

**MADHYA PRADESH ELECTRICITY REGULATORY COMMISSION
BHOPAL**

Sub: Filing of Merged Petition under Section 86(1) of the Electricity Act 2003 read with Regulation 4.22 of MPERC (Power Purchase and Procurement Process) Regulations, 2023 {RG-19(II) of 2023} dt. 17th February 2023 for approval of Capacity addition to the extent of power from 3150 MW Solar, 3200 MW Wind, 500 MW Pump Storage and 227 MW new upcoming Hydro Projects developed by National Hydroelectric Power Corporation (NHPC) and Procurement of additional quantum and power purchase agreement for medium- term power for five years from FY 2023-24.

ORDER

(Hearing through video conferencing)

(Date of Order: 05th January 2024)

Managing Director,

Madhya Pradesh Power Management Company Ltd.,

Shakti Bhawan, PO Vidyut Nagar,

Rampur, Jabalpur, 482008

- **Petitioner**

Vs.

(1) Madhya Pradesh Urja Vikas Nigam Ltd.,

Urja Bhawan, Link Road No. 2 Shivaji Nagar,

Bhopal, Madhya Pradesh, 462016

(2) Solar Energy Corporation of India,

A Wing D-3 District Centre, Saket,

New Delhi, 110017

(3) NTPC Renewable Energy Ltd.,

NTPC Bhawan, SCOPE Complex,

7 Institutional Area, Lodhi Road, South Delhi,

Delhi, India, 110003

(4) Power Grid Corporation India Limited,

B-9, Kutub Institutional Area, Katwaria Sarai,

New Delhi, 110 016

(5) MP Power Transmission Company Limited,

Block No. 22, Shakti Bhawan, Jabalpur

(6) PFC Consulting Limited,

1st Floor, Urja Nidhi, 1 Barakhamba Lane,

Connaught Place, New Delhi, 110 001

- **Respondents**

Shri Manoj Dubey, Advocate, Shri Rajneesh Reja, GM, Shri Dheeraj Muniya, GM appeared on behalf of the petitioner.

Shri Ajay Shukla, EE appeared on behalf of the Respondent No. 1

Shri Hitesh Tiwari, EE appeared on behalf of the Respondent No. 5

Shri Anubhav Kansal, appeared on behalf of the Respondent No. 6

Vide Commission's Order dt. 06.10.2023, the Petitioner was directed to file a consolidated Petition including content of the Petition No. 42/2023 & the other Petition in the same matter filed by them before the motion hearing of P. No. 42/2023, hence the subject petition is filed by Madhya Pradesh Power Management Company Ltd., Jabalpur under Section 86(1) of the Electricity Act 2003 read with Regulation 4.22 of MPERC (Power Purchase and Procurement Process) Regulations, 2023 {RG-19(II) of 2023}.

2. By affidavit dated 17 October' 2023, the petitioner broadly submitted the following:

- i. *That, the Petitioner is a Company incorporated under the Companies Act, 1956. It is a fully owned Company of the Government of Madhya Pradesh and is the holding company of the three DISCOMs of the State, viz. M P Poorva Kshetra Vidyut Vitaran Company Ltd., M P Madhya Kshetra Vidyut Vitaran Company Ltd. and M P Paschim Kshetra Vidyut Vitaran Company Ltd.*
- ii. *That, the Petitioner has signed a "Management and Corporate Functions Agreement" on 5th June, 2012, with the three DISCOMs of the State, wherein it has been agreed that the Petitioner shall, inter- alia, in consultation with DISCOMs, undertake long-term/medium-term/short-term planning and assessment of the power purchase requirements for the three Discoms and explore opportunities for power procurement as per the regulations of the Hon'ble Commission.*
- iii. *That, the Respondent No. 1 M.P. Urja Vikas Nigam Ltd., established by the Government of Madhya Pradesh in 1982, is the nodal agency for implementing various programs and policies of the Government of India as well as of the State Government for the renewable energy sector. The scope of activities extends from implementing various schemes for meeting the energy needs of rural areas to the promotion and setting up of industrial and commercial projects for the use of non-conventional power. Besides implementing all Government sponsored programs and projects in this sector, MPUVNL creates awareness about the benefits of energy conservation and renewable energy among users of various forms of energy.*
- iv. *That, the Respondent No. 2 -Solar Energy Corporation of India Ltd (SECI) is a CPSU under the administrative control of the Ministry of New and Renewable Energy (MNRE), set up on 20th Sept, 2011 to facilitate the implementation of NSM and achievement of targets set therein. It is the only CPSU dedicated to the solar energy sector. It was originally incorporated as a Section-25 (not for profit) company under the Companies Act, 1956. However, through an amendment by Government of India, the company has been converted into a Section-3 company, in 2015, under the Companies Act, 2013. The mandate of the company has also been broadened to cover the entire renewable energy domain. In the present outlook of the RE sector, SECI has a major role to play in the sector's development. The company is one of the nodal agency for implementation of a number of schemes of MNRE.*
- v. *That, the Respondent No. 3 NTPC Renewable Energy Limited, a wholly owned subsidiary of NTPC Limited and a Company incorporated under the Companies Act, 2013 having its registered office at NTPC Bhawan, SCOPE Complex, 7, Institutional Area, Lodhi Road, South Delhi, Delhi, India 110003.*

vi. *The National Tariff Policy (NTP) 2016, under clause 6.4 (1) provides that;*
“ Pursuant to provisions of section 86(1)(e) of the Act, the Appropriate Commission shall fix a minimum percentage of the total consumption of electricity in the area of a distribution licensee for purchase of energy from renewable energy sources, taking into account availability of such resources and its impact on retail tariffs. Cost of purchase of renewable energy shall be taken into account while determining tariff by SERCs. Long term growth trajectory of Renewable Purchase Obligations (RPOs) will be prescribed by the Ministry of Power in consultation with MNRE.

Provided that cogeneration from sources other than renewable sources shall not be excluded from the applicability of RPOs

vii. *Ministry of Power, Government of India vide Order F. No. 09/13/2021-RCM dated 22.07.2022 read with the Order F.No.09/13/2021-RCM dated 19th September 22 has notified Renewable Purchase Obligation (RPO) and Energy Storage Obligation Trajectory till the year 2029-30. Subsequently, in cognizance of above, the Hon'ble Madhya Pradesh Electricity Regulatory Commission (MPERC) has issued first amendment to MPERC (Co-generation and Generation of Electricity from Renewable Sources of Energy) (Revision-II) Regulations, 2021 dated 16th January, 2023 wherein it has notified the RPO trajectory. As per the said amendments, now the financial year-wise RPO targets for the State Discoms will be in terms of Wind RPO, HPO, Other RPO and Energy Storage Obligation (ESO) separately. The RPO trajectory is as under:*

| <i>Financial Year</i> | <i>Wind RPO</i> | <i>HPO</i> | <i>Other RPO</i> | <i>Total RPO</i> | <i>Storage on Energy basis (ESO)</i> |
|-----------------------|-----------------|------------|------------------|------------------|--------------------------------------|
| 2022-23 | 0.81% | 0.35% | 23.44% | 24.60% | Nil |
| 2023-24 | 1.60% | 0.66% | 25.13% | 27.39% | Nil |
| 2024-25 | 2.46% | 1.08% | 25.63% | 29.17% | Nil |
| 2025-26 | 3.36% | 1.48% | 26.13% | 30.97% | 1.0% |
| 2026-27 | 4.29% | 1.80% | 26.63% | 32.72% | 1.5% |
| 2027-28 | 5.23% | 2.15% | 27.13% | 34.51% | 2.0% |
| 2028-29 | 6.16% | 2.51% | 27.63% | 36.30% | 2.5% |
| 2029-30 | 6.94% | 2.82% | 28.13% | 37.89% | 3.0% |

viii. *DISCOMs being an obligated entity will have to achieve RPO targets either by procuring Renewable Power or by purchasing Renewable Energy Certificates (REC). For fulfillment of the RPO targets Petitioner intends to procure renewable power from RE projects, rather than relying on RECs to meet its RPO targets.*

ix. *Clause 4.22 of the MPERC (Power Purchase and Procurement Process) Regulations 2023, {RG-19(II) of 2023} (Revision-I) dated 17th February 2023 stipulates as follows:*

4.22 Assessment of Availability:

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.

- x. *In view of above the present Petition is being filed for approval of RE additional capacity for the fulfillment of RPO target set by the Hon'ble Commission. The details of the capacity addition requested as under: -*

| Sr. No. | Particulars | Solar Capacity | Wind Capacity | Storage Capacity | RE RTC | Hydro Capacities | Tariff discovered / To be discovered |
|----------------|---|-----------------------|----------------------|-------------------------|---------------|-------------------------|---|
| 1 | <i>Pump Storage projects on complimentary basis with UP</i> | - | - | 500 MW | | | <i>To be discovered Through competitive bidding carried out by MPPMCL</i> |
| 2 | <i>NTPC</i> | 500 MW | - | - | | | <i>Rs. 2.57 per KWh through competitive bidding by IREDA under CPSU Scheme</i> |
| 3 | <i>SECI</i> | 500 MW | - | - | | | <i>Rs. 2.57 per KWh through competitive bidding by IREDA under CPSU Scheme</i> |
| 4 | <i>SPG of KUSUM C Scheme</i> | 1150 MW | - | - | | | <i>Through competitive bidding by MPUVN</i> |
| 5 | <i>SPG of KUSUM A Scheme</i> | 200 MW | - | - | | | <i>Through pre fixed levelized tariff determined by commission or Competitive bidding as the case may be by MPUVN</i> |
| 6 | <i>650 MW RE RTC from SECI on complimentary basis with Punjab</i> | 800 MW | 3200 MW | | 650 MW | | <i>Through competitive bidding by SECI</i> |
| 7 | <i>Teesta-VI</i> | | | | | 90 MW | <i>Tariff will be determined by CERC under Section 62 of EA 2003</i> |
| 8 | <i>Rangit-IV</i> | | | | | 43 MW | |
| 9 | <i>Ratle</i> | | | | | 94 MW | |
| | Total | 3150 MW | 3200 MW | 500 MW | 650 MW | 227 MW | |

