characteristics including hourly

generation profiles to with STU and SLDC for computation of state-level capacity credit factors and for preparation of state-level assessment.

**19.6.** SLDC and STU shall aggregate generation data and share state-level assessment with the Authority and NLDC for assessment of RA requirement.

**19.7.** STU shall communicate allocation of regional and national RA requirement to the distribution licensees.

## **20. Timelines**

**20.1.** Distribution licensees shall submit demand forecasts (MW and MWh) to SLDC by 30<sup>th</sup> April of each year for the ensuring year(s).

**20.2.** STU/SLDC shall aggregate and submit state-level forecasts to the Authority and the NLDC by 31<sup>st</sup> May of each year for the ensuring year(s).

**20.3.** Distribution licensees shall perform LT-DRAP, MT-DRAP and ST-DRAP exercise by 31<sup>st</sup> August of each year for the ensuring year(s).

**20.4.** STU and SLDC shall submit state-level aggregated plan to NLDC by January of each year.

## **Chapter 8**

### **Miscellaneous**

#### **21. Power to Give Directions**

**21.1.** The Commission may from time to time issue such directions and orders as considered appropriate for implementation of these regulations.

#### **22. Power to Relax**

**22.1.** The Commission may by general or special order, for reasons to be recorded in writing, and after giving an opportunity of hearing to the parties likely to be affected, may relax any of the provisions of these Regulations on its own motion or on an application made before it by an interested person.

#### **23. Power to Remove Difficulties**

**23.1.** If any difficulty arises in giving effect to the provisions of these Regulations, the Commission may, by an order, make such provisions, not inconsistent to the provision of the Act and these Regulations, as may appear to be necessary for removing the difficulty.