

RAJASTHAN ELECTRICITY REGULATORY COMMISSION, JAIPUR

In the matter of:

The RERC (Renewable Energy Obligation) (Seventh Amendment) Regulations, 2021.

- Coram:** 1. Dr. B.N.Sharma, Chairman.
2. Shri S. C. Dinkar, Member.
3. Shri Prithvi Raj, Member.

Date of hearing: 26.10.2021 (though Video Conferencing)

Date of Order: 14.12.2021

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

1. The Rajasthan Electricity Regulatory Commission (RERC or Commission), in exercise of powers conferred under Section 181, read with Sections 61, 66, 86(1)(e) of the Electricity Act, 2003 (Act 36 of 2003) and all other provisions enabling it in this behalf, framed the following Draft Regulations:

"Rajasthan Electricity Regulatory Commission (Renewable Energy Obligation) (Seventh Amendment) Regulations, 2021"

2. The Commission placed these Draft Regulations and the Explanatory Memorandum and Public Notice on the Commission's website for inviting public comments. Commission also invited from the stakeholders through Public Notice published in the following newspapers, on the date indicated against each:

(1) Dainik Bhaskar	:	02.09.2021
(2) Rajasthan Patrika	:	02.09.2021
(3) The Times of India	:	02.09.2021

3. The last date for submission of the comments/suggestions by the stakeholders/public was 23.09.2021. The list of seven (07) numbers of 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. Hearing in the matter was conducted through Video Conferencing on dated 26.10.2021.
5. The comments and views expressed by the stakeholders through their submissions in written form and made during the hearing and the Commission's views/Decision thereon have been summarized in the following paragraphs.
6. It may be noted that all the comments/suggestions given by the stakeholders have been considered. The Commission has attempted to elaborate all the comments/suggestions and the Commission's views/decisions on each suggestion in the Statement of Reasons. However, in case any comment/suggestion is not specifically elaborated, it does not mean that the same has not been considered.
7. The comments/suggestions have been grouped depending upon the nature and relevance. Further, Syntax/phrase/addition of word(s)/rewording related changes have been suitably incorporated, wherever necessary.

Commission's Proposal:

8. Commission in the draft Regulations proposed the Amendments in Regulation 4 of the RERC (Renewable Energy Obligation) Regulations,2007 ('Principal Regulations') as under:

"Amendment in Regulation 4 of the Principal Regulations:

- (1) The entries at s.no. 4, 5 & 6 for the FY 2021-22,2022-23 & 2023-24 shall be substituted in the existing table appearing under the heading (A) of sub-regulation (2):

S.No.	Year	Obligation expressed as percentage of energy consumption (%) excluding consumption met from hydro sources of power.		
		Non-solar	Solar	Total
4	2021-22	9.98%	8.50%	18.48%
5	2022-23	10.45%	9.50%	19.95%
6	2023-24	11.16%	10.50%	21.66%

Further, the following proviso shall also be added:

"Provided that:

- a) 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 upto 31.03.2030 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.

- b) HPO liability of the State/Discom could be met out of the free power being provided to the State from LHPs 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/Discoms. Free power (not that contributed for Local Area Development) only to the extent of HPO liability of the State/Discom shall be eligible for HPO benefit.
- c) Hydro power imported from outside India shall not be considered for meeting HPO.
- d) On achievement of Solar RPO compliance to the extent of 80% and above, remaining shortfall, if any, can be met by excess non-solar energy consumed beyond specified Non-Solar RPO for that particular year. Similarly, on achievement of other Non-Solar RPO compliance to the extent of 80% and above, remaining shortfall if any, can be met by excess solar or eligible hydro energy consumed beyond specified Solar RPO or HPO for that particular year. Further, on achievement of HPO compliance to the extent of 80% and above, remaining shortfall, if any, can be met by excess solar or other non- solar energy consumed beyond specified Solar RPO or Other Non-Solar RPO for that particular year."