Requirement for Storage Capacity:

- xi. *It is to submit that Ministry of Power, Government of India notified Renewable Purchase Obligation (RPO) and Energy Storage trajectory up to FY-2029-30 vide it's notification dated 22.07.2022 read with corrigendum issued on dated 19th Sep.22. It is to submit that in line with the notification cited as above, the Energy Department GoMP, constituted a committee vide order no. F-03-24/2011/XIII dated 22.09.2022 where by the committee as interested to analyze technical feasibility, operation stability, and other aspects to ascertain requirement of Storage Capacity.*

- xii. *The committee submitted its report before Energy Department, which was admitted and accordingly MPPMCL requested MPERC for consideration of the report vide letter no. 1559 dated 07.12.2022. Hon'ble Commission was pleased to notify regulation on dated 16th January 2023 in line with the principal approval granted by the energy Department GoMP.*
- xiii. *It is further submitted that another meeting of committee was held on dated 08.12.2023 wherein after deliberation a report was again submitted to Energy Department it was mentioned as under:*
- a. *Considering the prevailing tariff scenario and energy cost of Battery Storage (9-11 Rs/Kwh), it would not be economically viable option. Hence option of Pump Hydro Storage was recommended.*
 - b. *Considering the high gestation period for pump storage projects the storage requirement for the year FY 2023-24 and FY 2024-25 may not be fulfilled.*
 - c. *The requirement of 1500 MW for 6 Hours discharge (9000MWh) may be met partly through 500 MW with 6 Hrs. discharge for Rabi season through Competitive bidding for Pump storage in Complementary with other states and remaining capacity of 1200 MW to be met through other projects in pipeline or Sardar Sarovar Project (200MW*6) which may operate under Pump Storage mode.*
- xiv. *Further it is submitted that procurement of power from Pumped Storage Projects, the Petitioner finds that recently on 10 April 2023, the MoP has issued guidelines to promote development of Pump Storage Projects (PSP) across India. However, till date there is no Standard Bidding Documents (SBDs) available for procurement of power from pumped storage projects. Accordingly, the Petitioner requested Ministry of Power, Government of India vide letter no. MD/MPPMCL/Storage/2022-23/09 dated 24.01.2023 to frame Standard Bidding Document (SBD) for procurement of ISTS connected Technology Agnostic Energy Storage Solutions. It is submitted that the procurement of power through Pump Storage Projects as envisaged in this Petition falls under composite scheme as sub-section (1) (b) of Section 79 of the Electricity Act, 2003 wherein the generation and sale are envisaged to take place in more than one State, hence, the Hon'ble Central Commission becomes the appropriate Commission under the Act for regulatory proceeding related to adoption of Tariff discovered through Competitive Bidding. Accordingly, a separate Petition is being filed before Hon'ble Central Electricity Regulatory Commission (CERC) for approval of Bid documents which has been drafted by the Petitioner as per its requirements.*
- xv. *In order to fully utilize such Energy Storage Solutions, other States having complimentary demand pattern were pursued. After various rounds of discussion, Uttar Pradesh Power Corporation Limited ("UPPCL") vide its letter No. 510/CE/PPA (letter dated 03.04.2023*) provided its consent for jointly participating in the proposed Pump Storage Bidding process wherein the UPPCL shall be procuring power from May to October, i.e.. Non-Rabi Months of the year*

Solar Power from CPSU Scheme:

- xvi. *Government of India, Ministry of New & Renewable Energy vide Order no. 283/20/2019-Grid Solar dated 03.07.2019 has approved the implementation of CPSU scheme phase-II for setting up 12000 MW Grid-connected Solar photovoltaic (PV) power projects by CPSUs/Government organization. The main objective of this scheme is to set up solar PV projects through Government Producers using domestic cells & modules in WTO compliant manner to facilitate national energy security and environment sustainability for Government purpose.*
- xvii. *GM (Commercial) NTPC Ltd vide letter dated 21.12.2021 read with the letter dated 17.11.2022 had offered 400-500 MW Solar PV power for sale to Petitioner from their project being developed at khavda, Kutch, Gujarat by their subsidiary NPTC Renewable Energy Ltd under CPSU Scheme Phase-II, Tranche-III. The tariff of Solar PV power offered to the Petitioner was Rs 2.57/Kwh (inclusive of rise in rate of GST from 5% to 12%).*
- xviii. *Further, General Manager (Power Trading) SECI vide letter 50547dated 05.08.2022 read with the letter 52209 dated 03.11.2022 had offered sale of 1200 MW Solar PV power to the Petitioner under CPSU scheme phase-II at a tariff of Rs.2.57/Kwh. The salient feature of the scheme is reproduced as below:*
- a) *Tariff include change in GST rates as notified by the Government of India (GoI) vide its Notification No.8/2021- Central Tax (Rate) dated 30.09.2021.*
 - b) *No Impact of change in BCD rates imposed on imported modules as per GoI Order.*
 - c) *ISTS Transmission charges are waived off as per Ministry of Power (MoP) Order dated 23.11.2021 and 30.11.2021.*
- xix. *After the approval of proposal from Board of Directors, Petitioner has provided consent to NTPC REL vide letter no. 1591 dated 13.12.2022 and to SECI vide letter no. 1589 dated 13.12.2022 and executed Power Usage Agreement as under:-*

| Description | Solar Power Producer | Date of PUA |
|--------------------|-----------------------------|--------------------|
| 315 MW Solar Power | NTPC REL | 05.06.2023 |
| 185 MW Solar Power | NTPC REL | 05.06.2023 |
| 500 MW Solar Power | SECI | 11.07.2023 |

KUSUMA & C Scheme:

- xx. *That MNRE, GoI, vide its OM No. 32/645/2017-SPV Division dated 22.07.2019 issued guidelines for implementation of various components under PM KUSUM Scheme detailed below and had nominated MPUVN as Nodal Agency for implementation of same:-*

- (a) *KUSUM-A, mainly attributes for increasing income of farmers having unutilized land parcels available with them which could be used for setting up of Solar PV Plant from 500 KW & up to 2 MW and the power generated from such PV Plants is to be mandatorily procured by MPPMCL at a tariff discovered through reverse bidding process with ceiling of feed in tariff determined by MPERC.*
- (b) *KUSUM-B, mainly consisted of Solarisation of un-electrified agricultural pumps.*
- (c) *KUSUM-C, consist of providing power to agricultural consumers during day time, by way of connecting the existing 11 KV agricultural feeders through Solar PV Plants of appropriate capacities and connected to Grid at HV Level as per supply code. The Scheme has CFA of 30% of the Benchmark cost (Rs. 3.5 Cr. /MW).*

xxi. *That the Superintending Engineer MPUVN vide his letter No. 1548 dt. 17.07.2023 has informed that after implementation schedule of KUSUM-A & C scheme and the year wise expected capacity addition will be as under: -*

| <i>Name of Scheme</i> | <i>FY-2023</i> | <i>FY-2024</i> | <i>FY-2025</i> | <i>FY-2026</i> | <i>FY-2027</i> |
|-----------------------|----------------|----------------|----------------|----------------|----------------|
| <i>KUSUM-A</i> | <i>3 MW</i> | <i>200 MW</i> | <i>150 MW</i> | <i>100 MW</i> | <i>47 MW</i> |
| <i>KUSUM-C</i> | <i>-</i> | <i>8 MW</i> | <i>350 MW</i> | <i>400 MW</i> | <i>492 MW</i> |

xxii. *Till date up to 73 PPA of KUSUM A Scheme for 115.78 MW were executed and out of which 6 projects having 9.13 MW capacity are commissioned. Similarly 8 PPA for 38.90 MW under KUSUM C Scheme were executed and SCOD will be commenced from September 2023.*

xxiii. *From above it can be seen that, up to FY 2027 about 1750 MW Solar PV capacity will be added on implementation of KUSUM- A & C Schemes and out of which capacity approval for 300 MW Solar capacity under KUSUM-A scheme has been already granted by Hon'ble Commission in Petition no. 55/2021 and 100 MW of KUSUM C has been granted in Petition no. 32/2022 against the requested 1250 MW capacity. Therefore for balance 200 MW Solar Capacity under KUSUM – A Scheme and 1150 MW Solar Capacity under KUSUM – C Scheme is proposed for approval of Capacity Addition in the present petition.*

xxiv. *Further in petition no. 26 of 2023, filed by MPUVNL, Hon'ble Commission vide order dated 04.07.2023 directed to MPPMCL to file petition for increasing the capacity addition expected to be contracted under KUSUM C Scheme in consultation with MPUVNL within 15 days of order.*

650 MW RE RTC Power:

xxv. *The consent for procurement of 650 MW RE RTC Power on long term basis from upcoming Hybrid RE Project of SECI on 6 monthly sharing i.e. MP will avail power from October to March each year was issued vide Director Commercial letter cited as Letter No. 05-01/MPPMCL/RO/Dir (Com)/210, Bhopal dated 05.07.2022. This*

consent was subject to rate reasonability of discovered tariff of the project.

xxvi. This office requested to SECI for providing bifurcation of capacity and energy among RE Sources proposed to provide RE RTC of 650 MW. In response to this letter SECI vide letter cited SECI letter no. SECI/PS/MPPMCL/51290 Dated 15.09.2022 inform that: -

- (i) Capacity Bifurcation: The tentative installed Project capacities of Solar and Wind are envisaged to be 800 MW and 3200 MW respectively. Project configuration is also envisaged to include Energy Storage Capacity of ~ 800 MWh.
- (ii) Energy Bifurcation: The tentative Energy supply component of Solar and Wind out of the total supply of ~ 2.85 BUs (650 MW for 6 months) is envisaged to be -0.57 BUs Solar (~20%) and 2.28 BUs Wind (~80%).....

