

RAJASTHAN ELECTRICITY REGULATORY COMMISSION, JAIPUR

In the matter of the RERC (Renewable Purchase Obligation) Regulations, 2023.

Coram:

Dr. B.N. Sharma, Chairman

Sh. Hemant Kumar Jain, Member

Dr. Rajesh Sharma, Member

Date of hearing:

20.04.2023

Date of Order:

13.06.2023

Memo on Statement of objects & reasons and consideration of Comments/ Suggestions, received from various stakeholders:

Background:

1. The Rajasthan Electricity Regulatory Commission (RERC or Commission), in the exercise of the powers conferred by Section 86(1) (e) Read with section 181 of the Electricity Act, 2003 (Act 36 of 2003) prepared the following Regulations (hereinafter referred to as 'the draft Regulations'), namely:

"Rajasthan Electricity Regulatory Commission (Renewable Purchase Obligation) Regulations, 2023"

2. These Draft Regulations along with the Explanatory Memorandum and Public Notices were placed on the website of the Commission for inviting public comments. Comments/suggestions were also invited from interested persons through Public Notices published in the following newspapers, on the dates indicated against each.

| | | | |
|-----|--------------------|---|------------|
| (1) | Dainik Bhaskar | : | 07.01.2023 |
| (2) | Rajasthan Patrika | : | 07.01.2023 |
| (3) | The Times of India | : | 07.01.2023 |

3. The last date for submission of comments/suggestions by the interested persons/ public was 31.01.2023. There were Fourteen (14) stakeholders who offered their comments/suggestions on the Draft Regulations and Explanatory

Memorandum, which have been considered by the Commission while finalising the Regulations, is placed at **Annexure-I**.

4. Public Hearing in the matter took place on 20.04.2023. The list of the stakeholder present during the hearing is placed at **Annexure-II**.

5. The main comments and views expressed by the stakeholders through their written submissions and during the hearing and the Commission's views thereon have been summarised in the following paragraphs. It may be noted that all the suggestions given by the stakeholders have been considered, and the Commission has attempted to elaborate all the suggestions and the Commission's decisions on each suggestion in the Statement of Reasons. However, in case any suggestion is not specifically elaborated, it does not mean that the same has not been considered.

6. The comments/suggestions have been grouped depending on their nature and relevance.

7. **RPO Targets:**

Commission's Proposal:

7.1 Commission in the draft Regulations proposed as under;

"4. The minimum Renewable Purchase Obligations for the obligated entities shall be as under:

(1) Distribution Licensee including deemed licensee:

| S.No. | Year | Wind RPO | HPO | Other RPO | Total RPO |
|-------|---------|----------|-------|-----------|-----------|
| 1 | 2024-25 | 2.46% | 1.08% | 26.37% | 29.91% |
| 2 | 2025-26 | 3.36% | 1.48% | 28.17% | 33.01% |
| 3 | 2026-27 | 4.29% | 1.80% | 29.86% | 35.95% |
| 4 | 2027-28 | 5.23% | 2.15% | 31.43% | 38.81% |
| 5 | 2028-29 | 6.16% | 2.51% | 32.69% | 41.36% |
| 6 | 2029-30 | 6.94% | 2.82% | 33.57% | 43.33% |

Provided that Wind RPO Shall be met by energy produced from Wind Power Projects (WPPs) commissioned after 31.03.2022 and the wind energy consumed over and above 7% from WPPs commissioned till 31.03.2022. Hydro power Purchase Obligation (HPO) shall be met only by energy produced from Hydro Power Projects (Including PSPs and Small Hydro

Pumps (SHPs)), commissioned after 8th March 2019. Other RPO may be met by energy produced from any RE based/green energy based power project not mentioned in Wind RPO and HPO.

Provided further that from FY 2024-25 onwards, the energy from all Hydro Power Projects (HPPs) will be considered as part of RPO. The HPO trajectory, as per above table will continue to prevail for LHPs commissioned after 8th March 2019. Energy from all other HPPs including free power from HPPs commissioned before 08.03.2019 will be considered as part of 'RPO' under category of 'other RPO'.

Provided also that RPO shall be calculated in energy terms as a percentage of total consumption of electricity.

Provided also that HPO obligation of the State/Discom could be met out of the free power being provided to the State from Hydro Power Projects (Including PSPs and Small Hydro Pumps (SHPs)), commissioned after 08.03.2019 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.

Provided also that in case the free power mentioned above is insufficient to meet the HPO obligations, then the obligated entity would have to buy the additional hydro power to meet its HPO obligation or may have to buy corresponding amount of Renewable Energy Certificate corresponding to Hydro Power.

Provided also that the Renewable Energy Certificate mechanism corresponding to Hydro Power/Other RE Power to facilitate compliance of HPO/Other RE Power obligation shall be in accordance with mechanism specified by Central Electricity Regulatory Commission (CERC).

Provided also that the HPO trajectory shall be trued up on an annual basis depending on the revised commissioning schedule of Hydro projects.

Provided also that in case of 'Other RPO', any shortfall remaining in achievement of 'Other RPO' category in a particular year can be met with either excess energy consumed from wind power projects, commissioned after 31st March 2022 beyond 'Wind RPO' for that year or with, excess energy consumed from eligible Hydro Power Projects (Including PSPs and Small Hydro Pumps (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 consumed from Hydro Power Plants, which is in excess of 'HPO' for that year and vice versa.

