

20MAHARASHTRA ELECTRICITY REGULATORY COMMISSION

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MAHARASHTRA ELECTRICITY REGULATORY COMMISSION (FRAMEWORK FOR RESOURCE ADEQUACY) REGULATIONS, 2024

STATEMENT OF REASONS

Dated: 20 June, 2024

Preamble

Maharashtra is the largest producer and consumer of electricity in India. Its peak demand and energy requirement are both projected to grow over the next few years. On the supply side, share of renewable energy (**RE**) in its installed capacity has grown from 21% in FY19 to 31% in FY24, and accounting for the 4th highest RE installed capacity in India. Maharashtra's Unconventional Energy Generation Policy aims at implementing 17 GWs of RE projects by FY25, including 13 GWs of solar. This along with Renewable Purchase Obligation (**RPO**) targets will further entail a rapid expansion from the current 6.3 GWs of solar and 5.2 GWs of wind.

As it embarks on this transition, the electricity sector needs to resolve critical issues, such as the treatment of RE capacity to meet peak load and increased system ramping and balancing needs. In this regard, Resource Adequacy (**RA**) measures is seen as an important step wherein it is envisaged to meet forecasted demand at all times with a mechanism of optimising the resources, sharing them among distribution licensees (**DLs**) and enable states to maximise clean energy penetration. Having a well-designed RA framework would be important to scale up renewables in the grid while ensuring grid reliability in a cost-effective manner.

In December 2022, the Ministry of Power (**MoP**) notified the Electricity Amendment Rules which stated that the State Electricity Regulatory Commission (**SERC**) would frame RA Regulations in accordance with Guidelines issued by the Central Electricity Authority (**CEA or Authority**) and State Model Regulations by the Forum of Regulators (**FOR**).

Accordingly, Maharashtra Electricity Regulatory Commission (**MERC or the Commission**) published the Draft (Framework for Resource Adequacy) Regulations, 2024 (**Draft Regulations**) on 7 March, 2024 on its website www.merc.gov.in and sought suggestions and objections through a Public Notice in daily newspapers in Marathi (Maharashtra Times and Lokmat) and English (The Times of India and The Economic Times) on 7 March, 2024. Last

date for receiving the suggestions/objections was 28 March 2024 which was extended upto 15 April 2024. Total (10) entities responded to the Notices. The list of stakeholders who offered their comments/suggestions/ objections on the Draft (Framework for Resource Adequacy) Regulations, 2024, which have been considered by the Commission while finalising the Regulations, is placed at **Annexure-I**.

The main comments/suggestions/ objections and views expressed by the stakeholders through their written submissions and the Commission's views thereon have been summarized in the following paragraphs. It may be noted that all the suggestions given by the stakeholders have been considered and the Commission has attempted to elaborate all the suggestions as well as the Commission's decisions on each suggestion in this Statement of Reasons (**SOR**). However, certain suggestions may not be specifically elaborated, but are considered. Further, some stakeholders have suggested changes on Syntax/phrase/addition of word(s)/rewording related changes, etc. which have been suitably incorporated, wherever necessary.

Wherever possible, the comments and suggestions or objections have been summarised clause-wise, along with the Commission's analysis and ruling on the same. However, in some cases, due to overlapping of the issues/comments, the clauses have been combined in order to minimise repetition.

Accordingly, in exercise of the powers conferred under Section 181 of the Electricity Act, 2003 (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 Commission has formulated Maharashtra Electricity Regulatory Commission (Framework for Resource Adequacy) Regulations, 2024 (**Final Regulations**). The main issues raised and the Commission's analysis and decisions on them which as outlined under the Regulations as finally notified are set out below.

1. Commencement

1.1 Proposed in Draft RA Regulations

"1.3 ----- These Regulations shall come into force from the date of their notification in the Official Gazette or as may be notified by the Commission separately."

1.1.1 Comments Received

NUPLLP submitted that the Regulations may come into force from the next financial year (**FY**), i.e., from 1 April, 2025. NUPLLP also submitted that the date of submission of all the previous financial year data may be specified as 30 April of each year. It was further requested that the capacities would be contracted by ensuing year by 31 January of each year and plan to be submitted by 15 February to STU/SLDC, with submission to NLDC by 28 February.

MSEDCL requested for deferment of time period of at least one year from the date of applicability. MSEDCL also submitted that the distribution licensees may be granted sufficient time (at least 8-9 months) after notification of Final Regulations to come up with the desired results for category wise energy forecasting (in MUs). Further, it was requested that the

timeline for submission of Short Term (ST) and Medium Term (MT) forecasts to MSLDC may be revised from 21 April to 31 August, and that the timeline for submission to CEA, NLDC and RLDC by MSLDC may also be accordingly revised from 31 May to 30 September.

AEML requested for trial mode of operations for FY 2026-27 and then commercial operation subject to implementation by most of the other States.

TPC requested that the distribution licensee shall contract capacities at least two months prior to the start of the actual supply of power.

Prayas proposed penalties for not adhering to the process and timelines for the first 1-2 years.

MSETCL requested to review timelines for submission of aggregate generation data, State level assessment, allocation of national RA, aggregated capacity shortfall related data, or any other such related information considering that this is a newly introduced activity and MSETCL may be required to bring in proper expertise and train its staff in an appropriate manner to prepare the same.

1.1.2 Analysis and Commission's Decision

MoP vide letter dt. 8 April 2024 has mandated all Electricity Regulatory Commissions (ERCs) for timely implementation of RA Guidelines and the FoR has also recommended to adopt the model RA Regulations by SERCs for implementation in their States on an immediate basis.

Further, with regards to AEML-D's suggestion, the Commission is of the view that, SERC is mandated to implement the RA Regulations in its State. It has no relevance with status of impregnation in the other States.

However, given the date of notification of Final Regulations and urgent mandate by MoP, the Commission notes the concerns raised by the stakeholders that it may not be possible to adhere to initial timelines. Accordingly, **for the first year of the implementation of the RA Regulations i.e. for FY 2024-25, the Commission would separately notify the timelines specified in Regulation 21 of RA Regulations 2024, however, from the second year i.e. from FY 2025-26 onwards, timelines specified in Regulation 21 of RA Regulations shall be followed by all the stakeholders.**

Accordingly, the proviso is added under Regulation 1.3 of the final MERC RA Regulations 2024.

1.1.3 Provision in Final RA Regulations

"1.3 ----- These Regulations shall come into force from the date of their notification in the Official Gazette or as may be notified by the Commission separately.

Provided that the timelines specified in Regulation 21 of these Regulations shall be applicable from FY 2025-26.

Provided further that for FY 2024-25, i.e., 1 April, 2024 to 31 March 2025, timelines shall be separately notified by the Commission."

2. Objective of the Regulations

2.1 Proposed in Draft RA Regulations

“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.”

2.1.1 Comments Received

Prayas has submitted that demand response planning by distribution licensees may also be considered along with planning of generation and transmission resources as part of RA framework.

