

Bhopal, the 17th February 2023

No. 378/ MPERC-2022. In exercise of the powers conferred under sub section (1) of section 181 read with clause (b) of sub-section (1) of section 86 of the Electricity Act, 2003 (36 of 2003), the Madhya Pradesh Electricity Regulatory Commission, hereby, proposes to revise the Madhya Pradesh Electricity Regulatory Commission (Power Purchase and Procurement Process) Regulations, Revision I, 2006.

Madhya Pradesh Electricity Regulatory Commission (Power Purchase and Procurement Process) Regulations, 2023 {RG-19(II) of 2023}

Part I – General

1. Short title and commencement. -

- 1.1 These Regulations shall be called the "Madhya Pradesh Electricity Regulatory Commission (Power Purchase and Procurement Process) Regulations, 2023 {RG-19(II) of 2023}".
- 1.2 These Regulations shall apply to all the Distribution Licensees in the territory of the State of Madhya Pradesh and shall be applicable to all purchases of power from Conventional and Renewable sources of energy made or proposed to be made by a Distribution Licensee.
- 1.3 These Regulations shall come into force from the date of their publication in the Official Gazette.

Part II – Definitions

2. Definitions

- 2.1 In these Regulations, unless the context otherwise requires,
 - a) "Act" means the Electricity Act, 2003 (36 of 2003);
 - b) "Commission" means the Madhya Pradesh Electricity Regulatory Commission;
 - c) "Long-term Power Procurement" means procurement of power under any arrangement or agreement with a term or duration exceeding five years;
 - d) "Medium-term Power Procurement" means procurement of power under any arrangement or agreement with a term or duration exceeding three months and upto five years;
 - e) "Month" means a calendar month as per the British Calendar;

- f) **“Power Exchange”** means any Exchange operating as power exchange for electricity in terms of the guidelines issued by the Central Electricity Regulatory Commission;
- g) **“Power Purchase Agreement (PPA)”** means the agreement entered into between the Procurer and the Seller pursuant to which the Seller shall supply power to the Procurer as per the terms and conditions specified therein;
- h) **“Power Sale Agreement (PSA)”** shall mean the back-to-back agreement entered into between the Buying Entity and the Intermediary Procurer/Trader for onward sale of power purchased under any Power Purchase Agreement;
- i) **“Short-term Power Procurement”** means procurement of power under any arrangement or agreement with a term or duration upto 3 months; and
- j) **“Year”** means a financial year commencing on 1st April of the year and ending on 31st March of the succeeding year.

2.2 Words and expressions which are not defined in these Regulations shall have the same meaning as assigned to them in the Act or Regulations/ Codes of the Commission. In case of any inconsistency between these Regulations/Codes and the Act, the meaning assigned to them in the Act shall prevail.

Part III – Power Procurement Plan

- 3.1 The Distribution Licensee shall prepare the Power Procurement Plan comprising of resource planning to optimize supply resources economically for a period of 5 years with due regard to requirement of electricity in its area of supply and submit a rolling 5-year plan every year duly revising the projections and plans for the ensuing years to the Commission. The plan may include long-term, medium- term and short-term sources of power purchases as per demand – supply position in accordance with these Regulations.
- 3.2 The Power Procurement plan shall be a long-term forecast for power demand and energy requirement considering the need for development of long-term / medium-term / short-term Power Purchases Agreement /arrangements with:
- a) State-owned old as well as new generation sources;
 - b) Central sector Plants;
 - c) Independent Power Producers (IPPs);
 - d) Captive Power Plants;

- e) Renewable Power Plants including Co-gen Plants;
- f) Power Trading Companies;
- g) Procurement through Market / Power Exchange;
- h) Storage options such as Battery Energy Storage System, Pump Storage Projects etc.;
- i) Banking of power with other States; and
- j) Any other source.

Part IV – Framework for Power Procurement Planning

- 4.1 The Distribution Licensee shall submit the Power Procurement Plan along with necessary supporting documents and formats (attached as Annexure to these Regulations) every year on or before 31st July to the Commission:

Provided that initial power procurement plan after notification of these Regulations shall be submitted by the Distribution Licensees for a time period aligned with the Control period of MPERC MYT Regulations.