Provided also that Hydro Power Purchase Obligation (HPO) shall be met from the power procured from eligible large hydro power projects including pump storage projects having capacity more than 25 MW (LHPs) commissioned on and after 08.03.2019 and up to 31.03.2024 in respect of 70% of the total generated capacity for a period of 12 years from the date of commissioning. Free power to be provided as per the agreement with the State Government and that provided for Local Area Development Fund

(LADF), shall not be included within this limit of 70% of the total generated capacity.

Provided also that hydro power imported from outside India shall not be considered for meeting HPO."

Comments received:

7.2 Some of the stakeholders suggested that separate RPO for biomass may not be discontinued on the premise that MNRE/MoP has not provided a separate RPO for Biomass power as they never stipulated in past as well. The rural development and employment generation from biomass projects is unparalleled to any other RE segment and the GoR in its Policy 1999, the GoR Policy 2009 and the GoR Policy 2010 also emphasised the promotion of biomass-based power in the State of Rajasthan. In addition, the biomass based power generation has certain special features such as it is firm in nature, does not require additional investment in storage, fuel used in biomass power generation requires a small quantity of water and the purchase of Biomass purchase provides farmers with an additional income. Further, the capital investment in biomass-based power plants is more productive as their PLF is higher at 75-80% as compared to 20% in the case of solar and wind power projects. Besides, the power generated gets consumed in the vicinity as such the investment on evacuation is NIL. RREC, the Nodal Agency also recommended the case to MOP/MNRE for exempting the state from the use of biomass as fuel by thermal power stations to the extent of 5%. In the past Commission has rightly provided a separate RPO for biomass, which may be continued and a special RPO may be fixed for biomass-based power for FY 2024-25 to 2029-30.

7.3 One of the stakeholders requested that the PPAs of three operating plants of 23.5 MW under the GoR 1999 Policy may be extended to ensure that biomass-based power generation is continued. Further, the tariff of all biomass based power plants under the GoR Policy 1999 may be continued on the same terms.

7.4 Stakeholder submitted that according to the Electricity Act and the Tariff Policy, the RPO trajectory can be different in the States depending

upon the availability of RE Resources. The RPO trajectory specified by the Commission up to FY 2023-24 is quite reasonable & practical. It is suggested by the stakeholder that this trajectory can be further specified, w.e.f., FY 2024-25 onward, initially for 3 years and then can be reviewed for a further three years up to FY 2029-30.

7.5 Some stakeholders commented that Commission should top up the wind RPO for 2022-23 and FY 2023-24, which is 2.41%, in the next three years so that the overall trajectory remains the same. Further, wind RPO compliance be made stringent such that wind RPO is met with wind energy only and any shortfall in wind RPO compliance can be met only by the purchase of Wind REC certificates and if not met, then the obligated entity should be penalised.

7.6 It is suggested by one of the stakeholders that all categories of RPO (Wind, HPO, & other RPO) may be combined into one category, looking at no possibility of New Hydro projects including very little possibility of PSP, as well as addition of new Wind capacity in State.

7.7 Another stakeholder submitted that as Solar and biomass power both are under "Other category", the State Discom(s) will prefer to purchase solar power only because of high potential and lower tariff of Solar Energy. In this situation, promotion of Biomass sector will get affected adversely. It is suggested by the stakeholder that the RPO for biomass Energy needs to be bifurcated and further, consumption of biomass fuel by thermal plant as per the MoP direction may also be included in the Biomass RPO trajectory.

7.8 One of the stakeholders submitted that though the RPO targets are in line with MoP, the steep increase will add an additional burden on the Discoms, which are already falling short in meeting their RPO targets. It is suggested that the RPO trajectory should be commensurate with the demand growth and endowment of RE in the State. If there is no adequate demand growth, then an aggressive RPO trajectory and its compliance will result in more stranded capacity, which will result in higher fixed cost

obligations on the utilities. Thus, RPO trajectory and penalty for its non-compliance should be decided considering the state-specific demand-supply factors.

7.9 It is also submitted by one of the stakeholders that the year-wise targets may be streamlined so that Discoms can achieve their overall targets by FY 2029-30. It is further submitted that solar as of date is a reliable and cheap energy source to meet day power requirements and dependence on solar energy is bound to increase not only to meet the RPO but also to keep overall power purchase cost down for the benefit of the consumers. However, no separate category for Solar RPO has been specified in the draft Regulations. Looking at the peculiar State specific factor of abundant availability of Solar Energy, any shortfall in Wind RPO or HPO may be allowed to be met through Solar Energy. Rajasthan has very little hydro potential and depends on hydro energy tie-ups from projects located outside Rajasthan and requested to allow the surplus generation from new solar projects also to meet the HPO in case there is any shortfall in HPO even after considering surplus energy from 'Wind RPO'.

7.10 One stakeholder suggested that the MoP order dated 22.07.2022 does not put the restrictions as regards the eligibility of hydro projects commissioned on or after 08.03.2019 for meeting HPO and free power provided as per the agreement with the State Government and that provided for Local Area Development Fund (LADF) shall not be included within the limit of 70% of the total generated capacity. Therefore, 9th proviso under regulation 4(1) containing the above restrictions may be deleted from the draft Regulations.

7.11 Some stakeholders requested that Commission may reconsider the classification of RPO targets and consider a composite RPO for the State as the separate solar and non-solar categorisation was envisaged when RE prices were high and target separation was required to promote resource specific RE procurement by entities. Now, both solar and wind are among the cheapest sources of power generation. In the recently approved regulations

by CERC on the Renewable Energy Certificate (REC) mechanism, there is no separate classification of "solar" and "non-solar" RECs. This will be beneficial for distribution companies in planning renewable power procurement, which is most suitable for their load shapes and growth. States like Karnataka and Andhra Pradesh have already adopted composite RPO.