Also the estimated units though energy storage capacity estimated will be 0.144 BU, which can be used for meeting Energy storage Obligation.

227 MW HYDRO Power:

xxvii. As mentioned at the Para above that the Hon'ble Madhya Pradesh Electricity Regulatory Commission (MPERC) has issued first amendment to MPERC (Co-generation and Generation of Electricity from Renewable Sources of Energy) (Revision-II) Regulations, 2021 dated 16th January 2023 wherein it has notified the RPO trajectory from FY 2022-23 to FY 2029-30.

xxviii. NHPC vide letter No. NH/Comml./New Project/2022/610 dated 02.06.2022 has requested Petitioner for consenting to procure power from upcoming Hydel Project being developed by NHPC and its JVs at various location in North-East states and union territories of J & K. Following are the details of the projects:

| Description | Teesta VI | Rangit IV | Ratle | Dibang MPP | Dugar |
|---------------------------|--------------------|--------------------|--------------------|-----------------------------|---------------------------|
| State/UT | Sikkim | Sikkim | UT of J&K | Arunachal Pradesh | Himachal Pradesh |
| Installed Capacity (MW) | 500 | 120 | 850 | 2880 | 500 |
| Design Energy (MU) | 2400 | 507.88 | 3136.77 | 11223 | 1759.85 |
| Peaking Capacity | 2.3 Hrs | 3.0 Hrs | 1.96 Hrs | More than 3.0 Hrs (Storage) | 3.62 Hrs |
| Expected Commissioning | March 2024 | May 2024 | Feb 2026 | July 2031 | Aug 2028 |
| Levelised Tariff (Rs/Kwh) | 4.07 | 4.37 | 3.92 | 4.73 | 4.46 |
| Status of Project | Under Construction | Under Construction | Under Construction | PIB/CCEA Sanction Awaited | PIB/CCEA Sanction Awaited |

xxix. There were additional benefits under the proposal for the above projects:

- i) Above projects are eligible for HPO benefits.

- ii) *High inflow season (March to September) hydro project will provide full capacity on RTC basis and during lean season (October to February) provide morning/evening peaking power based on water availability.*
- iii) *Tariff will be determined by CERC under section 62 of EA 2003.*

xxx. *In response to the above offer , consent for procurement of 1020 MW power from following projects was issued to NHPC by the Petitioner vide letter No. 05-01/MPPMCL/RO/DIR (Com)/246 Bhopal dated 01.08.2022. Following are the details of the procurement from projects:*

| Description | Teesta-VI | Rangit-IV | Ratle | Total |
|--|------------------|------------------|-----------------------|----------------|
| <i>State/UT</i> | <i>Sikkim</i> | <i>Sikkim</i> | <i>UT of J &K</i> | <i>-</i> |
| <i>Installed Capacity (MW)</i> | <i>500 MW</i> | <i>120 MW</i> | <i>850 MW</i> | <i>1470 MW</i> |
| <i>In-principle consent of Petitioner for procurement of power</i> | <i>400 MW</i> | <i>120 MW</i> | <i>500 MW</i> | <i>1020 MW</i> |

xxxi. *Further vide Letter No. NH/Comml./New Project/2022/869 dated 04.08.2022 draft of PPA to be executed for distinctive projects of NHPC was forwarded to Petitioner by NHPC whereby it was requested, for granting of approval of the agreement for Teesta-VI HEP, Rangit-IV HEP and Ratle HEP, so that off-take of power from these projects is safeguarded.*

xxxii. *Subsequently NHPC vide email dated 30.11.2022 informed Petitioner about tentative allocation of 227 MW against consented 1020 MW and informed that this allocation could vary subject to decision of Central Electricity Authority/Ministry of Power at the time of final allocation.*

| Description | Teesta-VI | Rangit-IV | Ratle | Total |
|--|------------------|------------------|-----------------------|----------------|
| <i>State/UT</i> | <i>Sikkim</i> | <i>Sikkim</i> | <i>UT of J &K</i> | <i>-</i> |
| <i>Installed Capacity (MW)</i> | <i>500 MW</i> | <i>120 MW</i> | <i>850 MW</i> | <i>1470 MW</i> |
| <i>In-principle consent of Petitioner for procurement of power</i> | <i>90 MW</i> | <i>43 MW</i> | <i>94 MW</i> | <i>227 MW</i> |

Status of RPO fulfillment after considering the Capacity Addition requested in instant petition

xxxiii. *The capacity addition of the above projects will help the Petitioner to fulfill the RPO targets specified by the Hon'ble Commission as per the First Amendment of Madhya Pradesh Electricity Regulatory Commission (Co-Generation and Generation of Electricity from Renewable sources of Energy) (Revision-II) Regulations 2021 dated 16th January 2023 and will also help the Petitioner in meeting the peak power demand requirement of the state. The status of RPO fulfillment is as under: -*

| WIND RPO | | | | | | | | | |
|-----------------|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| S. No | Particulars | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 | 2028-29 | 2029-30 |
| 1 | <i>Energy Requirements (MUs) - Till FY 2026-27 as per MYT and from FY 2028 to 30 extrapolated at same growth. Energy requirements is updated with yearly ARR</i> | 85,696 | 89,949 | 97,663 | 1,04,036 | 1,11,863 | 1,19,568 | 1,27,805 | 1,36,609 |
| 2 | <i>RPO Targets % - Wind</i> | 0.81% | 1.60% | 2.46% | 3.36% | 4.29% | 5.23% | 6.16% | 6.94% |
| 3 | <i>Wind Energy Required - MUs</i> | 694 | 1,439 | 2,403 | 3,496 | 4,799 | 6,253 | 7,873 | 9,481 |
| 4 | <i>Wind Energy Available - Assessed MUs</i> | 363 | 1,309 | 3,986 | 5,030 | 8,742 | 8,742 | 8,742 | 8,742 |
| 5 | <i>Achievement %</i> | 0.42% | 1.46% | 4.08% | 4.83% | 7.82% | 7.31% | 6.84% | 6.40% |
| 6 | <i>Target Achieved %</i> | 52% | 91% | 166% | 144% | 182% | 140% | 111% | 92% |
| 7 | <i>Surplus/Deficit - MUs</i> | (331) | (130) | 1,583 | 1,534 | 3,944 | 2,489 | 870 | (738) |
| 8 | <i>Additional Capacity Required @38% CUF - MW</i> | 99 | 39 | - | - | - | - | (261) | 222 |
| HPO | | | | | | | | | |
| S. No | Particulars | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 | 2028-29 | 2029-30 |
| 1 | <i>Energy Requirements (MUs) - Till FY 2026-27 as per MYT and from FY 2028 to 30 extrapolated at same growth. Energy requirements is updated</i> | 85,696 | 89,949 | 97,663 | 1,04,036 | 1,11,863 | 1,19,568 | 1,27,805 | 1,36,609 |

| | | | | | | | | | |
|---|--|-------|-------|-------|-------|-------|---------|---------|---------|
| | with yearly ARR | | | | | | | | |
| 2 | RPO Targets % - HPO | 0.35% | 0.66% | 1.08% | 1.48% | 1.80% | 2.15% | 2.51% | 2.82% |
| 3 | Hydro Energy Required - MUs | 300 | 594 | 1,055 | 1,540 | 2,014 | 2,571 | 3,208 | 3,852 |
| 4 | Hydro Energy Available - Assessed MUs | 113 | 148 | 973 | 1,183 | 1,500 | 1,500 | 1,500 | 1,500 |
| 5 | Achievement % | 0.13% | 0.16% | 1.00% | 1.14% | 1.34% | 1.25% | 1.17% | 1.10% |
| 6 | Target Achieved % | 38% | 25% | 92% | 77% | 74% | 58% | 47% | 39% |
| 7 | Surplus/Deficit - MUs | (186) | (445) | (82) | (357) | (514) | (1,071) | (1,708) | (2,353) |
| 8 | Additional Capacity Required @48% PLF - MW | 44 | 106 | 19 | 85 | 122 | 255 | 406 | 560 |

| Other RPO | | | | | | | | | |
|-----------|---|---------|---------|---------|----------|----------|----------|----------|----------|
| S. No | Particulars | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 | 2028-29 | 2029-30 |
| 1 | Energy Requirements (MUs) - Till FY 2026-27 as per MYT and from FY 2028 to 30 extrapolated at same growth. Energy requirements is updated with yearly ARR | 85,696 | 89,949 | 97,663 | 1,04,036 | 1,11,863 | 1,19,568 | 1,27,805 | 1,36,609 |
| 2 | RPO Targets % - Other RPO | 23.44% | 25.13% | 25.63% | 26.13% | 26.63% | 27.13% | 27.63% | 28.13% |
| 3 | Renewable Energy Required - MUs | 20,087 | 22,604 | 25,031 | 27,185 | 29,789 | 32,439 | 35,312 | 38,428 |
| 4 | Renewable Energy Available - Assessed MUs | 19,724 | 18,175 | 24,327 | 28,578 | 31,386 | 32,377 | 32,377 | 32,377 |
| 5 | Achievement % | 23.02% | 20.21% | 24.91% | 27.47% | 28.06% | 27.08% | 25.33% | 23.70% |
| 6 | Target Achieved % | 98% | 80% | 97% | 105% | 105% | 100% | 92% | 84% |
| 7 | Surplus/Deficit - MUs | (363) | (4,429) | (704) | 1,393 | 1,597 | (62) | (2,935) | (6,051) |