(2) The entries at s.no. 4, 5 & 6 for the FY 2021-22,2022-23 & 2023-24 shall be substituted in the existing table appearing under the heading (B) of sub-regulation (2):

S.No.	Year	Obligation expressed as percentage of energy consumption (%) excluding consumption met from hydro sources of power
4	2021-22	18.48%
5	2022-23	19.95%
6	2023-24	21.66%

Further the following proviso shall also be added:

"Provided that:

- a) 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 upto 31.03.2030 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.
- b) HPO liability of the State/Discom could be met out of the free power being provided to the State from LHPs 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. Free power (not that contributed for Local Area Development) only to the extent of HPO liability of the State/Discom shall be eligible for HPO benefit.
- c) Hydro power imported from outside India shall not be considered for meeting HPO.
- d) On achievement of Solar RPO compliance to the extent of 80% and

above, remaining shortfall, if any, can be met by excess non-solar energy consumed beyond specified Non-Solar RPO for that particular year. Similarly, on achievement of other Non-Solar RPO compliance to the extent of 80% and above, remaining shortfall if any, can be met by excess solar or eligible hydro energy consumed beyond specified Solar RPO or HPO for that particular year. Further, on achievement of HPO compliance to the extent of 80% and above, remaining shortfall, if any, can be met by excess solar or other non- solar energy consumed beyond specified Solar RPO or Other Non-Solar RPO for that particular year."

- (3) The entries at s.no. 4,5 & 6 for the Year 2021-22,2022-23 & 2023-24 of the existing table under sub-regulation (3) shall be substituted as under:

Further, the following proviso shall also be added:

S.No.	Year	Obligation expressed as percentage of energy consumption (%) excluding consumption met from hydro sources of power.				
		Non-solar			Solar	Total
		Wind	Biomass	HPO		
4	2021-22	8.90%	0.90%	0.18%	8.50%	18.48%
5	2022-23	9.10%	1.00%	0.35%	9.50%	19.95%
6	2023-24	9.40%	1.10%	0.66%	10.50%	21.66%

"Provided 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 upto 31.03.2030 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.
- HPO liability of the State/Discom could be met out of the free power being provided to the State from LHPs 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) only to the extent of HPO liability of the State/Discom shall be eligible for HPO benefit.
- Hydro power imported from outside India shall not be considered for meeting HPO.
- On achievement of Solar RPO compliance to the extent of 80% and above, remaining shortfall, if any, can be met by excess non-solar energy consumed beyond specified Non-Solar RPO for that particular year. Similarly, on achievement of other Non-Solar RPO compliance to the extent of 80% and above, remaining shortfall if any, can be met by excess solar or eligible hydro energy consumed beyond specified Solar RPO or HPO for that particular year. Further, on achievement of HPO compliance to the extent of 80% and above, remaining shortfall, if any, can be met by excess solar or other non- solar energy consumed beyond specified Solar RPO or Other Non-Solar RPO for that particular year."

Addition/Amendment in the Definitions:

Stakeholders' Comments/Suggestions:

9. Greenko Energies Private Limited (in short, 'Greenko') submitted as under:
- 9.1 National Wind-Solar Hybrid Policy 14.05.2018 encourages RE Sources to be coupled with storage technologies for optimal and efficient transmission infrastructure and land utilisation, reducing variability in RE power generation and achieving better grid stability. Therefore, it is proposed to include the definition of Hybrid sources in the Regulations as under:

"Hybrid Sources" A hybrid energy sources means two or more Renewable Energy Sources used together or any single Renewable Energy Source coupled with any Storage Technologies (Battery, Pumped storage etc.) to provide increased system efficiency as well as greater balance in energy supply."

- 9.2 Central Government on 8.03.2019 has issued the Office Memorandum (OM) dealing various policy measures to promote hydropower sector in India inter-alia declaring large hydropower projects including pumped storage projects having capacity of more than 25 MW(LHPs) which come into commercial operation after 08.03.2019 as renewable energy source and to specify Hydro Purchase Obligation (HPO) within Non-Solar Renewable Purchase Obligation (RPO). The existing definition of the Renewable Energy Sources reads as under:

"Renewable energy sources" means and includes non-conventional renewable generation sources such as mini-hydel, wind, solar including solar component of its integration with combined cycle, bio-mass, bio-fuel co-generation, urban or municipal waste and other such sources approved by MNRE, excluding the nuclear power stations and hydel power stations of capacity above 25 MW".