RAP submitted that views of Transmission Licensees (TLs) and STU on whether the proposed procurement plan by DLs is feasible considering the transmission constraints and other factors, should be considered. Additionally, 5-year Transmission Plan proposed by STU should coincide with the capacity addition plan of DL as disparity between the two may lead to wastage of resources. Further, RAP submitted that transmission security and definition thereof including analysis of targets of Total Transmission Capability (TTC) and General Network Access (GNA) to be included as part of RA.

2.1.2 Analysis and Commission's Decision

The Commission is of the view that, Demand Resource planning is the first and critical step of demand forecasting and Licensees are expected to consider the same while planning. Hence, it may not be necessary to include demand resource planning along with planning of generation and transmission resources as part of RA framework. Further, it may lead to double counting in both demand planning and generation planning. Accordingly, **the provisions of draft Regulations are retained.**

Further, the Commission is of the view that the Objective of the Draft Regulations includes transmission planning. However, for consistency, the 5-year transmission plan under Grid Code is referred in the final Regulations as under.

2.1.3 Provision in the Final Regulations

“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

Provided that the planning of transmission resources shall be consistent with “MERC (State Grid Code) Regulations, 2020” and amendments thereof.”

3. Scope and Applicability

3.1 Proposed in Draft RA Regulations

“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 Maharashtra.”

3.1.1 Comments Received

RAP and Prayas requested to clarify the treatment to the open access consumers under RA Regulations, specific to applicability of obligations. RAP suggested to clarify if the obligations to OA consumers shall be applicable as distribution licensees shall contract on behalf of OA consumers. ASL submitted that it should not be applicable to deemed licensee with demand less than 100 MW.

3.1.2 Analysis and Commission’s Decision

For the applicability of the RA Regulations, the full open access consumers shall be treated as an obligated entity for RA planning, whereas demand of partial open access consumers shall be factored in by the distribution licensees while forecasting their demand and STU/SLDC shall consider the same for state level planning. Further, for accurately capturing all demand and requirement, it would be applicable to all other grid connected entities and stakeholders within Maharashtra. Accordingly, the draft Regulation 3.1 is revised as under:

3.1.3 Provision in Final RA Regulations

*“3.1 ----- These Regulations shall apply to the generating companies, distribution licensees, State Load Despatch Centre, State Transmission Utility, **full transmission Open Access participants**, and other grid connected entities and stakeholders within Maharashtra.*

Provided that distribution licensees shall consider demand of partial open access consumers while forecasting their demand for RA planning.

4. Definitions

4.1 Proposed in Draft RA Regulations

“4.1(t) ----- “Power Purchase Agreement (PPA)” means the agreement entered into between the Procurer(s) and the Seller pursuant to which the Seller shall supply power to the Procurer(s) as per the terms and conditions specified therein.

4.1 (u)----- “Power Sale Agreement (PSA)” shall mean the back-to-back agreement entered into between the Buying Entity(s) and the Intermediary Procurer/trader for onward sale of power purchased under any power purchase agreement.”

4.1.1 Comments Received

TPCL suggested to include a new definition of **“Power Supply Agreement”**

4.1.2 Analysis and Commission's Decision

The Commission is of the view that, the definition of "Power Supply Agreement" should be generic to cover all types of power purchase agreements. The proposed definition in the Draft Regulations is comprehensive enough to cover all types of power purchase agreement and there is no need to refer specific type of agreements in the definition. Accordingly, the Commission has retained the **existing definition in the final Regulations**.

5. Horizon

5.1 Proposed in Draft RA Regulations

"5.3 ----- The medium and short term for the purpose of these Regulations shall be considered as:

- a) Medium term procurement plan for a period up to five years; and*
- b) Short-term procurement plan for a period up to one year."*

5.1.1 Comments Received

Multiple stakeholders including MSEDCL, TPC, and Prayas have requested to include long-term planning in the RA study.

5.1.2 Analysis and Commission's Decision

Planning up to medium-term was included for purposes of consistency with MYT Control Period of five years as well as given accuracy of forecasts beyond five years. However, given the national framework as outlined by the Authority, the Commission recognizes the need to expand the horizon up to long-term. Therefore, a definition for long-term planning is added along with necessary changes in other relevant Regulations.

5.1.3 Provision in Final RA Regulations

*"4.1(i) ----- "**Long-Term Distribution Resource Adequacy Plan**" or "**LT-DRAP**" means plan for assessment of long-term resource adequacy by the distribution licensee."*

*"5.3 ----- The **long**, medium and short term for the purpose of these Regulations shall be considered as:*

- a) **Long-term procurement plan for a period exceeding five years;***
- 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 distribution licensee shall develop and prepare 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**) in accordance with the conditions outlined under these Regulations."*

*“12.14 ----- The Commission shall approve MT-DRAP and ST-DRAP of the distribution licensees by 30th September of each year for the ensuing 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/state peak respectively as determined by Authority/NLDC/RLDC and STU/SLDC, as the case may be. **LT-DRAP shall be for purposes of planning and consistency with national framework.**”*

*“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. ST-DRAP and MT-DRAP shall be to be submitted to Commission for approval while **LT-DRAP shall be for planning and consistency with national framework.**”*

6. Granularity

6.1 Proposed in Draft RA Regulations

“6.1 ----- Demand assessment and forecasting is an important step for Resource Adequacy assessment. It shall entail at least hourly, or sub-hourly as may be decided by the Commission from time to time, assessment and forecasts 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.”

6.1.1 Comments Received

Multiple stakeholders have expressed views regarding the hourly/sub-hourly granularity of forecasts. AEML has requested for hourly/sub-hourly granularity of ST peak/energy, but monthly for MT and LT energy. MSEDCL has suggested for hourly granularity. NUPLLP has requested for hourly granularity of ST but daily granularity of MT and LT. Prayas has proposed that the granularity should be ideally sub-hourly or at least hourly.

6.1.2 Analysis and Commission’s Decision

The Commission is of the view that, scientific demand forecasting is the critical step of RA framework. Granular assessment is necessary to improve accuracy and better plan for peak and RA requirements. While multiple stakeholders have expressed concern over hourly/sub-hourly granularity, the Commission notes that utilities are submitting time block wise schedule for day ahead schedule and DSM accounting is also done on 15-min time block basis. Hence, for short-term planning, the hourly/sub-hourly granularity shall be considered. Further considering the challenges highlighted by stakeholders for granular forecasts for medium-term, the Commission considers hourly granularity and long-term forecast, shall entail monthly peak/off-peak load assessment and forecasts along with category wise energy forecasts shall be considered. Accordingly, the draft regulation 6.1 is revised as below.

6.1.3 Provision in Final RA Regulations

“6.1 ----- Demand assessment and forecasting is an important step for Resource Adequacy assessment. For short-term, it shall entail at least hourly, or sub-hourly assessment and forecasts of demand within the distribution area of distribution licensee using comprehensive input data and policies and drivers and scientific mathematical modelling tools. For medium-term, it shall entail hourly load assessment and forecasts, while for long-term, it shall entail monthly peak/off-peak load assessment and forecasts along with category wise energy forecasts.”