| 7 | Additional Capacity Required @28% CUF - MW | 148 | 1,806 | 287 | (568) | (651) | 25 | 1,197 | 2,467 |
|----------------|---|---------|---------|---------|----------|----------|----------|----------|----------|
| STORAGE | | | | | | | | | |
| S. No | Particulars | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 | 2028-29 | 2029-30 |
| 1 | Energy Requirements (MUs) - Till FY 2026-27 as per MYT and from FY 2028 to 30 extrapolated at same growth. Energy requirements is updated with yearly ARR | 85,696 | 89,949 | 97,663 | 1,04,036 | 1,11,863 | 1,19,568 | 1,27,805 | 1,36,609 |
| 2 | Targets % - Storage | 0.00% | 0.00% | 0.00% | 1.00% | 1.50% | 2.00% | 2.50% | 3.00% |
| 3 | Renewable Energy Required - MUs | - | - | - | 1,040 | 1,678 | 2,391 | 3,195 | 4,098 |
| 4 | Storage Capacity Available - MUs | - | - | - | 36 | 692 | 692 | 692 | 938 |
| 5 | Achievement % | 0.00% | 0.00% | 0.00% | 0.03% | 0.62% | 0.58% | 0.54% | 0.69% |
| 6 | Target Achieved % | - | - | - | 3% | 41% | 29% | 22% | 23% |
| 7 | Surplus/Deficit - MUs | - | - | - | (1,004) | (986) | (1,700) | (2,504) | (3,160) |
| 8 | Storage Capacity Required MW - 3 Hours & 1 Cycle (BESS) | - | - | - | 917 | 901 | 1,552 | 2,286 | 2,886 |
| 9 | Storage Capacity Required MW - 6 Hours & 1 Cycle (PSP) - 365 Days | - | - | - | 459 | 450 | 776 | 1,143 | 1,443 |
| 10 | Storage Capacity Required MW - 6 Hours & 1 Cycle (PSP) - 6 Months | - | - | - | 917 | 901 | 1,552 | 2,286 | 2,886 |

xxxiv. The surplus / deficit in terms of MW, RE Capacity so derived is based on following assumptions:-

- A. *All the tied up Solar PV capacities will be commissioned as per the timeline of PSA/In principle Consent/ Progress report and none of the project gets abandoned by the Developer.*
- B. *Ex- Bus Energy requirement by DISCOM Normative Ex-Bus Energy requirement mentioned by Hon'ble MPERC, in its MYT and from FY 2028 to 30 extrapolated at same growth. Energy requirements is updated with yearly ARR.*
- C. *The availability of Hydro power assessed by taking average of availability in last five years.*

Looking to minuscule quantum of the solar power from roof top, net metered consumers has not been taken into consideration for assessment of RPO deficit / surplus, however while considering achievement of RPOs it is being / will be accounted.

xxxv. *It is pertinent to mention here that Hon'ble commission has accorded approval in petition no. 32 of 2021 for addition of 250 MW Solar Power and 500 MW wind power under 750 MW Hybrid project of RUMS. Executive Engineer RUMSL vide letter dated 17.10.2022 informed that as per bids received the capacity of Solar power changed to 441 MW and capacity of wind power changed to 309 MW.*

xxxvi. *As per the Clause 4.22 of the MPERC (Power Purchase and Procurement Process) Regulations 2023, any new capacity arrangement/tie-up shall be subject to the prior approval of the Commission and as per the Clause 4.24 of the MPERC (Power Purchase and Procurement Process) Regulations 2023, any new power purchase agreement for Long/Medium-term power purchase agreements entered into by the Distribution Licensee shall be subject to the prior approval of Commission.*

MEDIUM-TERM POWER REQUIREMENT:

xxxvii. *As per Resource Adequacy Study conducted by CEA, it was highlighted that MP may face Power deficit in the upcoming years. PFCCL vide email dated 25-01-2023 has communicated to the Petitioner that it has conducted Tariff based Bidding for Medium-term power on Discovery of Efficient Electricity Price (DEEP) E Bidding Portal as per the Guidelines issued by Ministry of Power Letter. After opening of the Financial Bid Tariff discovered in the range of Rs 4.49 per Kwh to Rs 5.41 per Kwh. The weighted average of bids received was Rs 5.17 per Kwh (Base Fixed charges+ Base variable charges). As per the details provided by PFCCL against quantum of 4500 MW offered, qualified bids for 1170.25 MW of power has been received and there were 7 suppliers for total of 1170.25 MW.*

xxxviii. *A précis was placed before the Board of Petitioner in its 106th meeting held on 15.02.2023 for decision on procurement of power under medium term for a period of five years under SHAKTI Policy B (v), through tariff based competitive bidding conducted by PFCCL for medium term so as to set off the shortage of power during the upcoming years.*

xxxix. *Honorable Energy Minister, GoMP accorded administrative approval for procurement of power from PFCCL under medium term on 18.03.2023.*

- xl. *Petitioner filed a petition no. 06/2023 before Hon'ble Commission, seeking approval for procurement of power from FY 2023-24 under medium term (five years) from PFCCL under section 86(1)(b) of EA 2003 read with clause 4.22 and 4.24 of {RG-19 (II)2023} notified by the Commission.*
- xli. *PFCCL, vide their mail dated 28.03.2023 informed that Ministry of Power, Government of India has cancelled the bid initiated by them under SHAKTI Policy B (v) and accordingly, Petitioner submitted before the Hon'ble Commission the permission to withdraw the petition no. 06/2023 filed before it and the Commission disposed of the petition vide order dated 26.04.2023.*
- xlii. *Subsequently, PFCCL vide their email dated 12.05.2023, again informed Petitioner that Ministry of Power, Government of India, vide their letter 23/03/2022-R&R dated 15.05.2023, has sought that various States be requested to furnish their tied-up capacity as well as consent to procure power to set-off expected shortfall.*
- xliii. *The Petitioner vide email dated 18.05.2023 has confirmed to PFCCL regarding procurement of medium-term power for a period of 5 years for the state of Madhya Pradesh. However, the final decision to avail the aforesaid quantum of power would be taken subject to final requirement and rates discovered through Competitive bidding.*
- xliv. *PFCCL, vide email dated 10.07.2023 informed about outcome of bid for procurement of 4500 MW power from bidders selected under competitive tariff bidding process mentioning that under the bid, the aggregate capacity of successful bidders is 1560.25 MW and the discovered tariff is between Rs. 5.14/Unit to Rs. 5.49/Unit and the weighted average tariff of the bid is Rs. 5.30/Unit power to Petitioner and requested for providing its requirement up to 12.07.2023 so that Letter of Award may be issued for execution of PPA to successful bidders.*
- xlvi. *Petitioner, vide email dated 12.07.2023, issued in-principle consent to PFCCL for procurement upto 400 MW power from successful bidders selected under bidding of SHAKTI Policy B (v) subject to regulatory approval and examination of PPA.*
- xlvii. *PFCCL, vide their email dated 14.07.2023, informed that during the tri-partite meeting between Ministry of Power, Government of India, Central Electricity Authority and PFCCL, it has been decided that in case if consent for execution of PPA is not given by the Petitioner up to forenoon of 20.07.2023, it will be construed that the concerned state is not interested in doing so.*
- xlviii. *Further to above, PFCCL on date 29th July 2023 has issued LOA to various generators and allocated 378.24 MW power to Petitioner and the details of plant source, tariff etc tabulated as under:-*

| Name of Bidder | Coal Source | Qty (MW) | MPPMCL (MW) | NDMC (MW) | JKPDD (MW) | HPPC (MW) | Quoted Rate | | |
|--|---------------|---------------|---------------|---------------|--------------|--------------|-------------------|--------------------|--------------|
| | | | | | | | Base Fixed Charge | Base Variable Rate | Total |
| Jindal Power Limited | IB Field | 300 | 72.73 | 45.45 | 90.91 | 90.91 | 2.6 | 2.62 | 5.22 |
| RKM PowergenPvt Ltd | IB Field | 300 | 72.73 | 45.45 | 90.91 | 90.91 | 2.7 | 2.7 | 5.4 |
| MB Power, Anuppur Thermal Plant, Anuppur, Madhya Pradesh | IB Field | 160.3 | 38.85 | 24.28 | 48.56 | 48.56 | 2.64 | 2.64 | 5.28 |
| TRN Energy Private Limited | IB Field | 100.0 | 24.24 | 15.15 | 30.3 | 30.3 | 2.16 | 3.042 | 5.202 |
| DB Power Limited, Village: Baradarha, | IB Field | 100.0 | 24.24 | 15.15 | 30.3 | 30.3 | 2.6 | 2.6 | 5.2 |
| SKS Power Generation Chhatisgarh Ltd | IB Field | 100.0 | 24.24 | 15.15 | 30.3 | 30.3 | 2.24 | 2.96 | 5.2 |
| RKM PowergenPvt Ltd | Talcher Field | 300 | 72.73 | 45.45 | 90.91 | 90.91 | 2.745 | 2.745 | 5.49 |
| Jindal India Thermal Power Limited | Talcher Field | 200 | 48.48 | 30.3 | 60.61 | 60.61 | 2.56 | 2.58 | 5.14 |
| Total | | 1560.2 | 378.24 | 236.38 | 472.8 | 472.8 | 2.595 | 2.704 | 5.299 |

xlvi. *Petitioner vide letter dated 14.08.2023 has given conditional consent to PFCCL for procurement of 378.24 MW, Medium Term Power (5 years) from Thermal Power Stations of successful bidders selected through competitive bidding process under para B (v) of SHAKTI Policy, 2017 conducted by PFCCL.*

xlix. *As per the Clause 4.22 of the MPERC (Power Purchase and Procurement Process) Regulations 2023, any new capacity arrangement/tie-up shall be subject to the prior approval of the Commission and as per the Clause 4.24 of the MPERC (Power Purchase and Procurement Process) Regulations 2023, any new power purchase agreement for Long/Medium-term power purchase agreements entered into by the Distribution Licensee shall be subject to the prior approval of Commission.*

i. *In view of above, the Petitioner hereby requests the Hon'ble Commission to approve Procurement of additional quantum and Power purchase agreement for medium- term power for five years from FY 2023-24 through Tariff Based Competitive Bidding carried out by PFC Consulting Limited (PFCCL) for aggregate power requirement for*

a group of states under Scheme to Harness and Allocate Koyla Transparently in India (SHAKTI) B (V) policy.