It is requested to amend the definition of Renewable Energy Sources as under:

"Renewable energy sources" means and includes non-conventional renewable generation sources such as mini-hydel, Large Hydro (>25 MW commissioned on or after 8.03.2019 including Pumped storage projects, Wind, Solar including its integration with combined cycle, bio-mass, bio-fuel co-generation, urban or municipal waste and other such sources as recognized or approved by MNRE/MOP."

- 9.3 Ministry of New and Renewable Energy ('MNRE') on 06.11.2019 has issued the Office Memorandum clarifying that RPO contribution of Obligated Entities consuming energy from hybrid wind-solar power plant shall be based on the relative proportion of energy contributed by each source, calculated based on the ratio of declared capacities of each source in the Power Purchase Agreement ('PPA'). Accordingly, it is requested that the following proviso may be inserted under the heading (A) of sub-regulations (2), heading (B) of sub-regulation (2) and sub-regulation (3):

"Provided further that in case of power procured from Hybrid Sources the renewable energy generated to be considered for Solar RPO, Non-Solar RPO and HPO shall be based on the relative proportion of energy contributed by each source, calculated based on the ratio of declared capacities of each source in the Power Purchase (Sale) Agreement."

10. Indian Energy Exchange (in short, 'IEX') has submitted that the definition of 'Renewable Energy Sources' given in the existing regulations excludes hydel power stations of capacity above 25 MW and requested to revise the definition to include the large hydropower plants of capacity above 25 MW also.
11. Dr. Anoop Singh, on behalf of the Centre for Energy and Research ('CER') & Energy Analytics Lab ('EAL'), submitted that Section 86 (1)(e) of Electricity Act 2003 provides for Commission to *promote co-generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee*. This Section empowers the SERCs to specify the purchase of electricity from renewable energy sources. It is noted that the RPO in the draft regulations defines the same w.r.t the consumption of electricity excluding those from HPO, as such, it does not seem to be in line with the above provisions of the Act.

Commission's Views/Decision:

12. Commission has received suggestions to incorporate new definition of Hybrid sources, and some stakeholders have requested to revise/amend the existing definition of Renewable Energy Sources.
13. As regards incorporating the definition of the hybrid sources, it is stated that the Hybrid sources have already been defined in the RERC (Terms and Conditions for determination of tariff from Renewable Energy Sources) Regulations,2020 (hereinafter referred to as the 'RERC RE Tariff Regulations 2020') as under:

"2.1 (dd) "Renewable Hybrid Energy Project" means a renewable energy project that produces electricity from a combination of renewable energy sources having a single point of injection or maximum two points of injection into the grid;"

The regulation 80.1 of the said Regulations further provides as under:

"80.1 The Commission shall determine only project specific capacity utilisation factor in respect of renewable hybrid energy projects taking into consideration the proportion of rated capacity of each renewable energy source, as the case may be, and applicable capacity utilisation factor for such renewable energy source, as the case may be:"

It is observed that Renewable Hybrid Sources are already defined under the RERC RE Tariff Regulations,2020 and further, in the aforesaid Regulations a provision for project specific tariff determination for the renewable energy hybrid has also been made. However, a suggestion has been received regarding the consideration of renewable energy generated from Hybrid Sources for Solar RPO, Non-Solar RPO and HPO. In this regard Commission is of the view that scope of the present order is limited to specifying the HPO, and a view regarding the above aspect may taken through a separate order.