7. Demand Forecasting

7.1 Proposed in Draft RA Regulations

“6.4 ----- The distribution licensee shall determine the load forecast for each consumer category for which the Commission has determined separate retail tariff.”

7.1.1 Comments Received

MSEDCL submitted that demand forecast for each consumer category is possible MU terms but not in MW terms. TPC requested that consumer-wise assessment should be carried out post implementation of at least 90% smart metering.

7.1.2 Analysis and Commission’s Decision

The Commission is of the view that, the load forecast for each category is the energy forecast and demand can be derived from load research studies. However, as regards to hourly/sub-hourly demand forecast, it is for the entire area of the Distribution Licensee. Hence, the Commission retains the existing provision of the Draft Regulation.

7.2 Proposed in Draft RA Regulations

“6.5 ----- 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)*

7.2.1 Comments Received

TPC requested to clarify if CAGR would be on annual basis and suggested to include enabling provision to cover any other methodology specified by the Authority in its “Guidelines for Medium and Long Term Power Demand Forecast”

7.2.2 Analysis and Commission’s Decision

The Commission has noted the suggestion of the MSEDCL and revised the draft Regulation as under.

7.2.3 Provision in Final RA Regulations

“6.5 ----- 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) on annual basis or long-term average;*
- b) end use or partial end use;*
- c) trend analysis;*
- d) Auto-regressive integrated moving average (ARIMA);*
- e) Artificial Intelligence including machine learning, artificial neural networks (ANN) techniques ;*
- f) econometric (specifying the parameters used, algorithm, and source of data); and.*
- g) any other methodology prescribed by the Authority in its “Guidelines for Medium and Long Term Power Demand Forecast”.*

7.3 Proposed in Draft RA Regulations

“6.8 ----- 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.”

7.3.1 Comments Received

Prayas submitted that the distribution licensees should give a detailed documentation on the reasoning behind the use of specific tools.

7.3.2 Analysis and Commission’s Decision

The Commission is of the view that, the distribution licensees may be given flexibility to use any type of tool and if necessary, provide justification for the methodology used for forecasting. Detailed documentation as such may not be needed. Hence, the Commission decided to **retain existing provision of Draft Regulation.**

7.4 Proposed in Draft RA Regulations

“6.9 ----- Distribution licensee shall 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) energy efficiency measures;*
- b) energy savings and conservation interventions;*
- c) demand response programs;*
- d) demand-side management measures;*
- e) open access;*
- f) distributed energy resources;*
- g) DSM;*
- h) electric vehicles;*
- i) tariff signals;*
- j) changes in specific energy consumption,*
- k) increase in commercial activities with electrification*
- l) increase in number of agricultural pump sets and its solarization*
- m) changes in consumption pattern from seasonal consumers*
- n) availability of supply; and*
- o) policy influences such as 24 X 7 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.”*

7.4.1 Comments Received

Prayas submitted that; future time-of-day (ToD) tariffs should be specifically mentioned. AEML-D submitted that impact of consumer migration between distribution licensees should be considered as a driver.

7.4.2 Analysis and Commission’s Decision

The Commission is of the view that, the provisions of ToD tariffs are covered in the MYT Regulations and demand variation as a result of ToD Tariff impact is expected to be reflected in the Distribution Licensee’s demand forecasting. As regards, inclusion of consumer migration, the Commission is of the view that, the demonstration for RA compliance is ex-ante and not ex-post. So, actual consumer migration shall not have any bearing on demand forecasts. However, the Distribution Licensees are expected to take into consideration the expected

consumers' migrations along with detailed justification while forecasting its future demand. Hence, the Commission decided to **retain the existing provision of the Draft Regulation with addition of the following:**

“p) Distribution licensees are free to consider impact of consumer migration suitably while forecasting their demand, which can be added in analysis if found appropriate.”

7.5 Proposed in Draft RA Regulations

“6.10 ----- The distribution licensee shall take into consideration any other factor not mentioned in clause 6.8 after recording the merits of its consideration. Further, while undertaking demand forecasts, the distribution licensee shall take into consideration the impact and benefits arising out of the demand side management programmes and DSM plans, energy efficiency measures, energy conservation interventions in pursuance of MERC (Demand Side Management Implementation Framework) Regulations, 2010 and amendments thereof.”

7.5.1 Comments Received

Prayas proposed to consider the impact of distributed generation addition in pursuance of MERC (RPO) Regulations, 2024, MERC (Net metering) Regulations, 2023 and GoM policies such as Mukhyamantri Saur Krushi Vahini Yojana 2.0 (MSKVY 2.0).

7.5.2 Analysis and Commission's Decision

The Commission noted the suggestion of Prayas and provision of Regulation 6.10 is revised as below to **provide the necessary enabling provisions** as under.

7.5.3 Provision in Final RA Regulations

“6.10 ----- Distribution licensee shall take into consideration any other factor not mentioned in Regulation 6.9 after recording the merits of its consideration. Further, while undertaking demand forecasts, the distribution licensee shall take into consideration the impact and benefits arising out of the demand side management programmes and DSM plans, energy efficiency measures, energy conservation interventions in pursuance of MERC (Demand Side Management Implementation Framework) Regulations, 2010, and distributed generation resources in pursuance of MERC (Renewable Purchase Obligation, its Compliance and implementation of Renewable Energy Certificate Framework) Regulations, 2019 as amended from time to time and the MERC (Grid Interactive Rooftop Renewable Energy Generating System) Regulations 2019 as amended from time to time and GoM policies such as Mukhyamantri Saur Krushi Vahini Yojana 2.0 (MSKVY 2.0), and amendments thereof.”

7.6 Proposed in Draft RA Regulations

“6.11 ----- The 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.”

7.6.1 Comments Received

Prayas suggested to provide detailed explanation of refinement to forecasts. Additionally, forecasts can initially be at distribution licensee/state-level but then at more spatial level such as zonal/district/circle-wise as per data availability.

7.6.2 Analysis and Commission's Decision

The provisions of the Regulations are self-explanatory. There is no need to ask detailed explanation as a part of the Regulation, however, the Commission can seek a detailed explanation for the methodology adopted by the Licensee as a part of due diligence while approving the power procurement. With regards to spatial assessment, it would be necessary first to assess the need and impact of the same. Accordingly, the Commission decided to retain **the existing provisions of Draft Regulations.**

7.7 Proposed in Draft RA Regulations

“6.12 ----- The summation of energy forecast (MWh) for various consumer categories upon suitably adjusting for captive, prosumer, and open access load forecast, if necessary, as obtained as per clauses 6.4 to clause 6.10, as the case may be, shall be the load forecast for the licensee.”

7.7.1 Comments Received

Prayas suggested to specifically mention, the demand forecast under RA Regulations should be consistent with MYT Regulations.

7.7.2 Analysis and Commission's Decision

The demand forecasts under RA Regulations would precede the MYT Regulatory process and RA planning would be annual whereas MYT would be for control period. Further, the draft MERC MYT Regulations refers provisions of RA Regulations while undertaking power procurement planning. Hence, the Commission has retained the **existing provisions of the Draft RA Regulations.**

7.8 Proposed in Draft RA Regulations

“6.13 ----- The distribution 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.”