- 4.2 The 5-year rolling plan shall be comprised of the following, namely : -

- a) Category wise monthly sales along with monthly and yearly energy requirement (Million Units) for each year.
- b) Assessment of monthly and yearly availability from State owned stations and purchases from all stations or sources with which Licensee has long-term/medium-term Power Purchase Agreement.
- c) Assessment of the demand-supply gap considering peak, and off- peak periods (as per daily/monthly load curve) and plans to bridge the deficit and resource planning accordingly.
- d) Quantum of purchase to be made from Renewable Energy Plants considering the approved Renewable Purchase Obligation (RPO)trajectory to meet the RPO requirement as specified in the MPERC (Co-generation and generation of electricity from Renewable Sources of Energy) (Revision-II) Regulations 2021 and amendments thereof.
- e) The demand forecast and assessment of availability shall be as detailed out in Regulations 4.5 to 4.21 below.

f) Deviation from projections as submitted for previous years along with reasons for such deviations.

4.3 While examining the plan, the Commission may call for such additional information and data as it may deem necessary to examine the Power Procurement Plan and the Distribution Licensee shall furnish such information, as and when required by the Commission. During technical validation, the Licensee shall demonstrate the power procurement forecast methodology.

4.4 The Commission shall provide in-principle approval to the plan submitted by the Licensees.

A. Demand and Energy Forecast:

4.5 The forecasting for demand and energy requirement shall be based on trends and statistical analysis of historical data of at least past 7-10 years.

4.6 Category wise (as per retail supply tariff order) monthly sales projections along with monthly and yearly energy requirement forecast shall be done considering the year-on-year growth/Compound Annual Growth Rate (CAGR) for past period and time series analysis. The Licensee shall also carry out Load Research studies of various consumer categories to understand their consumption pattern and how diversity in their usages helps in aligning demand curve with power availability curve.

4.7 While forecasting the demand:

1) Licensee shall use IT Tools to minimize human intervention to arrive at realistic figures by adopting the approach such as Partial End Use Method (PEUM) or other models like Econometric Analysis through use of economic parameters such as growth in Gross Domestic Product(GDP), per capita income, penetration of appliances, growth in electricity-intensive industries etc.

2) State specific customized artificial intelligence (AI) tools using deep/machine learning may also be used for Forecasting Demand and Energy Requirement.

3) The effectiveness of tool used along with measures taken to improve accuracy shall be shared with the Commission along with power procurement plan every year during technical validation.

4.8 The effect of important festivals, working days or non-working days, Peak and Off-peak hours load pattern, seasonal variations, rabi/kharif season shall also be considered.

- 4.9 While estimating the sales for consumer categories, the Licensee shall consider the growth in number of consumers for categories, expected increase in connected load (kW), applications for load enhancement/load reduction/new connections/disconnections and the month-wise energy consumption for each consumer category. The inputs received from Government Bodies viz. Water Works, Agriculture etc. shall also be considered.
- 4.10 For agricultural loads, the season wise change in load, temperature, area wise rainfall pattern, impact of water level in agricultural pockets, irrigation facilities, area wise type of crop like Paddy, Cummins, Moong etc., power supply pattern for agriculture loads and variation in load pattern during agriculture season shall be taken into account to accurately estimate their requirement. In case more than one crop is being taken, its impact shall also be considered.
- 4.11 The Ex-bus requirement of Discoms' demand and energy forecast shall also be done considering sale to such other Distribution Licensees procuring power from Discoms.
- 4.12 Other factors that need to be considered during estimation of demand and energy requirement are impact due to:
- a) Storage capacities like Batteries, Pump Storage Projects, Electric Vehicle charging stations etc.;
 - b) Sale to railways and open access consumers;
 - c) Decentralized renewable energy plants set up under various initiatives.
 - d) Implemented energy efficiency schemes;
 - e) Demand side management, demand response program for instance, load shifting from non-sunny hours to sunny hours for maximum utilization of solar resource; and
 - f) Demand due to new schemes implemented by GoMP/Central Government.

B. Assessment of Availability:

- 4.13 The Licensee shall carry out technology/fuel wise categorization of existing generation capacity and any pipeline capacity which has been planned to be added to get an optimal energy mix to meet the rise in power demand.
- 4.14 The Licensee shall develop a resource plan with different scenarios for RE integration with conventional power sources and adoption of different storage technologies to meet the peak load during high demand seasons.