14. Stakeholders have also pointed out that the definition of Renewable Energy Sources given in the existing regulations excludes hydel power stations of capacity above 25 MW. Thus, contradictory to the proposed draft regulations. One of the stakeholders have also proposed the revised definition of Renewable Energy Sources in view of the MoP OM dated 29.01.2021 declaring large hydro projects including pumped storage projects

having a capacity more than 25 MW with COD after 08.03.2019, as a renewable energy source. It is observed that RERC (Renewable Energy Obligation) Regulations, 2007 (hereinafter referred to as the 'RERC REO Regulations 2007') provide that Renewable Energy or "RE" is the energy generated from the Renewable Energy Sources defined in the RERC (Renewable Energy Certificate and Renewable Purchase Obligation Compliance Framework) Regulations, 2010 as amended from time to time (hereinafter referred to as the 'RERC RPO framework Regulations 2010') and shall include cogeneration. The RERC RPO framework Regulations 2010 define Renewable Energy Sources as under:

"Renewable energy sources" means and includes non-conventional renewable generation sources such as mini-hydel, wind, solar including solar component of its integration with combined cycle, bio-mass, bio-fuel cogeneration, urban or municipal waste and other such sources as approved by MNRE, excluding the nuclear power stations and hydel power stations of capacity above 25 MW.

15. It is also observed that CERC RE Tariff Regulations define the Renewable Energy Sources as under:

"2 (1)(y) 'Renewable energy source' means renewable source of energy such as water, wind, sunlight, biomass, bagasse, municipal solid waste and other such sources as approved by the MNRE;"

Considering the above, Commission has defined the 'Renewable Energy Sources' in the latest notified RERC RE Tariff Regulations 2020 as under:

"2.1 (bb) "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.,"

16. The definition of Renewable Energy Sources included in CERC, and RERC RE Tariff Regulations is observed to have broad coverage. In view of the above position, for the sake of homogeneity and consistency across the Regulations, it would be appropriate that the definition of the Renewable Energy Sources may be amended and may be incorporated at regulation 2(1)II of the RERC REO Regulations 2007, accordingly as under:

"II. Renewable Energy" or "RE" is the energy generated from the Renewable Energy Sources defined in RERC (Terms and Conditions for Determination of Tariff from Renewable Energy Sources) Regulations, 2020 as amended from time to time and shall include cogeneration."

17. One of the stakeholders has also pointed out that Section 86(1)(e) of the Electricity Act 2003 empowers the SERCs to specify the purchase of electricity from renewable energy sources. However, the draft Regulations, define the same w.r.t the consumption of electricity excluding those from HPO, not in line with the above provisions of the Electricity Act,2003. In this respect, it is stated that going through the preamble and Section 86(1)(e) of the Act, it is observed that the primary objective of the Act is to promote clean energy sources such as renewable energy sources. Hydro sources, like RE sources, are clean sources and need to be promoted. Govt in the Tariff Policy recognizing the same, therefore, excluded the consumption met from hydro from the total consumption. In continuance to above for RPO, Commission has already specified the 'consumption' as 'excluding the hydro power' in accordance with earlier MoP notifications/orders in the extant Regulations. In continuation to its notification dated 29.01.2021 regarding Renewable Purchase Obligation and Hydro Power Obligation trajectory, MoP vide order dated 1.04.2021 has issued the amendment stating that Para 7 of the Ministry's Order dated 29.01.21 may be read as under:

"7. RPO shall be calculated in energy terms as a percentage of total consumption of electricity excluding consumption met from hydro sources."

18. In view of the practice followed earlier and clarification issued by the above MoP order dated 1.04.2021, the Commission, in the draft Amendments, has proposed RPO w.r.t consumption of electricity excluding consumption met from hydro sources. Commission considers it appropriate to continue with the same in the final Regulations, and no change is required in the draft Regulations on this account.

RPO Trajectory:

Stakeholders' Comments/Suggestions:

19. Greenko submitted as under:
- 19.1 The trajectory specified by the Ministry of Power (MoP) for Solar RPO and Non-Solar RPO trajectory (excluding Hydro Purchase Obligation (HPO)) for FY 2021-22 is higher as compared to the trajectory specified in draft RPO

regulation 2021. The trajectory for FY 2021-22, FY 2022-23, and FY 2023-24 may be amended, and it is requested to incorporate the Solar, Non-solar and Hydro Purchase Obligation in line with the MoP order dated 29.01.2021.