7.12 One of the stakeholders commented that in view of the importance of solar power in powering agriculture in the daytime, its wider economic benefits and considering the slower progress of KUSUM in the State, the Commission may consider separate RPO target for the KUSUM scheme projects in the State until FY 2026 or FY 2027 with a sunset clause. It is also cited that the recent study by NREL according to which shifting agriculture demand to daytime hours can provide significant cost savings, in particular to Rajasthan, if agriculture demand (which is 45% of overall state demand in FY 2029-30 as per the Central Electricity Authority's 20th Electric Power Survey (EPS)) is shifted to daytime, modelling results show that the overall cost of the state power sector will be 18% lower and 1.5% lower across India by 2050.

7.13 It is also suggested by the stakeholder that in view of the well-known socio-economic impact of large hydro projects, long gestation period, capital nature and reportedly cost over-run, the proposed Regulations should be redrafted so that there should be no new separate HPO or a separate hydro obligation as part of the existing RPO.

7.14 It is also suggested by one of the stakeholders that biomass RPO may be specified as a subcategory of 'Other RPO' and may be specified as 2.0% of other -RPO (i.e., biomass RPO for FY 2024-25 to be 2.0% of 24.81%=0.50%). Further, for Biomass RPO, power generation other than by Rankine cycle e.g., through internal combustion engines or gas turbines or fuel cells using methane produced by in-aerobic fermentation of urban waste may also be included. It is further suggested by him that trajectory as per MOP order can be specified by the Commission for FY 2023-24 and Regulations can be made effective from 1.4.2023 to enable Discoms to undertake purchases from RE storage which, in the future, will be required for managing grid operations.

Commission's views:

7.15 Commission has framed the present draft Regulations aligned with the trajectory notified by the Ministry of Power, Government of India keeping in view that collective effort is crucial in achieving the commitment that the Government of India has made to achieve the target of 500 GW capacity from non-fossil sources by 2030.

7.16 It is also vehemently requested by several stakeholders that a separate Biomass RPO may be continued. It was requested to bifurcate the Other RPO category into Biomass RPO. One stakeholder has requested to extend the PPAs of biomass projects under the GoR Policy 1999 and also requested that their tariff may be continued on the same terms.

7.17 As far as the existing biomass power plants are concerned, they are already having PPAs with Discoms and Discoms shall be under obligation to procure power as per the terms and conditions of their respective PPAs. Notification of the present Regulations will, in no way adversely affect the existing biomass power plants.

7.18 Further, the cases of the extended period, i.e., purchase of power beyond PPA period, shall be governed by the provisions of the applicable Tariff Regulations. Further, the Tariff for such purchaser shall be in accordance with provision of the RERC RE Tariff Regulations 2020 and amendments thereto. Therefore, no change is required in the proposed Regulations on this account.

7.19 Some stakeholders have requested for a separate RPO for biomass power. A similar request has also been made regarding solar power. In this regard the Commission is of the view that MoP has prescribed the RPO trajectory wherein biomass and solar power have been categorised under 'Other RPO'. The Commission intends to specify the RPO trajectory in the present Regulations in line with the trajectory prescribed by MoP keeping in

view the National targets to be achieved by the year 2030. It is open for the Discoms to purchase the most cost effective power under 'Other RPO' head. Thus, the above suggestion is not accepted, and no change is made in the draft Regulations on this account.

7.20 It is suggested that in view of the limited availability of hydropower potential and issues associated with such power projects, there should be no separate HPO. It is also the suggestion of the stakeholder that a solar being a cheap and reliable power, there should a separate solar RPO. Surplus generation from new solar projects may be allowed to meet the HPO in case there is a shortfall in HPO even after considering surplus energy from wind RPO. It is also suggested that looking to the abundance of solar power in the State, the State Discoms may be allowed to meet any shortfall in Wind RPO or HPO may be allowed to be met through solar Energy. It is also suggested that the hydro projects are capital intensive in nature and reportedly have cost overrun, there should be no separate HPO. In this regard, The Commission is of the view that though the hydro potential is limited in the State, however, in order to integrate the increased share of RE in the overall energy mix, the addition of hydropower projects and pumped storage is necessary and hydro projects in other states of the country need to be considered and promoted for achieving the National target of RPO specified by the Central Government. Considering this, the suggestions are not acceptable, in our view the HPO proposed in the draft Regulations should continue and no change is required in the draft Regulations.

7.21 Several stakeholders have also suggested having a composite RPO target. In our view, the separate RPO Targets for wind is justified on account of the fact that it is cost effective as well as complementary to Solar. Proper solar and wind mix will help to stabilise the grid. Similarly as explained above separate RPO for HPO is necessary in order to integrate the increased share of RE in overall energy mix

7.22 As regards the request of one of the stakeholders that wind RPO is met with wind energy only and any shortfall in wind RPO compliance can be met

only by purchase of wind REC, it is stated that Commission has framed the Regulations with a view that the RE is nature dependent and in case of the less availability from one RE resource, the shortfall can be made up from other available resources so that overall RPO is achieved by the obligated entities. Ministry has prescribed the RPO trajectory, keeping in view the nature of the different RE sources. The trajectory, among other things, provides that in case of any shortfall in achievement of the 'Other RPO' category in a particular year can be met with either excess energy consumed from wind power projects commissioned after 31.03.2022 beyond 'Wind RPO'. Further, any shortfall in the achievement of 'Wind RPO' in a particular year can be met with excess energy consumed from Hydro power plants, which is in excess of HPO for that year and vice-versa. In consideration that the above complementary mechanism outlined in the trajectory is in the best interest of the smooth and stable operation of the power system, we have proposed the same in the draft Regulations. Thus, the request of the stakeholder that wind RPO may be met by wind energy only is not accepted and no change on this account is required in the draft Regulations.