7.8.1 Comments Received

AEML-D submitted that the loss trajectory may be as approved by the Commission in the latest tariff order or as per actual loss of previous year, whichever is lower.

7.8.2 Analysis and Commission's Decision

The Commission noted the submission of AEML-D and added the necessary provision in Regulation 6.13 as under.

7.8.3 Proposed in Final RA Regulations

*“6.13 ----- The distribution licensee shall calculate the load forecasts (in MWh) by adding a loss trajectory approved by the Commission in the latest tariff order **or as per actual loss of previous year, whichever is lower.** 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.”*

7.9 Proposed in Draft RA Regulations

“7.5 ----- STU with inputs from MSLDC 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.”

7.9.1 Comments Received

STU submitted that detailed methodology/guidelines for computation of overall demand of the State based on demand estimates provided by each of the distribution licensee should be given. Further, it submitted that there should be stakeholder consultation before finalizing such methodology.

7.9.2 Analysis and Commission’s Decision

The Commission is of the view that, the RA Regulations specifies the methodology and guidelines considering the provisions of the RA Guidelines issued by CEA. The STU may specify the detailed methodology if required to be adopted for the State level RA requirement considering the inputs from the distribution licensees of the State. Further, STU being planning authority, may take inputs from stakeholders while finalising the methodology. The Commission does not find it necessary to specify any separate specific detailed methodology/guidelines for computation of overall demand of the State based on demand estimates provided by each of the distribution licensee

8. Generation Resource Planning

8.1 Proposed in Draft RA Regulations

“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. Some of the important parameters that would be considered for this resource characteristic assessment shall include but not limited to following:

- 9.3.1. Name of the plant (with location, district, taluka, geo-coordinates)
- 9.3.2. Installed Plant Capacity (MW) (existing and planned)
- 9.3.3. Heat rate of thermal generating stations
- 9.3.4. Auxiliary consumption (MW)
- 9.3.5. Maximum and Minimum generation limits (MW)
- 9.3.6. Ramp up and Ramp down rate (MW/min)
- 9.3.7. Minimum up and down time
- 9.3.8. Plant availability factor (%)
- 9.3.9. Average capacity utilisation factor for past 3 years (%)
- 9.3.10. Historical outage rates and planned outage rates
- 9.3.11. Installed Capacity and generation profile of renewable energy generation resources
- 9.3.12. Under-construction / contracted capacity with likely date of commissioning
- 9.3.13. Planned Retirement of capacity or Renovation of capacity with timelines
- 9.3.14. Transmission expansion plans with timelines
- 9.3.15. Evacuation arrangements with timelines for RE generation resources”

8.1.1 Comments Received

TPCL submitted that “minimum up and down time including start-up time” may be included as important parameters for resource characteristic assessment.

8.1.2 Analysis and Commission’s Decision

The Commission has noted the comments of TPCL and revised the draft Regulation 9.3 as under.

8.1.3 Proposed in Final RA Regulations

“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, **minimum up and down time including start-up time, shut-down time** 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. Some of the important parameters that would be considered for this resource characteristic assessment shall include but not limited to following:

- 9.3.1. Name of the plant (with location, district, taluka, geo-coordinates)
- 9.3.2. Installed Plant Capacity (MW) (existing and planned)
- 9.3.3. Heat rate of thermal generating stations
- 9.3.4. Auxiliary consumption (MW)
- 9.3.5. Maximum and Minimum generation limits (MW)

- 9.3.6. Ramp up and Ramp down rate (MW/min)
- 9.3.7. Minimum up and down time **including start-up time, shut-down time**
- 9.3.8. Plant availability factor (%)
- 9.3.9. Average capacity utilisation factor for past 3 years (%)
- 9.3.10. Historical outage rates and planned outage rates
- 9.3.11. Installed Capacity and generation profile of renewable energy generation resources
- 9.3.12. Under-construction / contracted capacity with likely date of commissioning
- 9.3.13. Planned Retirement of capacity or Renovation of capacity with timelines
- 9.3.14. Transmission expansion plans with timelines
- 9.3.15. Evacuation arrangements with timelines for RE generation resources”

9. Planning Reserve Margin (PRM)

9.1 Proposed in Draft RA Regulations

“9.6 ----- 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 with proper justification, which will be subject to approval by the Commission. The value of planning reserve margin considered shall be stipulated in the resource plan along with justifications.”

9.1.1 Comments Received

Prayas submitted that the PRM adopted by the distribution licensee and STU/SLDC at state level should be such that it is at least equal to or higher than the PRM notified by the Authority. Further requested to clarify, how imports/exports would be considered while determining the PRM.

9.1.2 Analysis and Commission’s Decision

The Commission notes the suggestion of Prayas. Resource mix comprises of all contracting arrangements. Further, PRM is an external input while assessing RAR and as provided by the Authority. In line with CEA RA Guidelines, it is difficult to assess generation profile and CC for other states.

9.1.3 Proposed in Final RA Regulations

“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 with proper justification, which will be subject to approval by the Commission, **provided that the PRM adopted by the distribution licensee shall be at least equal to or greater than the PRM adopted by the Authority.** The value of planning reserve margin considered shall be stipulated in the resource plan along with justifications.”

9.2 Proposed in Draft RA Regulations

“11.2 ----- Such Planning Reserve Margin (PRM) factor (for example, 10%) 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 or separately computed by the distribution licensee and STU/SLDC at state level, subject to approval of by Commission, and the same shall be considered by entities in their planning for resource adequacy requirement and generation resource capacity planning.”

9.2.1 Comments Received

MSEDCL submitted that LOLP and NENS should be determined by each distribution licensee independently. RAP submitted that LOLP and NENS used for determining PRM should be uniform. Further, RAP requested to clarify whether the PRM would be determined for base case, or any sensitivity analysis would be carried out. STU submitted that, as per the Regulation, in case PRM and LOLP are not defined by the Authority, then STU needs to define the same for the State. Hence, to ensure methodology is uniform and acceptable to all distribution licensees, STU submitted that such methodology for computing LOLP and PRM by STU should be specified in the Regulations.

9.2.2 Analysis and Commission's Decision

The Commission clarifies that, LOLP and NENS are the reliability metric parameters and the threshold values for the same should be stipulated by the Authority or the Commission. Accordingly, in line with CEA RA Guidelines and FOR Model RA Regulations, the Commission specifies the same in the final regulation as under.

Further, as per Annexure B of CEA RA Guidelines, sensitivity analysis is part of process for calculating reliability parameters including PRM. Future scenarios on demand variations, hydro output, forecast errors etc. are to be developed and PRM is to be incremented till LOLP, NENS are met.

9.2.3 Proposed in Final RA Regulations

*“11.2 ----- Such Planning Reserve Margin (PRM) factor (for example, 10%) 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 **or by the Commission**, and the same shall be considered by entities in their planning for resource adequacy requirement and generation resource capacity planning.”*

10. Capacity Crediting (CC)

10.1 Proposed in Draft RA Regulations

“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.”