19.2 As per Clause no. (3) (d) of draft Regulations, the DISCOMs can comply HPO to the extent of 80% and above, remaining shortfall, if any, can be met by excess Solar or other Non-Solar energy consumed beyond the specified Solar RPO or other Non-Solar RPO, as the case may be, for that particular year. It is pertinent to mention that the hydro tariff and Hydro Energy Certificate ('HEC') price as mentioned in the MoP order is significantly higher than the Solar/ Non- Solar tariff and Solar REC/Non-Solar REC. Accordingly, such flexibility to the DISCOMs to procure power beyond 80% HPO from any other Renewable energy source has to be restricted, as, with such flexibility, none of the DISCOMs will fulfil its 100 % HPO requirement from hydro. Every DISCOM will procure 80 % power from hydro and 20 % from low-cost RE sources. In view of the above, it is requested that the said clause no.4 of the draft Regulations may be amended to enforce the DISCOMs to fulfil their 100% HPO requirement from Large Hydro / HEC only.

20. Sh. Shanti Prasad submitted as under:

20.1 Regulation 4(2)(A) and 4(2)(B) are applicable for CPP, and open access consumers of the total capacity of 10 MW and above and 1 MW and above, but less than 10 MW respectively, where the existing, and the proposed Amendment does not have any HPO requirement. As such, insertions of provisions (a), (b) and (c) under sub-regulation 4(2)(A) is inappropriate and may be deleted. On account of this, in proposed proviso (d) for sub-regulation, words "*or HPO*" and "*further on achievement of HPO..... that particular year*" may be deleted. Similarly, insertions of provisions (a),(b),(c) and (d) of sub-regulation 4(2)(B) may be deleted.

20.2 Hydropower stations have a long gestation period of 5-7 years. For the power stations to be commissioned by FY 2023-24, PPAs have to be executed even before the issue of this draft. It is observed from ARR of JVVNL for FY19-20 that for 1225 MW capacity of NHPC, Bhakra and Chambal hydro projects, energy availability was 4239 MUs (6.85% of the total availability of 61882 MUs). With 5% annual growth, DISCOMs will require

power purchases from additional 147 MW capacity hydro power stations commissioned/to be commissioned during 8.03.2019 to 31.03.2024. Unless the PPAs for this much capacity have already been executed, the specified HPO requirements cannot be met. Details of PPAs executed for hydropower plants commissioned /to be commissioned during 8.3.2019 to 31.3.2024 may be enquired, and then HPO may be specified accordingly.

- 20.3 Para 2(3) of the Draft Amendment Regulations [Reg. 4(3)] proposes HPO requirement of 0.18% to 0.66% from hydro power stations commissioned on and after 08.03.2019 and upto 31.03.2030 in respect of 70% of the total generation capacity for a period of 12 years from COD as per MOP Order No. 23/03/2016-R&R dated 29.01.2021. This order specifies trajectory for HPO upto FY 2029-30, so it specifies it to be met by hydro power stations commissioned upto 31.03.2030. However, the proposed Regulations cover period upto FY 2023-24 so specifying power stations to be commissioned beyond 31.03.2024 and upto 31.03.2030 will be inappropriate. Therefore, the proposed provision may be specified for the hydro power stations to be commissioned upto 31.03.2024 only.
- 20.4 Further, hydropower stations are mainly established by NHPC, and normally power plant capacity of each project is contracted by all States of the Northern region. Thus, a single party (i.e., RUVNL on behalf of Rajasthan DISCOMs) does not contract 70% of capacity. Further, PPAs so executed are long term agreements for the entire life of the projects. On this account, provision "70% of the total generation capacity for a period of 12 years from COD" may be clarified. It suggested that the clarification may be provided as under:

"hydro power capacity contracted will not be less than 70% of power plant capacity with PPA term of not less than 12 years. Further, where number of parties executes PPA for hydro capacity of a power plant, this requirement will be met collectively by all contracting parties."