- 4.15 While developing a cost-optimal resource plan, factors such as variable cost, useful life of plant or till expiration of PPA, technical minimum, up-time/down-time, unit commitment constraints may also be considered.
- 4.16 The Plant Availability Factor (PAF) of operational State/ Central Thermal Generating stations and Independent Power Producers (IPPs) shall be considered based on past performance for last 3 years to estimate the availability of power. PAF for all new/upcoming thermal projects shall be considered as per norms provided in State/Central Tariff Regulations.
- 4.17 The Capacity Utilization Factor (CUF) of existing solar and non-solar power plants shall be considered on the basis of past performance of the plant. For new/upcoming projects the CUF shall be estimated as per PPA of the plant.
- 4.18 For estimating availability from Hydro Power Plants (HPPs), the Licensee shall also consider past years rainfall pattern and corresponding actual month wise energy availability in consultation with concerned Reservoir Authority for their water discharge programme along with State Load Dispatch Center (SLDC) and State Generating Company, thereby reflecting the seasonal variation in generation pattern for estimating the quantum of energy for forthcoming years.
- 4.19 For operational State/Central Generating Stations and IPPs, the Auxiliary Consumption shall be determined based on past performance for last 3 years. For new/upcoming power projects the Auxiliary Consumption shall be determined based on normative parameters as laid down in State/Central Tariff Regulations.
- 4.20 The quantum of energy to be procured from renewable energy plants shall be determined considering the RPO trajectory in the MPERC (Co-generation and generation of electricity from Renewable Sources of Energy) (Revision-II) Regulations 2021 and amendments thereof.
- 4.21 While estimating the energy availability, the Licensee shall explore other options like banking/power market and bilateral arrangements with other state-owned utilities to ensure power availability during Peak Periods.
- 4.22 Any new Capacity arrangement/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.

4.23 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 Central Government/Commission from time to time.

4.24 Any new power purchase agreement for long/medium-term or amendments to existing long/medium-term Power Purchase Agreements (PPA's)/ Power Sale Agreement (PSA) entered into by the Distribution Licensee shall be subject to the prior approval of the Commission:

Provided that in case of short-term purchases, the Licensees shall submit details within 45 days of such procurement for information of the Commission.

4.25 Distribution Licensees shall submit the list of all existing Power Purchase Agreements executed with different conventional power plants as well as RE Generators along with the Power Procurement Plan.

Part V-Variation in Power Purchase

5. The Distribution Licensee may undertake additional power procurement during the year, over and above the power procurement plan, in accordance with these Regulations:

Provided further that where there has been an unanticipated increase in the demand for electricity or a shortfall or failure in the supply of electricity from any approved source of supply during the year or when the sourcing of power from existing tied-up sources becomes costlier than other available alternative sources, the Distribution Licensee may enter into additional agreement or arrangement for procurement of power:

Provided that the Distribution Licensee may enter into a short-term arrangement or agreement for procurement of power when faced with emergency conditions that threaten the stability of the distribution system, or when directed to do so by the SLDC/RLDC to prevent grid failure or during exigency conditions and for banking with other states on short-term basis without prior approval of the Commission. The details of such short-term purchases shall be submitted within 45 days of such procurement for information of the Commission.

Part VI-Placing of information on websites

6.1 The monthly/weekly/day-ahead/intraday power procurements/sale by the Licensees and generator schedule shall be made available on the websites of the Licensees and SLDC within 30 days of such procurements/sale with ease of access to the current as well as archived data.

- 6.2 SLDC shall also publish the monthly Merit Order Dispatch (MoD) stack along with per unit variable cost of each generating station in its website.

Part VII Constitution of dedicated cells

- 7 The Distribution Licensees shall establish a planning cell for power procurement within three months from the Regulation coming into force. The cell shall have the requisite capability and tools for energy forecast. Another round the clock dedicated cell shall also be constituted by the Distribution Licensees for power purchase/sale in real-time, and also undertake intra-day, day-ahead, week ahead power procurement through Power Exchanges or any other means. The Licensees shall frame suitable guidelines for the modus operandi of the dedicated cells in line with the spirit of this Regulation and shall apprise the Commission for the same within 45 days from the coming into force of these Regulations.