10.1.1 Comments Received

AEML submitted that because of constraints of data availability, three-year average or as per latest available data may be considered and not five-year average. MSEDCL submitted that the CC computation may be at a seasonal level (winter/summer/monsoon) of which maximum across all seasons may be considered.

10.1.2 Analysis and Commission’s Decision

While CEA RA Guidelines does not specify period for average of historical years, the FOR Model Regulations have prescribed 5-year average for CC computations. This effectively captures any change in installed capacity or portfolio mix over time. Hence separate methodology for CC computation of existing and new resources may not be necessary.

Further, CEA RA Guidelines don't specify seasonal CC computation. However, FOR Model RA Regulations have prescribed top net load hours (3% or 250 hrs) which capture all seasons. Accordingly, the Commission has **retained the provisions of existing Draft Regulations.**

10.2 Proposed in Draft RA Regulations

“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 (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 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.

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:

$$CC \text{ Factor} = \frac{\text{Sum of RE Generation for Top } x \text{ Hours}}{\text{Sum of RE Capacity for Top } x \text{ Hours}}$$

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.”

10.2.1 Comments Received

AEML submitted that the net load may not be independently arranged in descending order. Prayas submitted that resources such as solar have diminishing CC with increase in penetration + addition of storage can affect CC of technologies such as solar and that such impacts should be captured by the methodology. It further suggested for starting with top net load hours and then moving to Effective Load Carrying Capacity (ELCC) method. TPC submitted that provision for effect of uncontrollable factors may be considered.

10.2.2 Analysis and Commission's Decision

The Commission is of the view that, without arranging net load independently in descending order may lead to a distorted Net Load Duration Curve and would not capture periods of highest contribution. Further, taking five-year average for CC computation would account for averaging out the CC with increasing penetration. The Commission does not find any merit for inclusion of effect of uncontrollable factors. Accordingly, the Commission has **retained the existing provisions of Draft Regulations.**

10.3 Proposed in Draft RA Regulations

“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.”

10.3.1 Comments Received

MSEDCL submitted that water availability of 67.5 TMC is allocated to Koyna Hydra station for generation and MSEDCL utilises the water available to meet its peak demand during the year. It is requested that there shall be flexibility for utilisation of full capacity at any time during the water year. Hence full capacity may be considered against such hydro capacity. Further, TPC submitted that CC factor should not be considered for hydro sources and total contracted capacity should be considered.

Further, RAP submitted that CC factor for BESS should also be considered. Applying Top Net Load Hours would require having information of the duration of the critical demand episodes, in the last five years, since this would allow to make a calculation of the average availability of an energy-constrained resource during those hours. In particular, if a critical demand episode last four hours, a 1-hour duration BESS would be able to provide only 25% of capacity credit, while a 2-hour duration BESS would be able to provide 50%. **The average of the contribution to RA during the critical episodes would be the Capacity Credit of BESS.**

10.3.2 Analysis and Commission's Decision

The Commission notes that, the CEA RA Guidelines does not specify method for hydro CC. However, FOR Model RA Regulations have prescribed with different CC factors for run-of-the-river hydro power projects and dam-based/storage-based hydro power projects based on water availability. Further, CC would reflect the constrained operations limits as reflected in

the historical operations for determination of CC factor for hydro. Additionally, CC factor for hydro cannot be 1 and historical performance for top net load hours would determine CC factor. Accordingly, in line with FOR Model RA Regulations, **CC computation for hydro will be retained as per the existing Draft Regulations.**

However, the Commission recognizes the need for assigning CC value to BESS and adds an enabling Regulation as under.

10.3.3 Provision in Final RA Regulations

“10.5 ----- The computation for CC factor for the storage technology shall be determined using Top Net Load Hours approach or such other methodology as may be prescribed by the Authority.”

11. Resource Adequacy Requirement (RAR)

11.1 Proposed in Draft RA Regulations

“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 at least one hour, or 15 minutes interval as may be decided by the Commission from time to time, but not more than one hour, shall form the resource map of the distribution licensee.”

11.1.1 Comments Received

NUPLLP and AEML submitted that provision of time axis of at least one hour may be removed, and resource map may be clarified/replaced. Further, Prayas requested for clarification on time axis as part of RAR process.

11.1.2 Analysis and Commission’s Decision

The Commission is of the view that, time axis should be part of RA computation. Accordingly, the Regulation 12.1 is revised as under.

11.1.3 Provision in Final RA Regulation

*“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 at least one hour, or 15 minutes interval as may be decided by the Commission from time to time, but not more than one hour, shall form **the basis of resource adequacy plan** of the distribution licensee.”*

11.2 Proposed in Draft RA Regulations

“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.”

11.2.1 Comments Received

MSEDCL submitted that short-term should also be included in computing the resource gap along with medium-term and long-term. Prayas requested to clarify whether the resource gap would be for every hour/15-min interval.

11.2.2 Analysis and Commission’s Decision

The Commission notes the submission of MSEDCL for inclusion of short-term in resource mapping and revises the Regulation as under.

11.2.3 Provision in Final RA Regulation

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

12. Resource Adequacy Allocation

12.1 Proposed in Draft RA Regulations

“12.8 ----- Based on the allocated share in national peak provided in LT-NRAP for the State, STU/MSLDC shall allocate each distribution licensee’s share in the state peak within 15 days of the publication of LT-NRAP based on average of the percentage share in the state coincident peak demand and percentage share in the state non-coincident peak demand.”

12.1.1 Comments Received

MSEDCL submitted that once STU/SLDC allocate each distribution licensee’s share in the state peak, the distribution licensee should provide its views on the same. AEML submitted that allocation should be based on 120% of annual average demand and not based on average of CPD and NCPD.

Further, RAP suggested that RA requirement of distribution licensees should also be with respect to the national CPD. STU requested to revise time from 15 days to 30 days owing to time required for data collection, computation, and communication.

12.1.2 Analysis and Commission’s Decision

The Commission clarifies that the allocation shall be formulated based on the average of CPD and NCPD in a combination of bottom-up and top-down approach, with multiple levels of computations, consolidations, and verifications. Hence, there is no need to add another layer

for distribution licensees to provide their views on STU/SLDC's allocation of share of each distribution licensee. Accordingly, in line with FOR Model RA Regulations, the Commission has retained the existing provisions of the Draft Regulations.

Further, the Commission is of the view that, allocating each distribution licensee's share purely on the basis of 120% annual average demand will be sub-optimal. Allocating based on average of CPD and NCPD will ensure optimal utilization of resources and that a distribution licensee's own peak is also met. Accordingly, in line with FOR Model RA Regulations, the Commission has retained the provisions of the existing Draft Regulations.

Further, timelines as separately provided by the Commission for the first year and as per the Regulations for the second year will be followed.

12.2 Proposed in Draft RA Regulations

"12.9 ----- The distribution licensee based on the above allocation shall accordingly plan to contract the capacities to meet their Resource Adequacy Requirement (RAR) while ensuring that their own peak demand plus PRM is met."