7.23 One of the suggestions received is that the proviso proposed in the draft regulations regarding eligibility of the hydro projects commissioned on or after 08.03.2019 and free power provided for LADF were not the part of MoP Notification dated 22.07.2022, hence related 9th proviso under regulation 4(1) may be deleted. We agree with the suggestion and accordingly, the relevant 9th proviso has been deleted in the finalised Regulations.

7.24 As regards the suggestion received that a separate solar RPO may be specified for the solar projects covered under the KUSUM scheme, it is stated that the projects covered under KUSUM Scheme are distributed generation in nature and multiple benefits accrue to the Discoms such as reduction in T&D losses, deferral in their investments in electric network upgradation etc., they will be readily purchasing such power. In addition, they can easily meet the

Solar RPO with such power purchases. Therefore, there is no requirement for a separate RPO for the projects of the KUSUM scheme.

7.25 As regards the suggested that the RPO trajectory and penalty for its non-compliance should be decided considering state specific demand supply factors, it is stated that RPO targets are in line with the trajectory prescribed by MoP considering the overall climate targets set by the GoI for 2030 and Rajasthan being the leading State in Renewable Energy there will be no difficulty in achieving the targets specified. In the low-demand scenario, the Discoms can trade the excess RE and earn revenue. Therefore, this suggestion is not acceptable.

7.26 As regards the suggestion of one of the stakeholders that consumption of biomass fuel by a thermal plant as per the MoP direction may also be included in the biomass RPO trajectory, it is clarified that such consumption of such power shall be counted towards the fulfilment of 'Other RPO'.

8. RPO for CPP:

Commission's Proposal:

8.1 Commission in the draft Regulations proposed as under: -

“(2) CPP & OA Consumers with 1 MW and above:

The RPO for the CPP & OA Consumers with 1 MW and above shall be as under: -

| S.No. | Year | Total RPO |
|-------|---------|-----------|
| 1 | 2024-25 | 29.91% |
| 2 | 2025-26 | 33.01% |
| 3 | 2026-27 | 35.95% |
| 4 | 2027-28 | 38.81% |
| 5 | 2028-29 | 41.36% |
| 6 | 2029-30 | 43.33% |

Provided that for CPPs commissioned before 1.04.2016, RPO shall be at the level as mandated by the Commission for the year 2015- 16. For CPPs commissioned from 1.04.2016 onwards, the RPO level as mandated by the Commission for the year of commissioning of the CPP shall be applicable.

Provided further that in case of any augmentation in the capacity, the RPO for augmented capacity shall be the RPO applicable for the year in which the CPP has been augmented.

Provided also that in case, for meeting the RPO obligation, CPP has surplus power than its consumption requirement, such a CPP may sell its surplus power

to the DISCOMs under the prevailing arrangements, if any, or in the power exchange.

Comments received:

8.2 Several stakeholders commented that the proposed clause in the draft is disturbing the harmony by differentiating the CPPs commissioned before 01.04. 2016 and after 01.04.2016 to have different RPO obligations, as there are no technical or other differences in both conditions. As per Section 86(1)(e) of the Electricity Act, 2003 there is no provision that the consumption of energy by the captive consumer shall be discriminated against regarding the applicability of Renewable Purchase Obligation. Any discrimination regarding the applicability of Renewable Purchase Obligation to other entities, i.e., distribution licensee, open access consumer or captive consumption by captive consumer is violative of Articles 14 and 19 of the Constitution of India.

8.3 It is stated that the Promotion of renewable energy generation and co-generation envisaged in the Electricity Act, 2003 as stated in the preamble of the Act to create environment benign policy is defeated, if the proposed draft will be finalized where the captive consumer is eligible to pollute the environment and not to use renewable energy generation or co-generation stated in the Electricity Act, 2003.

8.4 It is also submitted that the present draft of the Regulations should become effective prospectively and not retrospectively as per the provision of the Electricity Act, 2003. Therefore, the proposed revision of the RPO of Captive Power users capping the percentage (%) of RPO of captive generating plants is not legal and valid and deserves to be rejected. Pegging of RPO for CGP leads to a reduction in the generation of renewable energy and consumption of it by captive generating plants. The renewable purchase obligation is applicable on the consumption of energy, it has no linkage with the generation of energy by CGP. If such conditions are imposed for Captive power producers, then it will affect the principle of natural justice. Considering the above, it is requested that the proposed draft may be

modified and the extract from Regulations 4(2) of limiting the RPO of the Captive power producers may be deleted.

Commission's views:

8.5 Commission vide its Sixth Amendment in the RERC (REO) Regulations 2007 incorporated the provision of capping on RPO as per the clarification on orders related to Renewable Purchase Obligation issued by the Ministry of Power on 01.02.2019 and subsequently on 1.10.2019. This provision is applicable to the CPPs set up before coming into force of these Regulations. The new CPPs to be set up after coming into force of the present Regulations, the year-wise RPO targets in proposed these Regulations shall be applicable. The Commission, therefore, considers it appropriate to continue with the provision already in force in the proposed regulations also. In view of the above, no change is required on this account.

8.6 In order to bring more clarity and to make it consistent with the earlier Regulations a provision that RPO shall be applicable on electricity drawn from the CPP and through Open Access, has been appropriately incorporated.