Part VIII-Assessment to involve consultation

- 8 The Distribution Licensee shall make the power procurement plan in consultation with State sector Generating Companies, other Distribution Licensees, MPPMCL, Central sector Generating Companies and Transmission Companies, National / Regional Load Dispatch Centres, Central Electricity Authority. It shall 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.

Part IX – Miscellaneous

A. Non-Compliance of these Regulations:

- 9.1 In the event of the Distribution Licensee not complying with these Regulations, the Commission, in addition to imposing such penalty as it may deem fit, may initiate Suo-Motu proceedings as per appropriate provisions of the Electricity Act 2003.

B. Issue of Orders and Practice Directions:

- 9.2 Subject to the provisions of the Electricity Act 2003 and these Regulations, the Commission may, from time to time, issue orders and practice directions with regard to the implementation of the regulations and procedure to be followed.

C. Powers to Remove Difficulties:

- 9.3 If any difficulty arises in giving effect to any of the provisions of these Regulations, the Commission may, by general or special order, direct the SLDC, Generators, Licensees and the Open Access Customer, to take suitable action, not being inconsistent with the provisions of the Act, which appears to the Commission to be necessary or expedient for the purpose of removing the difficulties.
- 9.4 The Open Access Customers, Generators, Licensees and SLDC may make an application to the Commission and seek suitable orders to remove any difficulty that may arise in implementation of these Regulations.

D. Power to amend:

- 9.5 The Commission may from time to time add, vary, alter, modify or amend any provisions of these Regulations after following the necessary procedures.

E. Repeal and Savings:

- 9.6 Nothing in these Regulations shall be deemed to limit or otherwise affect the inherent power of the Commission to make such orders as may be necessary to meet the ends of justice or to prevent abuses of the process of the Commission.
- 9.7 Nothing in these Regulations shall bar the Commission from adopting in conformity with the provisions of the Act a procedure, which is at variance with any of the provisions of these Regulations, if the Commission, in view of the special circumstances of a matter or class of matters and for reasons to be recorded in writing, deems it necessary or expedient for dealing with such a matter or class of matters.
- 9.8 Nothing in these Regulations shall, expressly or impliedly, bar the Commission dealing with any matter or exercising any power under the Act for which no Regulations have been framed, and the Commission may deal with such matters, powers and functions in a manner it thinks fit.
- 9.9 The MPERC (Power Purchase and Procurement Process) Regulations, Revision-1, 2006 published vide Notification No. 992/MPERC/2006 dated 10/04/2006 in the official Gazette and read with all amendments thereto, as applicable to the subject matter of this regulation are hereby superseded.

By order of the Commission,
UMAKANTA PANDA, Secy.

Format-1

Demand Forecast (Summary Statement) - Discom wise (Name of Discom: _____)

No.	Particulars	Actual of Previous Years				Current Year or Base Year	Projections		
		Yr-1	Yr-2	...Yr-n	Yr-1		Yr-2	...Yr-5	
1	Energy Sale - MUs (Consumer Category wise as per Retail Supply Tariff Order)								
2	Total Energy Sale (MU) - (Cumulative of all consumer categories)								
3	YoY growth rate/CAGR - as applicable (%)								
4	ST & D losses - in %								
5	ST & D losses - in MU								
6	Supply / Requirement at DISCOM Boundary(MU)								
7	YoY growth rate/CAGR - as applicable (%)								
8	Transmission Loss (intra +inter-state) in %								
9	Transmission Loss (intra +inter-state) in MU								
10	Ex-Bus Requirement of DISCOM (MU) (excluding OACs, Railways) - RESTRICTED								
11	Sale by MPPMCL to SEZ (as applicable)								
12	Energy Wheeled for Railways/OA Consumers (as applicable)								
13	Ex-Bus Requirement of DISCOM (MU) (including OA, Railways) -RESTRICTED								
14	Unsupplied energy due to system constraints (MU)								
15	Ex-Bus Requirement of DISCOM (MU) (excluding OA, Railways) - Unrestricted								
16	Ex-Bus Requirement of DISCOM (MU) (including OA, Railways) - Unrestricted								
17	Peak load of DISCOM (MW) (excluding OA, Railways)								
18	Peak load of DISCOM (MW) (including OA, Railways)								
19	System Load Factor								

Note: 1. The Demand Forecast would be supported by Graphs showing yearly Consumption Pattern for Consumer Category.