12.2.1 Comments Received

AEML submitted that distribution licensees should contract to meet own peak demand and not plus PRM, and that DAM/RTM contracts should also be counted towards the same. Prayas requested to clarify whether RA requirement is for one instance when peak demand occurs or for all hours of the year.

12.2.2 Analysis and Commission's Decision

The Commission discussed that contracting against allocated RA requirement based on average of CPD and NCPD will ensure optimal utilization of resources and that a distribution licensee's own peak is also met. The Commission is of the view that, DAM/RTM are energy products and same cannot be considered for demonstration of RA compliance which is for ex-ante capacity contracting. Accordingly, the Commission has retained the existing provisions of the Draft Regulations.

With regards to instance for RA requirement, the Commission is of the view that, when peak demand plus PRM is met then it implies that all remaining period the demand would be met reliably after considering capacity factor.

12.3 Proposed in Draft RA Regulations

"12.10 ----- The distribution licensee shall keep minimum 70% Long-term contracts, minimum 20% Medium-term contracts, and the rest to be met through Short-term contracts."

12.3.1 Comments Received

NUPLLP submitted that 50% contracts should be through long-term and 50% through mix of medium-term and short-term. AEML submitted that 60-70% should be through mix of long-

term and medium-term, with rest through short-term. TPC submitted that 80% should be through mix of long-term and medium-term and rest through short-term, with share of DAM not more than 10%. Further, NUPLLP and Prayas requested to include DAM purchases in RA framework.

Further, Prayas asked to clarify whether RA requirement is for one instance when peak demand occurs or for all hours of the year.

12.3.2 Analysis and Commission's Decision

As per MoP letter dt. 8 April 2024, at least 80% should be through long-term to meet national peak demand, while at least 75% should be through long-term to meet state peak demand. Given the MoP letter and FOR Model Regulations, the Commission has decided that the allocation ratios should be retained as per Draft Regulations. Further, exchange transactions cannot be considered towards RA compliance, which is demonstration of contracted capacity. Accordingly, the Commission will retain the existing Draft Regulations.

12.4 Proposed in Draft RA Regulations

“12.13 ----- RA requirement planning of the state shall be done with reference to national coincident peak and of distribution licensees with reference to average of share in state coincident peak and share in state non-coincident peak, to optimize requirement of incremental capacity addition through annual rolling plan. Mid-term review of state RA requirement planning shall be conducted to check for events of slippages by states, if any.”

12.4.1 Comments Received

MSEDCL requested to clarify periodicity of mid-term review.

12.4.2 Analysis and Commission's Decision

The Commission clarifies that timelines and annual rolling calendar for RA planning are provided as part of RA Regulations, with special provision for the first year of execution.

Hence, the Commission decided to retain the existing Draft Regulations.

13. Power Procurement

13.1 Proposed in Draft RA Regulations

“14.6 ----- The distribution licensee shall contract storage capacity corresponding to the results of 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.”

13.1.1 Comments Received

Prayas and TPC submitted that not just BESS and PSP but any other type of storage should also be included in the above Regulation. Further, TPC submitted that storage need not be an obligation and option should be given to the distribution licensee to contract.

13.1.2 Analysis and Commission's Decision

The Commission discussed that there is a lot of research and development happening in energy storage systems. While BESS and PSP are at deployment stage, there are many other technologies coming up. From a future perspective, it recognizes importance to have provision for other such storage technologies as well. Hence, the Commission will add the necessary enabling provision as under.

13.1.3 Provision in the Final Regulations

“14.6 ----- The distribution licensee shall contract storage capacity corresponding to the results of MT- DRAP capacity addition requirement for future years from Battery Energy Storage System (BESS) and/or Pump Storage Projects (PSP) or any other storage technology based on the availability of resources as per the guidelines for tariff based competitive bidding process notified by the Ministry of Power.”

13.2 Proposed in Draft RA Regulations

“14.7 ----- The distribution licensee may contract power through Central Agencies / Intermediaries / Traders / Aggregators / Power Exchanges or through agreements / Banking arrangements with other distribution licensees in compliance with competitive bidding guidelines.”

13.2.1 Comments Received

TPC suggested for broadening the scope of options for power contracting to include Independent Power Producers (IPPs)/ Captive Power Plants (CPPs) etc.

Further, New Age Markets in Electricity Pvt. Ltd. (NAME) has submitted request to include definition of *“Over-the-counter (OTC) Platform.”*

13.2.2 Analysis and Commission's Decision

The Commission has added the necessary enabling provision as under.

13.2.3 Provision in the Final Regulations

“14.7 ----- The distribution licensee may contract 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 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.

13.3 Proposed in Draft RA Regulations

“14.8 ----- The distribution licensee may procure power on Short-term and Medium-term basis through DEEP and PUSHP portal.”

13.3.1 Comments Received

TPC suggested that along with DEEP and PUSHP, power exchanges, Bharat-Electronic Tender Portal, OTC Platforms, and any other Government portal may be added.

13.3.2 Analysis and Commission's Decision

OTC is covered in Regulation 14.7 and hence no need for revision in the existing Regulation 14.8 is not required.

13.4 Proposed in Draft RA Regulations

“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 state shall be optimized. For further optimization, procurement contract shall be decided first within the state subject to the least cost resource availability considering transmission constraints & cost of transmission for procurement from outside the state and then across states if necessary.”

13.4.1 Comments Received

AEML submitted that instead of requiring initial level optimization within the State, same may be made optional or removed altogether. TPC submitted that STU/SLDC shall declare available transmission corridor on web portal.

13.4.2 Analysis and Commission's Decision

The Commission clarifies that to avoid over-contracting, it is important to first optimize within State. However, in case more economical power is available from outside State, the procurer shall have that option too. Further, the Commission also accepts suggestion of TPC regarding declaration of the available transmission corridor on web portal. Hence, the Commission has revised the Regulation as under.

13.4.3 Provision in the Final Regulations

*“15.1 ----- The distribution licensee, while determining the modalities and tenure of procurement of resource mix, **may** ensure that at the initial level, available capacity within the state shall be optimized. For further optimization, procurement contract shall be decided first within the state subject to the least cost resource availability considering transmission constraints & cost of transmission for procurement from outside the state and then across states, if necessary,*

provided that STU/SLDC shall declare available transmission corridor on web portal, accessible to all stakeholders, to enable the distribution licensee to plan its power purchase accordingly.”

13.5 Proposed in Draft RA Regulations

“15.3 ----- The distribution licensee shall 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 state peak. Only resources with long / medium / short-term contracts shall be considered to contribute to the RAR.”

13.5.1 Comments Received

MSEDCL sought clarification as to whether the distribution licensee needs to demonstrate tie-up only with the proposed plan to meet the peak demand or it needs to demonstrate actual tie-up with named sources at the time of submission of the RA plan. NUPLLP submitted that demonstration should be of 80% tie-up for first year and 50% for 2nd year. AEML submitted that demonstration should be of 70% for first year and 50% for 2nd year.