9. Energy Storage Obligation (ESO):

Commission's Proposal:

9.1 Commission in the draft Regulations proposed as under: -

“(3) Energy Storage Obligation (ESO):

For the Distribution Licensee including the deemed licensee the following percentage of total energy consumed shall be solar/wind energy along with/through storage:

| S.No. | FY | Storage (on Energy basis) |
|--------------|-----------|----------------------------------|
| 1 | 2024-25 | 1.5% |
| 2 | 2025-26 | 2.0% |
| 3 | 2026-27 | 2.5% |
| 4 | 2027-28 | 3.0% |
| 5 | 2028-29 | 3.5% |
| 6 | 2029-30 | 4.0% |

Provided that Energy Storage Obligation shall be calculated in energy terms as a percentage of total consumption of electricity and shall be treated as fulfilled only when at least 85% of total energy stored in the Energy Storage System (ESS), on an annual basis, is procured from renewable energy sources.

Provided further that the Energy Storage Obligation to the extent of energy stored from RE source shall be considered as a part of fulfilment of total RPO.

Provided also that the Energy Storage Obligation shall be reviewed periodically, through a separate order, considering the commissioning/operation of PSP capacity, to accommodate any new promising commercially viable Energy Storage technologies and also change in cost of Battery Energy Storage System (BESS).

Comments received:

9.2 One of the stakeholders submitted that RE storage needs to be stressed more than the 4% target in FY 2029-30. The Commission may consider a modest target (as per MOP's order F.No.09/13/2021-RM dated 22.07.2022 and its corrigendum dated 19.09.22) for initial 2-3 years (say up to FY 2025-26) and thereafter, it should be increased at a higher rate of 2 to 3 times of 0.5% per year. Further, the Tariff Regulations may be amended for not levying transmission and wheeling charges on part of the contracted capacity of a solar power plant which is utilized for the RE storage facility established near it. It is suggested that even if the RPO trajectory is considered as per MOP's order from FY 2024-25 (as proposed in the draft), RE storage RPO should be specified from FY 2023-24.

9.3 Another suggestion received is that there is potential in the State for cheaper solar generation and to give the benefit of reduced tariff to the State consumers, storage should be increased from the present level by 1% for FY 2023-24 and further increase by 2.5% in FY 25 to 5% in FY 30.

9.4 One of the stakeholders submitted that minimum Storage from RE sources proposed as 85%, may be reduced to 80%, since in Rajasthan, during Off-Peak hours (at Night), thermal energy is surplus, which can be utilised for storage at low cost. Another suggestion of reducing it to 75% was also received.

9.5 Stakeholder also submitted that less share of hydro generation in the Rajasthan power mix limits its scope to balance demand and supply and therefore, some form of energy storage would be needed at a scale which is

critical in reliably integrating a large share of renewables in the total energy mix. It is rightly focussed through Rajasthan Wind and Hybrid Energy Policy 2019 and a recent proposal to include SPO and provision of periodic review of SPO. However, SPO could be subjected to detailed modelling studies and could be finalised in 6-12 months. Meanwhile, the tenders floated by RUVNL for 1.5 GW of wind-solar with a mandate for storage of 1 MW/4 MWh for each MW of contracted RE can be studied to understand the importance and implications of such projects on grid management and operations.

Commission's views:

9.6 Suggestion has been received that Commission should specify initially the modest targets for 2-3 years thereafter these should be at an increased rate. It is also suggested that even if the RPO trajectory is to be adopted as MoP, storage RPO should be specified from FY 2023-24.

9.7 Some stakeholders requested to increase Storage Purchase Obligation. It is also suggested by some stakeholders that minimum Storage from RE sources may be reduced from the proposed 85% so that surplus thermal energy during Off-Peak hours (in Night) can be utilised for storage at a lower cost.

9.8 Commission has adopted the trajectory prescribed by MoP. To recommend the RPO trajectory beyond 2021-22, a Joint –Committee under the Co-chairmanship of Secretary, Ministry of Power and the Secretary, Ministry of New and Renewable Energy was constituted on 17.12.2020. Based on recommendations of the Joint Committee and further discussion with MNRE, MoP has prescribed the trajectory. Further, the Commission has already specified the RPO targets up to FY 2023-24 and Commission in the draft proposed RPO targets has also proposed the Storage Purchase Obligation w.e.f., FY 2024-25 to FY 2029-30 considering the critical need of storage for higher RE integrations and preparedness required. In our view, no change is required in the draft Regulations on this account.

10. RPO Compliance & Other issues:

Commission's Proposal:

10.1 Commission in the draft Regulations proposed as under: -

"5. Compliance of RPO

Compliance of RPO target including penalty for non-compliance thereof shall be governed by the provisions of the Electricity Act, 2003 and the Regulations made by the Commission in this regard i.e., RERC (Renewable Energy Certificate and Renewable Purchase Obligation Compliance Framework) Regulations, 2010 as amended from time to time."

Comments received:

10.2 Stakeholders submitted that wind RPO compliance be made stringent such that wind RPO is met with wind energy only and any shortfall in wind RPO compliance can be met only by the purchase of Wind REC certificates and if not met then the obligated entity should be penalized. Further, the Discoms be directed to make a road map for achieving the RPO targets and Commission should monitor the RPO compliance of the Discoms quarterly and make data available on the public platform for transparency.

10.3 It is also suggested by one of the stakeholders that for the proper monitoring and streamlining of RPO compliance by obligated entities, for public reporting of RPO compliance data, a section on RPO compliance be created on the website of the Commission and the Nodal agency. A realistic time for data reporting and compliance proceedings along with a penalty in case of delay in data submission by obligated entities may be incorporated into the Regulations. Data reporting formats may be finalized and be included in the Regulations.