3. With the aforesaid submissions the petitioner prayed the following:

- i. Approve the Capacity addition for procurement of power as mentioned in para 10 of petition.*
- ii. Modify the capacity of solar and wind power to 441 MW and 309 MW under 750 MW hybrid project of RUMS respectively as mentioned in para 35 in petition.*
- iii. Approve the capacity addition of new upcoming Hydro projects developed by National Hydroelectric Power Corporation (NHPC) and its JVs at various locations in North-East states and union territories of J&K as proposed in this Petition.*
- iv. Approve the Procurement of additional quantum and Power purchase agreement for medium- term power for five years from FY 2023-24 through Tariff Based Competitive Bidding carried out by PFC Consulting Limiting (PFCCL) for aggregate power requirement for a group of states under Scheme to Harness and Allocate Koyla Transparently in India (SHAKTI) B (V) policy.*
- v. Condone any inadvertent omissions/ errors/ shortcomings/delay and permit the Petitioner to add/ change/ modify/ alter portion(s) of this filing and make further submissions as may be required at a later stage; and*

Pass such an order as the Hon'ble Commission deems fit and proper as per the facts and circumstances of the case.

4. On 26.10.2023, the Petitioner filed an Interlocutory Application namely IA No. 05/2023 requesting early listing of the Petition.
5. At the motion hearing held on 31st October' 2023, the Petitioner reiterated the prayer made in the petition and also requested for early hearing for in principle approval of medium-term power requirement of 378.24 MW for meeting the demand during ensuing rabi season.
6. Commission has examined the matter regarding medium term procurement of power by petitioner and passed a detailed order on 10.11.2023 and granted in-principle approval for capacity addition of 378.24 MW for a period of 5 years from financial year 2023-24 subject to the conditions stipulated in said order dated 10.11.2023. The matter regarding medium term procurement is therefore not dealt with in this order as required relief has already been provided to the petitioner. Commission has deliberated upon remaining issues of capacity addition for RPO compliance in this order.
7. Respondent no. 5 i.e. MP Power Transmission Company Limited, Jabalpur vide affidavit dated 04.12.2023 made the following submissions on capacity addition other than medium term power requirement of 378.24 MW as under: -

- i. *That, MPPTCL has been designated as State Transmission Utility vide Govt. of MP Notification dated 21.05.2004. The Planning & Design Department of MPPTCL has been assigned to perform the functions of STU.*
- ii. *That, the petitioner Madhya Pradesh Power Management Co. Ltd. (MPPMCL) has filed the subject petition under Section 86 (1) Electricity Act 2003 for grant of in principle approval for capacity addition of 378.24 MW for procurement of medium-term power from Power Finance Corporation Consulting Limited (PFCCL) from the bidders selected through competitive bidding process under Shakti (B) (V) policy of Ministry of Power.*
- iii. *That, Hon'ble MPERC vide daily order dated 31.10.2023 noted that petitioner has conveyed its conditional consent to PFCCL for procurement of 378.24 MW power on medium term basis for which views of PFCCL is required to be taken on record. Commission has further noted that since the power is required urgently for the ensuring rabi season, adequacy of transmission corridor has to be ensured for which MPPTCL and PGCIL should be made parties.*
- iv. *That, Hon'ble commission vide daily order dated 31.10.2023 directed MPPTCL as respondent to submit their response regarding adequacy of transmission corridor for handling the quantum of 378.24 MW power through MP system.*
- v. *The reply in this regard by MPPTCL / STU has already been submitted vide letter No. 04-02/P&D/STU/2388 dated 02.11.2023.*
- vi. *Further, Hon'ble commission vide letter No. MPERC/L&R/2669 dated 01.12.2023 has directed to submit reply regarding ATC for additional capacities over and above existing capacities of power to be procured from RE projects for fulfilment of RPO target, as mentioned in para-No. 10 of the instant petition No. 51/2023 filed by the Petitioner (MPPMCL).*
- vii. *That, the Petitioner (MPPMCL) vide email dated 04.12.2023 has informed the RE additional capacity to be procured by MPPMCL alongwith the expected dated of commissioning and mode of drawl of power through ISTS or Intra-State network.*
- viii. *That, on examining the details furnished by the Petitioner the year wise requirement of power from RE projects for fulfilment of RPO targets are as under:*

| Sl. No. | Year | RE Capacity (MW) | Total RE | Connectivity (ISTS/ Intra-State) |
|---------|---------|------------------|----------|----------------------------------|
| 1 | 2024-25 | 500MW (NTPC) | 1133 | ISTS |
| | | 500MW (SECI) | | ISTS |
| | | 90MW (Teesta-VI) | | ISTS |
| | | 43MW (Rangit-IV) | | ISTS |

| | | | | |
|---|---------|----------------------|--------|---|
| 2 | 2025-26 | 650MW (RE-RTC) | 744MW | ISTS |
| | | 94MW (Ratle) | | ISTS |
| 3 | 2026-27 | 1150MW (KUSUM-C) | 1350MW | Intra-State (to be connected on 33kV level of distribution network) |
| | | 200MW (KUSUM-A) | | Intra-State (to be connected on 11kV level of distribution network) |
| 4 | 2027-28 | 500MW (PUMP Storage) | 500MW | ISTS |

- ix. *It is to submit that, various ISTS network expansion schemes have been planned in the State in coming years and MPPTCL has planned the downstream Intra-State Transmission works associated with proposed ISTS network. With the development of planned ISTS / Intra-State transmission works in the State, the Available Transfer Capability (ATC) of the system will be increased over the years to meet out the system requirement. As a result, ATC shall be enhanced in coming years which will allow drawl of procured RE power from the ISTS network.*
- x. *It is further to submit that, 1350MW RE power (upto the year 2026-27) to be procured under KUSUM-A and KUSUM-C scheme is planned to be connected on 33kV and 11kV network of distribution system which onward connected to Intra-State system, there shall not be any requirement of ATC for the same whereas 1350MW RE power under captioned scheme will contribute towards improvement in the overall ATC of the MP system.*
- xi. *In view of submission made above, the adequate transmission corridor in ISTS/ MP system shall be available in the year 2024-25 for drawl of 1133MW, in the year 2025-26 for drawl of 744MW and in the year 2027-28 for drawl of the balance power from the procured additional capacities (as detailed in para 10 of the petition) over and above existing capacities of power to be procured from RE projects for fulfilment of RPO target by the petitioner (MPPMCL) to meet the load requirement of State over the years.*

8. Last hearing in the subject matter was held on 05th December’ 2023 when the Petitioner reiterated their prayer. Respondent No. 1 and 5 supported the prayer made by the petitioner. After hearing the parties, case was reserved for orders.

Commission’s observations and findings:

9. The Commission has observed the following from the petition and the submissions of the petitioner and Respondent in this matter:

- i) Commission has specified revised RPO trajectory for obligated entities through first amendment to MPERC (Co-generation and Generation of Electricity from Renewable Sources of Energy) (Revision-II) Regulations, 2021 dated 16th January as under:

| Financial Year | Wind RPO | HPO | Other RPO | Total RPO | Storage on Energy basis (ESO) |
|----------------|----------|-------|-----------|-----------|-------------------------------|
| 2022-23 | 0.81% | 0.35% | 23.44% | 24.60% | Nil |
| 2023-24 | 1.60% | 0.66% | 25.13% | 27.39% | Nil |
| 2024-25 | 2.46% | 1.08% | 25.63% | 29.17% | Nil |
| 2025-26 | 3.36% | 1.48% | 26.13% | 30.97% | 1.0% |
| 2026-27 | 4.29% | 1.80% | 26.63% | 32.72% | 1.5% |
| 2027-28 | 5.23% | 2.15% | 27.13% | 34.51% | 2.0% |
| 2028-29 | 6.16% | 2.51% | 27.63% | 36.30% | 2.5% |
| 2029-30 | 6.94% | 2.82% | 28.13% | 37.89% | 3.0% |

- ii) As per the provisions of MPERC (Co-generation and Generation of Electricity from Renewable Sources of Energy) (Revision-II) Regulations, 2021, RPO is to be met as under:

- a. Wind RPO shall be met by energy procured from Wind Power Projects (WPPs) commissioned after 31st March 2022 and the wind energy procured over and above 7% from WPPs commissioned till 31st March 22.
- b. HPO shall be met only by energy procured from Hydro Power Projects [including Pumped Storage Projects (PSPs) and Small Hydro Projects (SHPs)] commissioned after 8th March 2019.
- c. Other RPO may be met by energy procured from any RE power project not mentioned in (a) and (b) above.
- d. From FY 2022-23 onwards, the energy procured from all Hydro Power Projects (HPPs) shall be considered as part of RPO.
- e. RPO shall be computed in energy terms as a percentage of total procurement of electricity.
- f. HPO obligations may be met from the power procured from eligible Hydro Power Projects [including Pumped Storage Projects (PSPs) and Small Hydro Projects (SHPs)] commissioned on and after 8th March 2019 to 31st March 2030.
- g. HPO Obligation of the State/ Discoms may be met out of the free power being provided to the State from Hydro Power Projects [including Pumped Storage Projects (PSPs) and Small Hydro Projects (SHPs), commissioned after 8th March 2019 as per agreement at that point of time excluding the contribution towards Local Area Development Fund (LADF), if consumed within the State/Discom. Free power (not that contributed for Local Area Development) shall be eligible for HPO benefit.
- h. In case, the free power mentioned above is insufficient to meet the HPO obligations, then the State would have to procure the additional hydro power to meet its HPO obligations or may have to buy the corresponding amount of Renewable Energy Certificate corresponding to Hydro Power.
- i. The Renewable Energy Certificate mechanism corresponding to Hydro Power to be developed by CERC to facilitate compliance of HPO Obligation would be applicable for HPO compliance.