13.5.2 Analysis and Commission’s Decision

The Commission clarifies that it is important to ensure tie-up to meet RA requirement. Vide MOP letter dt. 8 April 2024, distribution licensees must demonstrate 100% tie-up for the first year and at least 90% tie-up for the second year. Hence, the provision of Draft Regulation 15.9 is retained.

13.6 Proposed in Draft Regulations

13.6.1 Comments Received

Multiple stakeholders, including NUPLLP, TPC, MSEDCL, and Prayas submitted need for congruence with MYT regulations with respect to Power Procurement.

13.6.2 Analysis and Commission’s Decision

The Commission discussed that Power Procurement has been removed from Draft MYT Regulations 2024 (which were part of the MYT Regulations 2019) for reasons of expected inclusion in RA Regulations and further consistency. Accordingly, the Commission has added Regulations 15.2 – 15.7 to the Draft Regulations.

13.6.3 Provision in the Final Regulations

“15.2 The distribution licensee shall prepare a power procurement plan which shall comprise of the following:

- a) Demand forecast as per Regulation 6 and Regulation 7;*
- b) An estimate of the quantities of electricity supply from the identified sources of power purchase, including own generation if any;*

- c) *An estimate of availability of power to meet the resource adequacy requirement as per Regulation 12;*
- d) *Standards to be maintained with regard to quality and reliability of supply, in accordance with the relevant Regulations of the Commission;*
- e) *Measures proposed for energy conservation, energy efficiency, and Demand Side Management;*
- f) *The requirement for new sources of power procurement, including augmentation of own generation capacity, if any, and identified new sources of supply, based on (a) to (e) above;*
- g) *The sources of power, quantities, and cost estimates for such procurement*

15.3. Where the Commission has specified a percentage of the total consumption of electricity in the area of a Distribution Licensee to be purchased from co-generation or renewable sources of energy, the power procurement plan shall include the plan for procurement from such sources up to the specified level.

15.4. The Distribution Licensee shall forward a copy of its power procurement plan to the State Transmission Utility for verification of its consistency with the transmission system plan for the intra-State Transmission System, prepared in accordance with the Regulations of the Commission governing Transmission Open Access:

Provided that the Distribution Licensee shall also consult the State Transmission Utility at the time of preparation of the power procurement plan, to ensure consistency of such plan with the transmission system plan.

14. Capacity Sharing

14.1 Proposed in Draft RA Regulations

“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 capacity available within the state through competitive sharing arrangements or other mechanisms, and then use the platform for inter-state capacity sharing or trading mechanism if created by the Central Commission or other mechanisms as the case may be, and optimize the capacity costs as far as possible.”

14.1.1 Comments Received

AEML requested to remove this Regulation because shortfall if any is already being met by distribution licensees through short-term contracts including DAM/RTM and hence there is no need of capacity sharing or trading constructs. Further, MSEDCL submitted that the capacity utilisation may not be seen separately for within state and outside state. As far as the capacity is available at least cost to the distribution licensee through competitive bidding, irrespective of whether it is within or outside state, the Licensee shall consider such capacity. Further, TPC suggested to add the following proviso:

“Provided that all generators and DISCOMs shall declare extra capacity available indicating quantum and period on shared portal, accessible to all the stakeholders.”

14.1.2 Analysis and Commission’s Decision

The Commission discussed that a common capacity sharing/trading construct will ensure further optimality and transparency. It notes the suggestion of TPC and added the proviso. Further, it clarifies that, it is important to retain the existing Draft Regulation to ensure optimal resource utilisation within the State.

14.1.3 Provision in Final RA Regulations

“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 capacity available within the state through competitive sharing arrangements or other mechanisms, and then use the platform for inter-state capacity sharing or trading mechanism if created by the Central Commission or other mechanisms as the case may be, and optimize the capacity costs as far as possible.

provided that all generators and distribution licensees shall declare extra capacity available indicating quantum and period on shared portal, accessible to all stakeholders.

14.2 Proposed in Draft RA Regulations

“16.3----- The distribution licensee, the STU and the MSLDC shall seek approval of the Commission to the procurement plan as well as Annual Rolling Plans.”

14.2.1 Comments Received

MSETCL requested to clarify whether a joint Petition will be filed by STU with each distribution licensee for getting approval of the Annual Rolling Plan or whether the STU will file a single Petition on behalf of all distribution licensees.

14.2.2 Analysis and Commission’s Decision

Distribution licensees are required to seek approval on their Power Procurement and Annual Rolling Plan i.e. MT-DRAP and ST-DRAP. Whereas the Commission would seek inputs from STU/SLDC on such plans for ensuring consistency with state-level aggregation prepared by STU/SLDC. Hence, there is no joint petition to be filed by STU/SLDC along with any distribution licensee or on behalf of all distribution licensees. Accordingly, the Commission has modified the Draft Regulation to provide necessary clarification.

14.2.3 Provisions in Final RA Regulations

“16.3 ----- Distribution licensee shall seek approval of the Commission for the Power Procurement as well as Annual Rolling Plan i.e. MT-DRAP and ST-DRAP. For approval of such plans, the Commission shall seek inputs from STU/SLDC to ensure consistency with the state-level aggregation carried out by STU/SLDC.”

15. Monitoring and Compliance

15.1 Proposed in Draft RA Regulations

“12.15 ----- The Commission shall approve MT-DRAP and ST-DRAP of the distribution licensees by 30th September 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/state peak respectively as determined by Authority/NLDC/RLDC and STU/SLDC, as the case may be.”

15.1.1 Comments Received

NUPLLP submitted that ST-DRAP should be excluded from approval. Further, Prayas submitted that planning should be for MT and LT whereas approval only for ST and MT.

15.1.2 Analysis and Commission’s Decision

The Commission is of the view that it is important to plan for and approve both ST and MT for ensuring successful implementation of RA. MT is important for consistency with MYT procurement period. However, since the objective of LT is consistency with the national framework, it may be excluded from approval process at the State level. Accordingly, the Commission has revised the relevant draft regulations to provide necessary clarifications as under.

15.1.3 Provision in Final RA Regulations

*“12.14 ----- The Commission shall approve MT-DRAP and ST-DRAP of the distribution licensees by 30th September 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/state peak respectively as determined by Authority/NLDC/RLDC and STU/SLDC, as the case may be. **LT-DRAP shall be for purposes of planning and consistency with national framework.**”*

*“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. **ST-DRAP and MT-DRAP shall be to be submitted to Commission for approval while LT-DRAP shall be for planning and consistency with national framework.**”*

15.2 Proposed in Draft RA Regulations

“19.1 ----- Monitoring and Reporting: Based on the MT-DRAP and ST-DRAP, STU and MSLDC shall communicate the state-aggregated capacity shortfall to the Commission by 15th September of each year for the ensuring year(s) and advise the distribution licensees to commit

additional capacities. The Commission shall approve RA plans by 30th September of each year.”

15.2.1 Comments Received

MSEDCL submitted that once the distribution licensee has determined the Resource Adequacy Requirement in line with these Regulations as specified above, it would not be appropriate to again check for state aggregated capacity shortfall and accordingly provide a plan for additional capacities. This would result in additional burden of capacities for the distribution licensees.