10.4 It is further submitted that the State Policies and present RE tenders indicate that a lot of RE capacity can be added in the state by 2030. However, to reliably integrate such high shares of RE, the RERC should direct Discoms to undertake detailed capacity expansion and production cost/dispatch simulations for Rajasthan, which will indicate the value of

resources to maintain system reliability. The importance of such IRP studies has been furthered with recently finalised Electricity (Amendment) Rules which provide for Regulations on resource adequacy by State regulators and provision for Discoms to submit their plans to the regulators.

10.5 It is further suggested that considering the present backlog of RPO compliance by DISCOMs, there is a need to incorporate sufficient penal provisions in the Regulations to continue Rajasthan RE leadership status in the country. In this regard, they have suggested that Commission may adopt a similar approach adopted by MERC in its RPO-REC Regulations of 2019 which read as under:

“12.3 Provided that Distribution Licensee shall be subjected to reduction in Annual Revenue Requirement at a rate of Rs 0.10 per kWh for cumulative shortfall in total RE procurement target for each year;.....”

On similar lines, MERC has devised an incentive mechanism for the over-achievement of RPO targets. The relevant provision is as follows:

“12.2 Distribution Licensee shall endeavour to achieve total RPO target notified by the Central Government and for doing so it will get incentive of Rs 0.25 per kWh for RE procured above the minimum percentage specified in Regulation 7 upto percentage notified by the Central Government as under or as may be notified from time to time.....”

Similarly, RERC can propose an incentive of Rs 0.25/kWh for over-achievement of RPO, subject to all past fulfilment of the obligation and only if the RPO target is in line with the MoP trajectory or if RPO achievement is over and above the MoP trajectory.

10.6 It is also suggested by the stakeholder that with the purchase of RE power along with its green attributes allowed in Green Term Ahead Market (GTAM) and Green Day Ahead Market (GDAM), the option of RPO compliance through the power exchange route may be included in the Regulations.

10.7 Comments also received that as per GEOA Rules 2022, the obligated entity can also meet its RPO by purchasing green hydrogen or green

ammonia, provision for the same may be incorporated through a proviso in Reg. 4(1) and 4(2).

10.8 One Stakeholder also commented that for the "Ease of doing business" the Commission should merge all the existing regulations issued by the Commission be combined in one notification. A similar suggestion was also received from another stakeholder that all the provisions related to the RPO framework may be consolidated in one regulation.

Commission's views:

10.9 It is observed that various suggestions have been received that RPO compliance be made more stringent, and it is also suggested that sufficient penal provisions be incorporated into the Regulations. It is also suggested that a mechanism of penal charges for shortfall and incentive for an over-achievement of RPO targets may be incorporated for the obligated entities in the draft Regulations.

10.10 In this regard, the Commission is of the view that there are separate Regulations which adequately deal with issues related to RPO compliance and the consequence of default in compliance. Therefore, no change is required in the draft Regulations on this account.

10.11 As regards the suggestion of including the purchase of RE through GTAM and GDAM for counting towards the fulfilment of RPO, it is observed that both these modes are also covered under broad RE Purchase and thus, RE purchased through these modes will also be eligible for the fulfilment of RPO. Therefore, no change is required on this account.

10.12 As regards the suggestion of incorporating the provision of purchase of green hydrogen or green ammonia for meeting RPO, it is stated that in case RE is utilised to produce the Hydrogen/Ammonia then it qualifies for the fulfilment of RPO by such entity. In case an entity uses Green Hydrogen/Green Ammonia, then it may have to furnish the details regarding RE consumed in the process of green hydrogen/green ammonia to the State Agency which will verify the claim for consideration of such consumption

towards RPO fulfilment. Hence, there is no necessity to incorporate a separate provision in the draft Regulations for this purpose.

10.13 One of the stakeholders has suggested that Discoms be directed to make a road map for achieving the RPO targets and Commission should monitor the RPO compliance of the Discoms quarterly and make data available on the public platform for transparency. As regards this suggestion of monitoring, it is clarified that separate Regulations are in place to adequately deal with RPO monitoring and the consequences of the default. These Regulations, among other things, have a provision for filing of a petition by the State Agency in the cases of default and thereafter, Commission passes an appropriate order in the matter. Therefore, there is no requirement for any change in the draft Regulations on this account.

10.14 Another stakeholder commented that Discoms be directed to undertake the detailed capacity expansion and production cost/dispatch simulations for Rajasthan, which will indicate the value of resources to maintain system reliability for which they suggested for regulations on Integrated Resource Planning (IRP) mandated under the Electricity (Amendment) Rules. In this regard, it is stated that Commission has specified the RERC (Power Purchase & Procurement Process of the Distribution Licensee) Regulations, 2004 and amendments thereto specifying the power procurement of the Distribution Licensees. The Commission is of the view that it is the duty of the Discoms to carry out necessary planning for procurement of the RE in advance for the fulfilment of RPO targets specified by the Commission from time to time. Further, the IRP studies and specifying Regulations on IRP fall outside the scope of the present Regulations. Therefore, the suggestion in this regard is not acceptable.

10.15 As regards the suggestion of merging/consolidating the Regulations, the Commission is of the view each set of Regulations deals with different regulatory aspects and merging/consolidating them would not be appropriate. Therefore, this suggestion is not acceptable.