2. The Demand Forecast shall be done in accordance with Regulation No. 4.5 to 4.21 of the MPERC (Power Purchase and Procurement Process) Regulations 2022

3. The above format for furnishing information related to Demand Forecasting is subject to change if methodology adopted for Demand Forecasting is other than PEUM.

Format-2

Consumer Category Wise forecast :- Discom (Name of Discom: _____)

No.	Particulars	Actual of Previous Years				Current Year or Base Year	Projections		
		Yr-1	Yr-2	...Yr-n	Yr-1		Yr-2	...Yr-5	
1	Consumer Category Name:- (as per Retail Supply Tariff Order)								
2	No of consumers								
3	YoY growth rate/CAGR - as applicable (%)								
4	Connected load (kW)								
5	YoY growth rate/CAGR - as applicable (%)								
6	Energy consumption (MU)								
7	YoY growth rate/CAGR - as applicable (%)								
8	Specific energy consumption (kWh)								
9	YoY growth rate/CAGR - as applicable (%)								
10	Hours of operation (as applicable)								
11	YoY growth rate/CAGR - as applicable (%)								
12	Any other parameter considered during forecasting								
13	YoY growth rate/CAGR - as applicable (%)								

Note: 1. The Demand Forecast would be supported by Graphs showing yearly Consumption Pattern for Consumer Category.
2. The Demand Forecast shall be done in accordance with Regulation No. 4.5 to 4.12 of the MPEEC (Power Purchase and Procurement Process) Regulations 2022

Format-3

Power Supply Projections-Summary Statement (5 Year Period)

No.	PARTICULARS	Projections				
		Yr-1	Yr-2	Yr-3	Yr-4	Yr-5
1	Energy Requirement (MU) (Ex-Bus)					
2	For DISCOMs & SEZ (MU)					
3	For State (including OA & Railways) (MU)					
4	Energy Availability (MU)					
	MP Genco Thermal Plants					
	MP Genco Hydel Plants					
	ISP, OSP, SSP & Other Hydel					
	Central Sector Stations					
	UMPP & IPPs					
	Solar Availability					
	Non-Solar Availability					
5	TOTAL (MU)					
6	Surplus(+)/Deficit(-) (MU) (5-3)					
7	Surplus(+)/Deficit(-) (%) (6/1)					
8	Banking/Power Market (as applicable)					
9	Available Generation Capacity (MW)					
	- MP GENCO Thermal					
	- MP GENCO Hydel					
	- ISP, OSP, SSP & Other Hydel					
	- Central Sector					
	- UMPP & IPPs					
	- Solar plants					
	- Non-solar plants					
10	TOTAL (MW)					

Note: 1. The Monthly Power Supply Forecast for the State needs to be furnished separately
2. The Power Supply Position would be supported by Graphs showing yearly and Monthly Pattern

Format-4

Peak Power Supply Projections-Summary Statement (5 Year Period)

Peak Hours (Morning/Day/Evening)

No.	PARTICULARS	Projections				
		Yr-1	Yr-2	Yr-3	Yr-4	Yr-5
1	Peak Load (MW) (MP Periphery)					
2	For DISCOMs & SEZ (MW)					
3	For State (including OACs & Railways) (MW)					
4	Peak availability (MW) - (Morning/Day/Evening)					
	MP Genco Thermal Plants					
	MP Genco Hydel Plants					
	ISP, OSP, SSP & Other Hydel					
	Central Sector Stations					
	UMPP & IPPs					
	Solar Availability					
	Non-Solar Availability					
	Availability through banking/Power Market					
5	Peak availability (excluding banking/Power Market)					
6	Peak availability (including banking/ Power Market)					
7	Surplus(+)/Deficit(-) (excluding banking/ Power Market)					
8	Surplus(+)/Deficit(-) (including banking/ Power Market)					

Note: 1. The Monthly Peak Availability Forecast for the State for morning/day/evening needs to be furnished separately

2. The Power Supply Position needs to be supported by Graphs showing yearly or monthly 24 hr load pattern based on Load Research by the Company.