21. Renew Power Private Limited (in short, 'Renew Power') submitted as under:
- 21.1 The debt repayment period for hydropower projects varied between 15-20 years and it was considered as 18 years in MoP OM dated 08.03.2019. Therefore, the period of 12 years should be increased to at least 18 years. This 18-year period should commence from the date when HPO Regulations

of the States (at least 25 States) are in place, and till such time, already commissioned projects may qualify for HPO as a promotional measure. The projects will continue to be covered under HPO provisions even after 2030 until they achieve 18 years of operations after commissioning.

- 21.2 It is important to note that the inclusion of PSP under RE/Hydro and its eligibility under HPO is dependent on the source of charging. It may be possible that such PSP may utilise conventional power or RE or grid power or a mix of all these sources during the charging process, which will be difficult to trace without any process or mechanism in place by an appropriate agency. In such a scenario, it would not be correct to categorize PSPs under RE sources of generation and, thus, cannot be made eligible to qualify for HPO. It is requested that clause nos. 2(1)(a),3(1)(a),4(1)(a) may be modified as under:

"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 upto 31.03.2030 along with untied capacity of large hydro projects which are commissioned prior to 08.03.2019 in respect of ~~70~~100% of the total generated capacity for a period of ~~12~~ 18 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 100% of the total generated capacity."

- 21.3 Solar RPO, Non-Solar RPO and HPO compliance is supposed to be complied to the full extent by their respective obligated entities only as all technologies are equally important to be developed. If 20% of Solar RPO were complied with by HPO or Non- solar RPO, this would not be fair for the development of Solar technology, and the same is the case with other technologies. It is requested that clause d) "On achievement of Solar RPO compliance.....consumed beyond specified Solar RPO or Other Non-Solar RPO for that particular year" may be deleted.

22. Bask Research Foundation submitted as under:

- 22.1 While RPOs play a key role in creating markets for renewable energy, the business case for integration and adoption of RE also needs to be evaluated. The cost impact for scenarios wherein the adoption of RE beyond RPO limits undertaken needs to be understood. This may aid

accelerated adoption of RE beyond the RPO targets. The Commission may mandate the DISCOMs to undertake necessary studies and modelling to prepare such scenarios to help the evolution of RPO targets in the future.

22.2 Section 2, Clause 1 (a) reads as under:

a) 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 upto 31.03.2030 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.

The term 'Total Generated Capacity' and the statement 'in respect of 70% of the total generated capacity for a period of 12 years from the date of commissioning' requires a clear explanation.

23. Dr. Anoop Singh submitted as under:

23.1 The whole idea of differentiating Solar and Non-solar RPO are economically unjustified; it leads to economically inefficient decisions for investment. The cost of procurement from solar power plants has been declining and is now even less than other Renewable Energy Sources (RES). It would be appropriate to dispense with technology-wise RPO differentiation as solar and non-solar RPO. This would reduce the overall cost of compliance for the obligated entities.

23.2 As per the draft Regulations, the HPO targets have been incorporated in the existing RPO target structure. According to the current practice adopted by the Commission, when more technologies will be incorporated in the pool of RPO, the total RPO target will rise again in the future.

23.3 It is important to emphasize that the HPO targets are an add-on obligation over and above the existing RPO from other Renewable Energy sources. Given that the DISCOMs are obligated to meet the existing level of RPO, it is important that a study may be undertaken to assess Rajasthan Grid's ability to absorb various RPO levels in the future and fix the targets appropriately. To ensure that the target so estimated may be further enhanced by the

Commission to promote the consumption of renewable energy sources in the State of Rajasthan.