11. Before parting with this memo, the Commission would like to note that the Rajasthan has very high potential for RE and Discoms should buy maximum power available within the State so as to reap benefit for cost effectiveness and scalability. The procurement by Discoms for RPO should be through competitive bidding in accordance with guidelines issued by Gol under Section 63 of the Electricity Act, 2003 and where such guidelines have not been issued, Discoms will prepare the bidding guidelines and submit to the Commission for approval of the same. Discoms may initiate the action for procurement of RE up to the RPO through bidding guidelines issued by Gol, or bidding guidelines approved by the Commission under intimation to the Commission, without any prior approval for the same and Discoms may directly file a petition for adoption of tariff under Section 63 of the Electricity Act, 2003.

12. In the light of the foregoing discussions, the finalized Regulations duly authenticated, placed below, may be got published in the Official Gazette.

13. Copy of this memo, along with the finalized Regulations, may be sent electronically and/or by post to the State Government, CEA, concerned Utilities and other stakeholders.

(Dr. Rajesh Sharma)
Member

(Hemant Kumar Jain)
Member

(Dr. B. N. Sharma)
Chairman

Annexure-I

| S.No. | Particulars |
|--------------|---|
| 1. | Rajasthan Biomass Power Developers Association('RBPDA') |
| 2. | Sh. Shanti Prasad, Individual |
| 3. | Sh. D.S. Agrawal, Individual |
| 4. | M/s Indian Wind Energy Association ('InWEA') |
| 5. | Sh.D.S. Agarwal, Samta Power |
| 6. | M/s Suryaa Chambal Pvt. Limited. |
| 7. | M/s SAEL Ltd. |
| 8. | M/s Indian Wind Turbine Manufactures Association ('IWTMA'). |
| 9. | M/s Rajasthan Renewable Energy Corporation Ltd('RREC'). |
| 10. | M/s Rajasthan Urja Vikas Nigam Ltd, ('RUVNL'). |
| 11. | M/s ReNew Power Pvt Ltd. |
| 12. | M/s Naman Renewable Energy Pvt Ltd. |
| 13. | M/s O ₂ Power |
| 14. | M/s Prayas (Energy Group), Pune. |

Annexure-II

| S.No. | Particulars |
|--------------|---|
| 1. | Sh.Amitabh Tandon, RBPDA |
| 2. | Sh.D.S.Agarwal |
| 3. | Sh.D.D.Agarwal for Samata Power |
| 4. | Ms. Susan Mathew, Advocate for Suryaa Chambal Power Ltd |
| 5. | Sh.Ashok Rao,RRECL |
| 6. | Sh.Rajendra Meena,XeN, RUVNL |
| 7. | Sh.Samarjit Sahoo,ReNew Power Pvt. Ltd. |
| 8. | Sh.Alok Gupta,Advocate for Naman Renewable Energy Pvt. Ltd. |
| 9. | Sh. Manish Singh,InWEA |

RAJASTHAN ELECTRICITY REGULATORY COMMISSION, JAIPUR

NOTIFICATION

June, xx 2023

No. RERC/Secy/Reg/ XXXX

In exercise of the powers conferred by section 86(1) (e) read with section 181 of the Electricity Act, 2003 (Act 36 of 2003) after previous publication, the Rajasthan Electricity Regulatory Commission makes the following Regulations, namely:

1. Short title and commencement:

- (i) These regulations will be called the Rajasthan Electricity Regulatory Commission (Renewable Purchase Obligation) Regulations, 2023 and shall come into force from 01.04.2024 after their publication in the Official Gazette.
- (ii) For the period prior to 01.04.2024, the Renewable Energy Obligation as specified in RERC (Renewable Energy Obligation) Regulation, 2007 & other relevant Regulations as amended from time to time, shall remain applicable.

2. Definitions:

In these regulations unless the context otherwise requires;

- i. "Act" means the Electricity Act, 2003 (36 of 2003), including amendments thereto;
- ii. "Commission" means the Rajasthan Electricity Regulatory Commission;
- iii. Captive power plants or "CPP" shall have the same meaning as assigned in RERC (CPP) Regulations 2010 as amended from time to time.
- iv. Renewable Energy or "RE" is the energy generated from the Renewable Energy Sources ;
- v. "Renewable Energy Sources" means renewable source of energy such as water, wind, sunlight, biomass, bagasse, municipal solid waste and other such sources as approved by the MNRE from time to time and shall include cogeneration ;
- vi. All other words & expressions appearing in these regulations and not defined in these Regulations shall bear the same meaning assigned to them in the following order:
 - (a) RERC (Terms and Conditions for Determination of Tariff from Renewable Energy Sources) Regulations, 2020 as amended from time to time

- (b) The RERC (CPP) Regulations, 2010 as amended from time to time.
- (c) The Rajasthan Electricity Regulatory Commission (Terms and Conditions for Open Access) Regulations, 2016 as amended from time to time.
- (d) RERC (Renewable Energy Certificate and Renewable Purchase Obligation Compliance Framework) Regulations, 2010 as amended from time to time.
- (e) The Electricity Act, 2003 and as amended time to time.

3. Applicability:

These Regulations will be applicable to the following -

- i. Distribution licensee including deemed licensee;
- ii. Open Access (OA) consumer;
- iii. Captive Power Plant (CPP) of installed capacity 1 MW and above.