Format-5

Available Generation Capacity- Summary Statement (MW)

No.	Particulars	Year:												Total			
		April	May	June	July	August	September	October	November	December	January	February	March				
1	State Gencos																
2	State Hydel																
3	JV and other Hydel																
4	Central Sector																
5	IPPs																
6	Renewables																
	Solar																
	Wind																
	Others																
7	Total Available Generation Capacity of Madhya Pradesh																

Note: The above format needs to be filled considering the plant wise availability of each State/Central Generating plants, IPPs and other renewable plants for entire 5-year plan.

Format-8

Plan for Renewable Purchase Obligation (RPO)

No.	Particulars	Projection				
		Yr-1	Yr-2	Yr-3	Yr-4	Yr-5
1	Ex-Bus Energy Requirement (MU) (DISCOMs + SEZ)					
2	Anticipated availability from Hydro (MU)					
3	Energy requirement to be considered for RPO(MU)					
a	RPO %					
b	Solar RPO (MU)					
c	Capacity required (MW)					
d	RPO %					
e	Non- Solar RPO (MU)					
f	Capacity required (MW)					
4	Year wise Renewable Capacity already tied up (MW)					
a	Solar (including KUSUM A & KUSUM C)					
b	Non-Solar (including mini hydel)					
c	Total					
5	Year wise Cumulative Renewable Capacity including tied up projects (MW)					
a	Solar Capacity (3c+4a)					
b	Non-Solar Capacity (3f+4b)					
c	Total Capacity (3c+3f+4c)					
	Year wise Total Renewable capacity required to be tied up to fulfill RPO (2+5)					

Format-9

Deviation in Demand Forecast- Summary Statement - Discom wise (Name of Discom: _____)

No.	Particulars	Previous Years approved As per Plan (1)	Actual (2)	Deviation (2-1)	Reasons for deviation
1	Energy Sale - MUs (Consumer Category wise as per Retail Supply Tariff Order)				
2	Total Energy Sale (MU)- (Cumulative of all consumer categories)				
3	YoY growth rate/CAGR - as applicable (%)				
4	ST & D losses - in %				
5	ST & D losses - in MU				
6	Supply / Requirement at DISCOM Boundary(MU)				
7	YoY growth rate/CAGR - as applicable (%)				
8	Transmission Loss (intra +inter-state) in %				
9	Transmission Loss (intra +inter-state) in MU				
10	Ex-Bus Requirement of DISCOM (MU) (excluding OACs, Railways) - RESTRICTED				
11	Sale by MPPMCL to SEZ (as applicable)				
12	Energy Wheeled for Railways/OA Consumers (as applicable)				
13	Ex-Bus Requirement of DISCOM (MU) (including OA, Railways) -RESTRICTED				
14	Unsupplied energy due to system constraints (MU)				
15	Ex-Bus Requirement of DISCOM (MU) (excluding OA, Railways) - Unrestricted				
16	Ex-Bus Requirement of DISCOM (MU) (including OA, Railways) - Unrestricted				
17	Peak load of DISCOM (MW) (excluding OA, Railways)				
18	Peak load of DISCOM (MW) (including OA, Railways)				
19	System Load Factor				

Format-10

Deviation in Power Supply Position

No.	PARTICULARS	Previous Years approved As per Plan (1)	Actual (2)	Deviation (2-1)	Reasons for deviation
1	Energy Availability (MU)				
	MP Genco Thermal Plants				
	MP Genco Hydel Plants				
	ISP, OSP, SSP & Other Hydel				
	Central Sector Stations				
	UMPP & IPPs				
	Solar Availability				
	Non-Solar Availability				
2	TOTAL (MU)				
3	Surplus(+)/Deficit(-) (MU)				
4	Surplus(+)/Deficit(-) (%)				
5	Banking/Power Market (as applicable)				
6	Available Generation Capacity (MW)				
	- MP GENCO Thermal				
	- MP GENCO Hydel				
	- ISP, OSP, SSP & Other Hydel				
	- Central Sector				
	- UMPP & IPPs				
	- Solar plants				
	- Non-solar plants				
7	TOTAL (MW)				