- j. The above HPO trajectory shall be trued up on an annual basis depending on the revised commissioning schedule of Hydro projects. The HPO trajectory for the period between 2030-31 and 2039-40 shall be notified subsequently.
- k. Hydro imported from outside India shall not be considered for meeting HPO.
- l. Any shortfall remaining in achievement of ‘Other RPO’ category in a particular year can be met with either the excess energy procured from Wind Power Projects (WPPs) commissioned after 31st March 2022 beyond ‘Wind RPO’ for that year and the wind energy procured over and above 7% from WPPs commissioned till 31st March 2022 or with excess energy procured from eligible Hydro Power Projects [including Pumped Storage Projects (PSPs) and Small Hydro Projects (SHPs)], commissioned after 8th March, 2019 beyond ‘HPO’ for that year or partly from both. Further, any shortfall in achievement of ‘Wind RPO’ in a particular year can be met with excess energy procured from Hydro Power Plants, which is in excess of ‘HPO’ for that year and vice versa.

iii) Petitioner stated that DISCOMs being an obligated entity will have to achieve RPO targets either by procuring Renewable Power or by purchasing Renewable Energy Certificates (REC). Petitioner intends to procure renewable power from RE projects, rather than relying on RECs to meet its RPO targets. Petitioner further stated that Clause 4.22 of the MPERC (Power Purchase and Procurement Process) Regulations 2023 as amended from time to time stipulates as follows:

“4.22 Assessment of Availability:

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.

Further, relevant clause of MPERC (Cogeneration and Generation of Electricity from Renewable Sources of Energy) (Revision-II) Regulations, 2021 is reproduced as below:

4.3 “the MP Power Management Company Limited on behalf of the State-owned Distribution Licensees shall have to obtain the approval of Power Purchase Agreement from the Commission.”

3.2 “If the Distribution Licensees fulfil the minimum purchase obligation and still have offers from renewable energy generators including Co-generators from Renewable Sources, then either the Distribution Licensee or the Investor/Developer can approach the Commission for approval of such additional procurement offers.”

iv) In view of the condition of prior approval of the Commission , prayer is made by MPPMCL on behalf of the 3 Discoms of the State in the present petition for approval of additional RE capacity for fulfillment of RPO target set by the Hon’ble Commission. The details of the capacity addition requested are as under: -

| Sr. No. | Particulars | Solar Capacity | Wind Capacity | Storage Capacity | RE RTC | Hydro Capacities | Tariff discovered / To be discovered |
|---------|-------------|----------------|---------------|------------------|--------|------------------|--------------------------------------|
|---------|-------------|----------------|---------------|------------------|--------|------------------|--------------------------------------|

| | | | | | | | |
|---|--|----------------|----------------|---------------|---------------|---------------|---|
| 1 | Pump Storage projects on complimentary basis with UP | - | - | 500 MW | | | To be discovered Through competitive bidding carried out by MPPMCL |
| 2 | NTPC | 500 MW | - | - | | | Rs. 2.57 per KWh through competitive bidding by IREDA under CPSU Scheme |
| 3 | SECI | 500 MW | - | - | | | Rs. 2.57 per KWh through competitive bidding by IREDA under CPSU Scheme |
| 4 | SPG of KUSUM C Scheme | 1150 MW | - | - | | | Through competitive bidding by MPUVNL |
| 5 | SPG of KUSUM A Scheme | 200 MW | - | - | | | Through pre fixed levelized tariff determined by commission or Competitive bidding as the case may be, by MPUVN |
| 6 | 650 MW RE RTC from SECI on complimentary basis with Punjab | 800 MW | 3200 MW | | 650 MW | | Through competitive bidding by SECI |
| 7 | Teesta-VI | | | | | 90 MW | Tariff will be determined by CERC under Section 62 of EA 2003 |
| 8 | Rangit-IV | | | | | 43 MW | |
| 9 | Ratle | | | | | 94 MW | |
| | Total | 3150 MW | 3200 MW | 500 MW | 650 MW | 227 MW | |

Brief details of RE capacity addition sought by petitioner

- v) **Storage Capacity:** - Petitioner stated that considering the high energy cost of battery storage, they are currently not considering storage obligation fulfillment from battery storage systems. For storage capacity of 500 MW, they have reached agreement with UPPCL for jointly participating in the proposed pump storage bidding process. The UPPCL shall be procurement power from the project from May to Oct and MPPMCL shall be procuring power for the balance period i.e. from Nov to April according to the load curve of respective States. Since this will be a joint project to be utilised by 2 States, tariff of the project shall be adopted by Central Commission under section 63 of the Act.
- vi) **Solar Capacity from CPSU:** - Regarding procurement of Solar Power from CPSU Scheme, petitioner stated that Government of India, Ministry of New & Renewable Energy vide Order no. 283/20/2019-Grid Solar dated 03.07.2019 has approved the implementation of CPSU scheme

phase-II for setting up 12000 MW Grid-connected Solar photovoltaic (PV) power projects by CPSUs/Government organization. The main objective of this scheme is to set up solar PV projects through Government Producers using domestic cells & modules in WTO compliant manner to facilitate national energy security and environment sustainability for Government purposes. GM (Commercial) NTPC Ltd vide letter dated 21.12.2021 read with the letter dated 17.11.2022 had offered 400-500 MW Solar PV power for sale to Petitioner from their project being developed at khavda, Kutch, Gujarat by their subsidiary NPTC Renewable Energy Ltd under CPSU Scheme Phase-II, Tranche-III. The tariff of Solar PV power offered to the Petitioner was Rs 2.57/Kwh (inclusive of rise in rate of GST from 5% to 12%). Further, General Manager (Power Trading) SECI vide letter 50547 dated 05.08.2022 read with the letter 52209 dated 03.11.2022 had offered sale of 1200 MW Solar PV power to the Petitioner under CPSU scheme phase-II at a tariff of Rs.2.57/Kwh. After the approval of proposal from Board of Directors, Petitioner has provided consent to NTPC REL vide letter no. 1591 dated 13.12.2022 and to SECI vide letter no. 1589 dated 13.12.2022 and executed Power Usage Agreement as under: -

- 315 MW Solar Power NTPC REL PUA Dated 05.06.2023
- 185 MW Solar Power NTPC REL PUA Dated 05.06.2023
- 500 MW Solar Power SECI PUA Dated 11.07.2023

vii) Solar Capacity under KUSUM A & C Scheme:

MNRE, GoI, vide its OM No. 32/645/2017-SPV Division dated 22.07.2019 issued guidelines for implementation of various components under PM KUSUM Scheme for components A, B & C. Superintending Engineer MPUVN vide his letter No. 1548 dt. 17.07.2023 has informed that after implementation schedule of KUSUM-A & C scheme and the year wise expected capacity addition will be as under: -

| Name of Scheme | FY-2023 (MW) | FY-2024 (MW) | FY-2025 (MW) | FY-2026 (MW) | FY-2027 (MW) | Total (MW) |
|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------------|
| KUSUM-A | 3 | 200 | 150 | 100 | 47 | 500 |
| KUSUM-C | 0 | 8 | 350 | 400 | 492 | 1250 |

It is stated by the petitioner that upto FY 2027, about 1750 MW Solar PV capacity will be added on implementation of KUSUM- A & C Schemes, out of which capacity approval for 300 MW solar capacity under KUSUM-A and 100 MW of KUSUM C scheme has been already granted by Commission in Petition no. 55/2021 and Petition no. 32/2022 against the requested 1250 MW capacity. Therefore, balance 200 MW Solar Capacity under KUSUM – A Scheme and 1150 MW Solar Capacity under KUSUM – C Scheme is proposed for approval of Capacity Addition in the present petition.

viii) 650 MW RE RTC Power: Consent for procurement of 650 MW RE RTC Power on long term basis from upcoming Hybrid RE Project of SECI on 6 monthly sharing (MP will avail power from October to March each year) subject to rate reasonability of discovered tariff of the project

has been issued by the petitioner on 05.07.2022 to SECI. SECI vide letter dated 15.09.2022 provided capacity bifurcation as under: -

The tentative installed Project capacities of Solar and Wind are envisaged to be 800 MW and 3200 MW respectively. Project configuration is also envisaged to include Energy Storage Capacity of ~ 800 MWh.

Energy Bifurcation: The tentative Energy supply component of Solar and Wind out of the total supply of 2.85 BUs (650 MW for 6 months) is envisaged to be 0.57 BUs Solar (20%) and 2.28 BUs Wind (80%). Also, the estimated units though energy storage capacity estimated will be 0.144 BUs, which can be used for meeting Energy Storage Obligation.