4. The minimum Renewable Purchase Obligations for the obligated entities shall be as under:

(1) Distribution Licensee including deemed licensee:

| S.No. | Year | Wind RPO | HPO | Other RPO | Total RPO |
|-------|---------|----------|-------|-----------|-----------|
| 1 | 2024-25 | 2.46% | 1.08% | 26.37% | 29.91% |
| 2 | 2025-26 | 3.36% | 1.48% | 28.17% | 33.01% |
| 3 | 2026-27 | 4.29% | 1.80% | 29.86% | 35.95% |
| 4 | 2027-28 | 5.23% | 2.15% | 31.43% | 38.81% |
| 5 | 2028-29 | 6.16% | 2.51% | 32.69% | 41.36% |
| 6 | 2029-30 | 6.94% | 2.82% | 33.57% | 43.33% |

Provided that Wind RPO Shall be met by energy produced from Wind Power Projects (WPPs) commissioned after 31.03.2022 and the wind energy consumed over and above 7% from WPPs commissioned till 31.03.2022. Hydro power Purchase Obligation (HPO) shall be met only by energy produced from Hydro Power Projects (Including PSPs and Small Hydro Pumps (SHPs)), commissioned after 8th March 2019. Other RPO may be met by energy produced from any RE based /green energy based power project not mentioned in Wind RPO and HPO.

Provided further that from FY 2024-25 onwards, the energy from all Hydro Power Projects (HPPs) will be considered as part of RPO. The HPO trajectory, as per above table will continue to prevail for LHPs commissioned after 8th March 2019. Energy from all other HPPs including free power from HPPs commissioned before 08.03.2019 will be considered as part of 'RPO' under category of 'other RPO'.

Provided also that RPO shall be calculated in energy terms as a percentage of

total consumption of electricity.

Provided also that HPO obligation of the State/Discom could be met out of the free power being provided to the State from Hydro Power Projects (Including PSPs and Small Hydro Pumps (SHPs)), commissioned after 08.03.2019 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.

Provided also that in case the free power mentioned above is insufficient to meet the HPO obligations, then the obligated entity would have to buy the additional hydro power to meet its HPO obligation or may have to buy corresponding amount of Renewable Energy Certificate corresponding to Hydro Power.

Provided also that the Renewable Energy Certificate mechanism corresponding to Hydro Power/Other RE Power to facilitate compliance of HPO/Other RE Power obligation shall be in accordance with mechanism specified by Central Electricity Regulatory Commission (CERC).

Provided also that the HPO trajectory shall be trued up on an annual basis depending on the revised commissioning schedule of Hydro projects.

Provided also that in case of 'Other RPO', any shortfall remaining in achievement of 'Other RPO' category in a particular year can be met with either excess energy consumed from wind power projects, commissioned after 31st March 2022 beyond 'Wind RPO' for that year or with, excess energy consumed from eligible Hydro Power Projects (Including PSPs and Small Hydro Pumps (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 consumed from Hydro Power Plants, which is in excess of 'HPO' for that year and vice versa.

Provided also that hydro power imported from outside India shall not be considered for meeting HPO.

(2) CPP & OA Consumers with 1 MW and above:

The RPO for the CPP & OA Consumers with 1 MW and above shall be as under:-

| S.No. | Year | Total RPO |
|-------|---------|-----------|
| 1 | 2024-25 | 29.91% |
| 2 | 2025-26 | 33.01% |
| 3 | 2026-27 | 35.95% |
| 4 | 2027-28 | 38.81% |
| 5 | 2028-29 | 41.36% |

| | | |
|---|---------|--------|
| 6 | 2029-30 | 43.33% |
|---|---------|--------|

Provided that for CPPs commissioned before 1.04.2016, RPO shall be at the level as mandated by the Commission for the year 2015- 16. For CPPs commissioned from 1.04.2016 onwards, the RPO level as mandated by the Commission for the year of commissioning of the CPP shall be applicable.

Provided further that in case of any augmentation in the capacity, the RPO for augmented capacity shall be the RPO applicable for the year in which the CPP has been augmented.

Provided also that in case, for meeting the RPO obligation, CPP has surplus power than its consumption requirement, such a CPP may sell its surplus power to the DISCOMs under the prevailing arrangements, if any, or in the power exchange.

(3) Energy Storage Obligation (ESO):

For the Distribution Licensee including the deemed licensee the following percentage of total energy consumed shall be solar/wind energy along with/through storage:

| S.No. | FY | Storage (on Energy basis) |
|-------|---------|---------------------------|
| 1 | 2024-25 | 1.5% |
| 2 | 2025-26 | 2.0% |
| 3 | 2026-27 | 2.5% |
| 4 | 2027-28 | 3.0% |
| 5 | 2028-29 | 3.5% |
| 6 | 2029-30 | 4.0% |

Provided that Energy Storage Obligation shall be calculated in energy terms as a percentage of total consumption of electricity and shall be treated as fulfilled only when at least 85% of total energy stored in the Energy Storage System (ESS), on an annual basis, is procured from renewable energy sources.

Provided further that the Energy Storage Obligation to the extent of energy stored from RE source shall be considered as a part of fulfilment of total RPO.

Provided also that the Energy Storage Obligation shall be reviewed periodically, through a separate order, considering the commissioning/ operation of PSP capacity, to accommodate any new promising commercially viable Energy Storage technologies and also change in cost of Battery Energy Storage System (BESS).

5. Compliance of RPO

Compliance of RPO target including penalty for non-compliance thereof shall be governed by the provisions of the Electricity Act , 2003 and the Regulations made by the Commission in this regard i.e. RERC (Renewable Energy Certificate and Renewable Purchase Obligation Compliance Framework) Regulations, 2010 as amended from time to time.

6. Power to remove difficulties:

If any difficulty arises in giving effect to the provisions of these Regulations, the Commission may either suo-motu or on a petition, by general or specific order, make such provisions not inconsistent with the provisions of the Act as may appear to be necessary for removing the difficulty.

7. Power to Relaxation:

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

8. Power to amend:

The Commission may, at any time, vary, alter, modify or amend any provisions of these Regulations.

By Order of the Commission

Secretary