15.2.2 Analysis and Commission’s Decision

The Commission clarifies that, it is necessary for STU/SLDC to ascertain the state level RA compliance, upon factoring RA plans of DISCOMs, to be aligned with national RA plan requirement stipulated by CEA (LT) and NLDC (ST) basis.

15.3 Proposed in Draft RA Regulations

“19.2 ----- 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.”

“19.4 ----- The rate of Non-compliance charges shall be equivalent to 1.1 times the Marginal Capacity Charge (Rs/kW/month) or 1.25 times the Average Capacity Charge (Rs/kW/month) whichever is higher, as approved by the Commission for the power procurement by concerned distribution licensee under its ARR/Tariff Order for the relevant financial year, unless separately specified by the Commission.”

15.3.1 Comments Received

TPC requested for trial period of 2 years without any non-compliance charges. NUPLLP requested for a phased implementation without any penalty. MSEDCL requested for no non-compliance charges for 4-5 years. AEML suggested penalty not linked with demonstration of % tie-up with no penalty for ensuing MYT control period and that penalty can be later decided based on operational experience. RAP suggested to make payments of thermal generators contracted by DL to be contingent on being available during the real critical hours.

15.3.2 Analysis and Commission’s Decision

The Commission is of the view that, each regulation is legal statute and non-compliance of regulations shall attract the penal provisions by following due regulatory process. The utilities may approach the Commission in case of difficulty in compliance with due justifications which the Commission would consider on merit.

16. Data Requirement and Publication on Website

16.1 Proposed in Draft RA Regulations

“20.1 ----- Distribution licensees shall maintain and share with STU/MSLDC 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.”

16.1.1 Comments Received

STU requested to clarify/specify way forward in case the distribution licensees are unable to submit the required details within the stipulated time and that the STU won't be held responsible for such delays.

16.1.2 Analysis and Commission's Decision

The Commission clarifies that all obligated entities are bound by the provisions of the Regulations and follow the timelines mentioned in these Regulations and shall be liable to non-compliance penalties upon failure to do so.

16.2 Proposed in Draft RA Regulations

“20.3 ----- 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.”

16.2.1 Comments Received

MSEDCL submitted that under non-availability of data set, methodology for computation of contribution of consumer category to peak demand should be specified.

16.2.2 Analysis and Commission's Decision

The Commission is of the view that, it is up to the distribution licensees to undertake studies on sample basis, as also with introduction of smart meters, meter data information (with timestamp) for consumer categories would be available for such studies. The existing provision Draft Regulation is retained.

16.3 Proposed in Draft RA Regulations

“20.5 ----- 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 MSLDC for computation of state-level capacity credit factors and for preparation of state-level assessment.”

16.3.1 Comments Received

MSEDCL submitted that hourly generation data that is required for the assessment is available with MSLDC. Prayas submitted that the data collected should be made publicly available. STU requested to clarify/specify way forward in case the distribution licensees are unable to submit the required details within the stipulated time and that the STU won't be held responsible for such delays. Further, it suggested the following modification in the Regulation:

“20.5 ----- 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 MSLDC for computation of state-level capacity credit factors and for preparation of state-level assessment as per the stipulated time provided in these Regulations. STU may follow the way forward/action plan as defined in these Regulations, if in case the Distribution Licensee fails to share the required data on the stipulated time defined by the Commission.”

16.3.2 Analysis and Commission's Decision

The Commission discussed that the distribution licensees also have access to such information and may separately establish protocol with MSLDC for gathering such data. Hence, the Commission decided to retain the existing Draft Regulation.

Further, MSLDC/STU may separately formulate procedure for making data publicly available.

Further, the Commission discussed that all obligated entities are to follow the timelines as mentioned in these Regulations and will be liable to non-compliance penalties upon failure to do so. Hence, the timeline or way forward need not be specified again here. Hence, the Commission decided to retain the existing Draft Regulation.

16.4 Proposed in Draft RA Regulations

“22.1 ----- The monthly/weekly/day-ahead/intraday power procurements/sale by the distribution licensee and generator schedule shall be made available on the websites of the distribution licensees and MSLDC within 45 days of such procurements/sale with ease of access to the current as well as archived data.”

16.4.1 Comments Received

NUPLLP submitted that power purchase/sale related schedules are published on MSLDC website and the same may be considered to meet the requirement as per draft Regulation to avoid duplication / repetition.

Further, AEML submitted that requirement of 45 days may be removed from the Regulations.

16.4.2 Analysis and Commission's Decision

The Commission discussed that these requirements are for RA compliance by distribution licensees for information to be supplied to Authorities incl. SLDC/STU/CEA. It needs to be compiled by the distribution licensees.

Further, the Commission discussed that publication of information on website is necessary for sake of transparency and information of all stakeholders.

Hence, the Commission decided to retain the existing Draft Regulation.

17. Dedicated Cells by Distribution Licensees

17.1 Proposed in Draft RA Regulations

“23.1 ----- The Distribution Licensees shall establish a planning cell for Resource Adequacy within three months of the Regulation coming into force. The cell shall have the requisite capability and tools for demand forecast, capacity, RE integration etc.”

17.1.1 Comments Received

NUPLLP submitted that manpower cost for establishing cells should be separately approved in MYT Tariff Order.

17.1.2 Analysis and Commission’s Decision

The Commission clarifies that distribution licensees are obligated entities and required to comply with Regulations.

17.2 Proposed in Draft RA Regulations

“23.3 ----- The distribution licensee shall make the Resource Adequacy Plan in consultation with State Sector Generating Companies, other Distribution Licensees, Central Sector Generating Companies, Transmission Companies, National / Regional /State Load Dispatch Centers, and Central Electricity Authority. It may also make enquiries with the Trading Companies and States with surplus power to estimate the likely availability and price of power across the country for peak, off-peak and normal periods.”

17.2.1 Comments Received

Prayas submitted that public consultation of at least one month should be included as part of process. Further, SLDC should play a larger role and consider calculating PRM at state level.

17.2.2 Analysis and Commission’s Decision

Since the RA process is already multi-layered with multiple levels of review and approval, the Commission is not including any separate public consultation for RA approval. Further power procurement for RA compliance by distribution licensees is already covered under MYT proceedings.

**Sd/-
(Surendra J. Biyani)
Member**

**Sd/-
(Anand M. Limaye)
Member**

**Sd/-
(Sanjay Kumar)
Chairperson**

Annexure- I

Sr. No.	Name of Stakeholders
1	Adani Electricity Mumbai Ltd. (AEML)
2	AEML SEEPZ Ltd. (ASL)
3	Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL)
4	State Transmission Utility (MSETCL or STU)
5	New Age Markets in Electricity Pvt. Ltd. (NAME)
6	Nidar Utilities Panvel LLP (NUPLLP)
7	Prayas Energy Group (Prayas)
8	Regulatory Assistance Project (RAP)
9	Tata Power Company Ltd. (TPC)
10	The World Bank