- ix) **227 MW HYDRO Power:** Petitioner had sent consent to NHPC to procure power from their upcoming Hydel Project being developed by NHPC and its JVs at various location in North-East states and union territories of J & K against which NHPC informed tentative allotment vide email on 30.11.2022 subject to decision of CEA/ Ministry of Power, GoI as under: -

| <i>Description</i> | <i>Teesta VI</i> | <i>Rangit IV</i> | <i>Ratle</i> | <i>Dibang MPP</i> | <i>Dugar</i> |
|----------------------------------|---------------------------|---------------------------|---------------------------|------------------------------------|----------------------------------|
| <i>State/UT</i> | <i>Sikkim</i> | <i>Sikkim</i> | <i>UT of J&K</i> | <i>Arunachal Pradesh</i> | <i>Himachal Pradesh</i> |
| <i>Installed Capacity (MW)</i> | <i>500</i> | <i>120</i> | <i>850</i> | <i>2880</i> | <i>500</i> |
| <i>Design Energy (MU)</i> | <i>2400</i> | <i>507.88</i> | <i>3136.77</i> | <i>11223</i> | <i>1759.85</i> |
| <i>Peaking Capacity</i> | <i>2.3 Hrs</i> | <i>3.0 Hrs</i> | <i>1.96 Hrs</i> | <i>More than 3.0 Hrs (Storage)</i> | <i>3.62 Hrs</i> |
| <i>Expected Commissioning</i> | <i>March 2024</i> | <i>May 2024</i> | <i>Feb 2026</i> | <i>July 2031</i> | <i>Aug 2028</i> |
| <i>Levelized Tariff (Rs/Kwh)</i> | <i>4.07</i> | <i>4.37</i> | <i>3.92</i> | <i>4.73</i> | <i>4.46</i> |
| <i>Status of Project</i> | <i>Under Construction</i> | <i>Under Construction</i> | <i>Under Construction</i> | <i>PIB/CCEA Sanction Awaited</i> | <i>PIB/CCEA Sanction Awaited</i> |
| <i>Tentative Allotment</i> | <i>90 MW</i> | <i>43 MW</i> | <i>94 MW</i> | <i>0</i> | <i>0</i> |

Above projects are eligible for HPO benefits. During high inflow season (March to September) hydro project will provide full capacity on RTC basis and during lean season (October to February), projects will provide morning/evening peaking power based on water availability. Tariff will be determined by CERC under section 62 of EA 2003.

- x) Commission noted that prior to this petition, petitioners approached the Commission for approval of capacity addition for procurement of power from renewable energy sources through

various petitions. Capacity addition approved by this Commission for requirement of renewable energy is summarized as under: -

| Sr. No. | Petition no. | Order dated | Capacity Approval | | |
|---------|--------------|-------------|--|---|----------------|
| | | | Solar | Wind | Total |
| 1 | 65 of 2020 | 27.05.2021 | 1000 MW -NHPC 900 MW-SECI (Tranche-IV) 600 MW-RUMS 100 MW-SECI (JNNSM Phase-II) | 500 MW-SECI(Tranche-IV) 450 MW-SECI | 3550 MW |
| 2 | 55 of 2021 | 31.03.2022 | 140 MW- SECI (Blended) 1199 MW-Agar, Neemuch, Shajapur RUMSL Solar Park 300 MW- Kusum A | 560 MW-SECI (Blended) | 2199 MW |
| 3 | 32 of 2021 | 28.07.2022 | 100 MW-Kusum C 400 MW Omkareshwar Floating + 700 MW RUMS, Chhatarpur 250 MW-RUMS Hybrid | 440 MW-SECI Tranche XI Project 500 MW- RUMS Hybrid | 2390 MW |
| Total | | | 5689 MW | 2450 MW | 8139 MW |

- xi)** Commission noted that petitioner has computed the estimated power procurement considering the proposed capacity additions of Wind, Solar and Hydro power to arrive at estimated RPO compliance from various RE sources as per trajectory of Commission in MPERC (Co-generation and Generation of Electricity from Renewable Sources of Energy) (Revision-II) Regulations, 2021. For this purpose, petitioner has considered power requirement approved by Commission from 2022-23 to 2026-27 as per MYT Tariff order dated 31.03.2022 passed in Petition No. 04/2022 and ARR & Tariff order dated 28.03.2023 passed in Petition No. 84/2022 and extrapolated the power requirement till 2029-30 based on CAGR worked out on the basis of power procurement approved by Commission from 2022-23 to 2026-27. Commission noted that truing up order for FY 2022-23 has already been issued and energy requirement has been revised from 85696 MUs to 84957 MUs.
- xii)** Commission also noted that Petitioner has computed the peak availability of power to meet projected peak demand during non-solar hours considering the additional capacities of RE power in the instant petition and also all the capacities of RE power approved by the Commission so far as under: -

| FY | 23-24 | 24-25 | 25-26 | 26-27 | 27-28 | 28-29 | 29-30 | 30-31 | 31-32 |
|-------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Peak Availability in MW | 14945 | 14973 | 14968 | 15703 | 17389 | 18192 | 18180 | 18170 | 18852 |
| Peal Load in MW | 16032 | 17150 | 18058 | 19162 | 20055 | 21187 | 21981 | 22753 | 23544 |
| Peak Deficit in MW | -1087 | -2177 | -3090 | -3459 | -2666 | -2995 | -3801 | -4583 | -4692 |

Considering the above projections, Commission has already approved capacity addition for 378.24 MW power on medium term basis vide order dated 10.11.2023 in the instant petition.

- xiii)** Commission noted that while the capacity of the projects proposed to be contracted in this petition would be contributing to the management of peak demand from 2023-24 onwards but it would also generate significant surplus RE energy from Wind Energy Sources over and above RPO target during the period from 2025-26 to 2027-28. There would be deficit during 2022-23, 2023-24 and from 2028-29 onwards, against RPO targets. Commission observed that the main reason of surplus Wind Energy over and above RPO Target appears to be contribution of 2280 MU per annum energy from 3200 MW Wind Power from Dec 25 onwards being a part of 650 MW RE RTC Project of SECI (which envisages 80% energy from wind sources). Since this energy will be available as RTC energy, there should not be any difficulties in managing the wind surplus energy computed by petitioner.
- xiv)** During final hearing held on 05.12.2023, Commission enquired from petitioner regarding renewable consumption obligation (RCO) notified by Ministry of Power, GoI vide notification No. S.O. 4617(E) dated 20.10.2023 under Energy Conservation Act, 2001. Petitioner confirmed that they are fully aware of the renewable consumption obligation notified by Ministry of Power vide notification no. No. S.O. 4617(E) dated 20.10.2023 and that the current level of RPO specified by Commission is well within the limit of RCO notified by Ministry of Power, GoI.
- xv)** Commission also noted that Respondent no. 5 i.e. State Transmission Utility on behalf of MPPTCL has submitted that adequate transmission corridor in ISTS/ MP system shall be available in the year 2024-25 for drawl of 1133MW, in the year 2025-26 for drawl of 744MW and in the year 2027-28 for drawl of the balance power from the procured additional capacities (as detailed in para 10 of the petition) over and above existing capacities of power to be procured from RE projects for fulfilment of RPO target by the petitioner (MPPMCL) to meet the load requirement of State over the years.
- xvi)** Petitioner has submitted that Commission has accorded approval in petition no. 32 of 2021 for addition of 250 MW Solar Power and 500 MW wind power under 750 MW Hybrid project of RUMS. Executive Engineer RUMSL vide letter dated 17.10.2022 informed that as per bids received the capacity of Solar power changed to 441 MW and capacity of wind power changed to 309 MW. Petitioner has therefore requested to modify the approved capacity of 250 MW to 441 MW Solar Power and 500 MW to 309 MW Wind Power under 750 MW Hybrid project of RUMS.
- xvii)** Commission noted that on the request of petitioner in petition no. 55 of 2021, Commission accorded approval for capacity addition of 700 MW blended project of SECI having 140 MW Solar and 560 MW Wind Power components. In the instant petition, petitioner has computed estimated energy of 700 MW blended projected of SECI with configuration of 32 MW Solar and 668 MW Wind as per the bids received by SECI. Petitioner has however not provided any documents to substantiate change of mix of Solar and Wind Power components of the blended power of 700 MW capacity.

xviii) Commission further noted that the petitioner in its comments on draft first amendment to MPERC (Co-generation and Generation of Electricity from Renewable Sources of Energy) (Revision-II) Regulations, 2021 had submitted that due to uncertainty of the wind energy, smooth grid operation during non-solar hours is difficult but the proposed capacities of wind energy is resulting into surplus power over and above RPO targets in some of the years for which no justification has been given by petitioner. The Commission has however noted that the excess energy of wind would be due to Wind Component of 650 MW RE RTC power as discussed in Para 9(xii) of this order.

xix) Commission noted that regulation 3.2 of MPERC (Cogeneration and Generation of Electricity from Renewable Sources of Energy) Regulations, 2021 stipulates as under: -

“3.2 If the Distribution Licensees fulfil the minimum purchase obligation and still have offers from renewable energy generators including Co-generators from Renewable Sources, then either the Distribution Licensee or the Investor/Developer can approach the Commission for approval of such additional procurement offers.”

In light of the provisions of regulation 3.2 and requirement of RE RTC power, Commission considered the request of petitioner for procurement of wind power over and above RPO trajectory and granted in-principle approval for capacity addition of wind power as proposed by the petitioner.

xx) Considering the peak demand requirement and RPO targets, availability of ATC as submitted by State Transmission Utility and other submissions made by petitioner, Commission has accepted the computation of RPO compliance submitted by petitioner as under: -

| WIND RPO | | | | | | | | | |
|----------|---|--------------|--------------|--------------|--------------|--------------|--------------|-------------|--------------|
| S. No | Particulars | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 | 2028-29 | 2029-30 |
| 1 | Energy Requirements (MUs) - Till FY 2026-27 as per MYT and from FY 2028 to 30 extrapolated at same growth. Energy requirements is updated with yearly ARR | 84,957 | 89,949 | 97,663 | 1,04,036 | 1,11,863 | 1,19,568 | 1,27,805 | 1,36,609 |
| 2 | RPO Targets % - Wind | 0.81% | 1.60% | 2.46% | 3.36% | 4.29% | 5.23% | 6.16% | 6.94% |
| 3 | Wind Energy Required - MUs | 688 | 1,439 | 2,403 | 3,496 | 4,799 | 6,253 | 7,873 | 9,481 |
| 4 | Wind Energy Available - Assessed Mus (*) | 363 | 1,309 | 3,986 | 5,030 | 8,742 | 8,742 | 8,742 | 8,742 |
| 5 | Achievement % | 0.43% | 1.46% | 4.08% | 4.83% | 7.82% | 7.31% | 6.84% | 6.40% |
| 6 | Target Achieved % | 53% | 91% | 166% | 144% | 182% | 140% | 111% | 92% |
| 7 | Surplus/Deficit - MUs | (325) | (130) | 1,583 | 1,534 | 3,944 | 2,489 | 870 | (738) |

| 8 | Balance Capacity Required in addition to the capacity addition proposed in this petition (@38% CUF) - MW | 98 | 39 | - | - | - | - | - | 222 |
|---|---|---------|---------|---------|----------|----------|----------|----------|----------|
| * Considering existing tied up/ approved capacity plus proposed capacity in this petition | | | | | | | | | |
| HPO | | | | | | | | | |
| S. No | Particulars | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 | 2028-29 | 2029-30 |
| 1 | Energy Requirements (MUs) - Till FY 2026-27 as per MYT and from FY 2028 to 30 extrapolated at same growth. Energy requirements is updated with yearly ARR | 84,957 | 89,949 | 97,663 | 1,04,036 | 1,11,863 | 1,19,568 | 1,27,805 | 1,36,609 |
| 2 | RPO Targets % - HPO | 0.35% | 0.66% | 1.08% | 1.48% | 1.80% | 2.15% | 2.51% | 2.82% |
| 3 | Hydro Energy Required - MUs | 297 | 594 | 1,055 | 1,540 | 2,014 | 2,571 | 3,208 | 3,852 |
| 4 | Hydro Energy Available - Assessed Mus (*) | 113 | 148 | 973 | 1,183 | 1,500 | 1,500 | 1,500 | 1,500 |
| 5 | Achievement % | 0.13% | 0.16% | 1.00% | 1.14% | 1.34% | 1.25% | 1.17% | 1.10% |
| 6 | Target Achieved % | 38% | 25% | 92% | 77% | 74% | 58% | 47% | 39% |
| 7 | Surplus/Deficit - MUs | (184) | (445) | (82) | (357) | (514) | (1,071) | (1,708) | (2,353) |
| 8 | Balance Capacity Required in addition to the capacity addition proposed in this petition @48% PLF - MW | 44 | 106 | 19 | 85 | 122 | 255 | 406 | 560 |
| * Considering existing tied up/ approved capacity plus proposed capacity in this petition | | | | | | | | | |

| Other RPO | | | | | | | | | |
|------------------|---|---------|---------|---------|----------|----------|----------|----------|----------|
| S. No | Particulars | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 | 2028-29 | 2029-30 |
| 1 | Energy Requirements (MUs) - Till FY 2026-27 as per MYT and from FY 2028 to 30 extrapolated at same growth. Energy requirements is | 84,957 | 89,949 | 97,663 | 1,04,036 | 1,11,863 | 1,19,568 | 1,27,805 | 1,36,609 |

| | | | | | | | | | |
|--|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | updated with yearly ARR | | | | | | | | |
| 2 | RPO Targets % - Other RPO | 23.44% | 25.13% | 25.63% | 26.13% | 26.63% | 27.13% | 27.63% | 28.13% |
| 3 | Renewable Energy Required - MUs | 20,087 | 22,604 | 25,031 | 27,185 | 29,789 | 32,439 | 35,312 | 38,428 |
| 4 | Renewable Energy Available - Assessed MUs (*) | 19,914 | 18,175 | 24,327 | 28,578 | 31,386 | 32,377 | 32,377 | 32,377 |
| 5 | Achievement % | 23.22% | 20.21% | 24.91% | 27.47% | 28.06% | 27.08% | 25.33% | 23.70% |
| 6 | Target Achieved % | 99% | 80% | 97% | 105% | 105% | 100% | 92% | 84% |
| 7 | Surplus/Deficit - MUs | (190) | (4,429) | (704) | 1,393 | 1,597 | (62) | (2,935) | (6,051) |
| 7 | Balance Capacity Required in addition to the capacity addition proposed in this petition @28% CUF - MW | 78 | 1,806 | 287 | (568) | (651) | 25 | 1,197 | 2,467 |
| * Considering existing tied up/ approved capacity plus proposed capacity in this petition | | | | | | | | | |
| STORAGE | | | | | | | | | |
| S. No | Particulars | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 | 2028-29 | 2029-30 |
| 1 | Energy Requirements (MUs) - Till FY 2026-27 as per MYT and from FY 2028 to 30 extrapolated at same growth. Energy requirements is updated with yearly ARR | 84,957 | 89,949 | 97,663 | 1,04,036 | 1,11,863 | 1,19,568 | 1,27,805 | 1,36,609 |
| 2 | Targets % - Storage | 0.00% | 0.00% | 0.00% | 1.00% | 1.50% | 2.00% | 2.50% | 3.00% |
| 3 | Renewable Energy Required – MUs (*) | - | - | - | 1,040 | 1,678 | 2,391 | 3,195 | 4,098 |
| 4 | Storage Capacity Available - MUs | - | - | - | 36 | 692 | 692 | 692 | 938 |
| 5 | Achievement % | 0.00% | 0.00% | 0.00% | 0.03% | 0.62% | 0.58% | 0.54% | 0.69% |
| 6 | Target Achieved % | - | - | - | 3% | 41% | 29% | 22% | 23% |
| 7 | Surplus/Deficit - MUs | - | - | - | (1,004) | (986) | (1,700) | (2,504) | (3,160) |
| 8 | Storage Capacity Required MW - 3 Hours & 1 Cycle (BESS) | - | - | - | 917 | 901 | 1,552 | 2,286 | 2,886 |
| 9 | Storage Capacity Required MW - 6 Hours & 1 Cycle (PSP) - 365 Days | - | - | - | 459 | 450 | 776 | 1,143 | 1,443 |
| 10 | Storage Capacity Required MW - 6 Hours & 1 Cycle (PSP) - 6 Months | - | - | - | 917 | 901 | 1,552 | 2,286 | 2,886 |
| * Considering existing tied up/ approved capacity plus proposed capacity in this petition | | | | | | | | | |

xxi) Commission noted that even after capacity addition as proposed in the instant petition, there would be further capacity requirement to meet the existing RPO targets specified by Commission. The energy surplus of Wind and Hydro Power in the years between 2022-23 to 2029-30 can be utilized by petitioner for offsetting the shortfall in other categories as per the fungibility allowed in MPERC (Co-generation and Generation of Electricity from Renewable Sources of Energy) (Revision-II) Regulations, 2021 as amended from time to time. Commission has worked out the surplus energy from RE sources after considering fungibility allowed in MPERC (Co-generation and Generation of Electricity from Renewable Sources of Energy) (Revision-II) Regulations, 2021 as amended as under: -

| Status of Surplus RE Energy after adjustment as per allowed fungibility | | | | | | | | |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Source/ FY | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 | 2028-29 | 2029-30 |
| Gross Energy as per approved ARR/ Truing up | 84957 | 89949 | 97663 | 104036 | 111863 | 119568 | 127805 | 136609 |
| (Surplus/ Deficit)- Wind Energy (A) | -331 | -130 | 797 | 1177 | 3430 | 1356 | 0 | -738 |
| (Surplus/ Deficit)- Hydro Energy (B) | -186 | -445 | 0 | 0 | 0 | 0 | -208 | -2353 |
| Total C= (A+B) | -517 | -575 | 797 | 1177 | 3430 | 1356 | -208 | -3091 |
| (Surplus/ Deficit)- Other (D) | -363 | -4429 | 0 | 1393 | 1597 | 0 | -2935 | -6051 |
| (Surplus/ Deficit)- Final Status after fungibility E=C+D | -880 | -5004 | 797 | 2570 | 5027 | 1356 | -3143 | -9142 |

Order

10. Considering the submissions made by petitioners and respondents, Commission hereby accords following in-principle approvals, in addition to the approval granted vide order dated 10.10.2023 in the instant petition for medium term power procurement of 378.24 MW: -

- (a) Capacity addition of 2350 MW Solar (Comprising 200 MW Kusum A, 1150 MW Kusum C, 500 MW SECI & 500 MW NTPC Solar)), 500 MW Pump Storage, 650 MW RE RTC (comprising 800 MW Solar and 3200 MW Wind capacity) and 227 MW Hydro Projects as submitted in Para 10 of the petition.
- (b) Revision in capacity mix in RUMSL Hybrid Project of 750 MW from 250 MW Solar + 500

MW Wind granted vide order dated 28.07.2022 passed in petition no. 32 of 2021 to 441 MW Solar +309 MW Wind.

- (c) Petitioner is directed to approach this Commission for approval of power purchase/ supply agreement to be executed with RE generators promptly after the tariff is adopted / determined by the appropriate Commission in terms of regulation 4.24 of the MPERC (Power Purchase and Procurement Process) Regulations, 2023.
- (d) Petitioner is directed to make proper cost benefit analysis for purchase of surplus RE power over and above the RPO targets before entering into power purchase agreements with RE generators so that the interests of end consumers are protected.
- (e) Managing Director, MPPMCL is also directed to review the project commissioning as well as fulfillment of RPO on quarterly basis and in case of any slippage or shortfall, prompt action be taken for procurement of RE power from alternate sources or for purchase of RE certificates in order to fulfil the RPO targets.
- (f) The surplus RE power for any duration and time blocks should be utilised / disposed of in an optimum and efficient manner. The surplus RE power may be used to meet overall demand of retail consumers and also of green tariff consumers. After meeting the demand of consumers, surplus RE power may be disposed of at Green DAM on power exchanges.
- (g) Petitioner is further directed to approach this Commission for balance capacity addition as envisaged in the computations submitted in the instant petition in due course of time.
- (h) As per clause 6.1 of the MPERC (Power Purchase and Procurement Process) Regulations, 2023, monthly/weekly/day-ahead/intraday power procurements/sale by the Licensees and generator schedule should be made available on the websites of petitioner who is handling power procurement on behalf of the distribution licensees and SLDC within 30 days of such procurements/sale with ease of access to the current as well as archived data.

With the aforesaid directions, subject petition stands disposed of.

(Prashant Chaturvedi)
Member

(Gopal Srivastava)
Member(Law)

(S.P.S. Parihar)
Chairman