- 23.4 There is a lack of scientific basis in the current framework to estimate the target of RPO obligation that is fixed for the obligated entities (DISCOMs, Open Access Consumers and Captive Consumption). Therefore, it is suggested that the determination of the total RPO target should be based on a scientific study, as there is a requirement for techno-economic analysis, binding to an economical limit that comes from the supply curve/ function. Thus, the overall limit should not be based on the number of technologies that are being incorporated. All technologies that might be included in the future could be accommodated by adjusting the others so that the total RPO target should remain the same.
- 23.5 It is important to specify an overall target for RPO and allow the obligated entities to procure renewable energy from alternate technologies based on their relative economics to ensure economic efficiency. Separate categorization and specification of targets for specific technologies add rigidity in the decision making of the DISCOMs and increase the overall cost of the Obligation.
- 23.6 The DISCOMs in Rajasthan already procured hydroelectricity for FY 2019-20, which is over and above the targets proposed in the draft regulation. It is also important to highlight those other obligated entities -Open Access Consumers and Captive Consumers, may not similarly have access to hydropower especially, due to the absence of any market-specific for procurement of hydroelectricity. For example, the market for RECs and GTAM enables the obligated entities to procure renewable power to meet their obligation specifically. The competitive platform like power exchanges (DAM, TAM, etc.) do not offer the choice of source of electricity and hence, will not help these obligated entities, which exclude the DISCOMs, to procure hydroelectricity to meet their obligation, such entities will in-turn have to procure the hydroelectricity through bilateral arrangement or through traders, which may not be as cost-effective as the competitive platform. Furthermore, the absence of any certificate market for hydropower does not enable such entities to procure such certificates to meet their HPO obligation. It is suggested that if HPO is also included as a

qualifying technology for crediting the REC, the same would be available to the obligated entities to meet their obligation in a cost-effective manner.

- 23.7 The DISCOMs in Rajasthan are already procuring significantly higher hydropower than the obligation proposed in the draft Regulations (regulation 2 (3)). As per the draft regulation, HPO targets for Rajasthan is 0.18%, 0.35% and 0.66% for FY 2021-22, FY 2022-23, and FY 2023-24 years, respectively. As per FY 2019-20 Tariff order, Rajasthan procures 6.14% Hydropower already. In the absence of any separate market for hydropower, or the certificates associated with it, the DISCOMs in Rajasthan will not be able to 'offload' the excess HPO through such market mechanisms
24. Rajasthan Urja Vikas Nigam Limited (in short, 'RUVNL') submitted as under:
- 24.1 Commission has proposed to bifurcate the non-solar RPO to include Wind, Solar, and HPO in line with the MoP issued trajectories. However, such bifurcation may not be suitable for all States. The Commission may consider the States' capabilities prior to determining the long-term growth trajectory. For example, in the case of Rajasthan, given its resource availability, it has more opportunities to produce energy from solar-based power plants rather than hydropower plants. Import of hydropower to fulfil the HPO-may not be a feasible option as the hydro sources in the country are limited and may increase the landed cost of power purchase. It is also pertinent to note that Transmission Charges are levied if any Hydropower is purchased from other states. Further, Rajasthan has already entered into long-term PPAs with Renewable Energy plants presently running on a must-run basis, and it is obliged to procure power from them.
- 24.2 It is requested that Obligation on States may not be fixed by distinguishing between various sources of renewable energy and allow only for a single cumulative RPO figure as this will help to reduce the load on the Inter-state transmission system and may help improve grid stability, as RE would be procured from the cheapest and most accessible source(s) of energy.
- 24.3 Rajasthan does not have rich hydel potential and will have to rely on Inter-State Generating Stations (ISGS). Besides, hydel power procurement is out of the ambit of the competitive bidding regime.

- 24.4 The construction of hydel projects is severely affected by geographical & natural situations, and these involve the issue of rehabilitation/resettlement. Due to this, the capital cost of the project increases, resulting in high tariffs. Further, these projects are considered delayed. Hence, the imposition of HPO on the entities may financially affect the Discoms.
- 24.5 The proposed Amendment covers Large Hydropower Projects (LHPs) commissioned on or after 08.03.2019. However, Rajasthan already has long term PPAs with several hydropower generators (NTPC, SJVN, etc.) having CODs earlier than 08.03.2019. Purchase of hydropower from older plants is no different from a new power plant, as it would ultimately result in the purchase of hydropower energy. It is requested that as Rajasthan has limited resources in terms of hydropower generation, this condition may be waived and considering the availability of the sources, the obligation may be imposed.

Commission's Views/Decision:

25. It has been requested by one of the stakeholders that regulation 4(2)(A) and 4(2)(B) are applicable for CPP, and open access consumers of the total capacity of 10 MW and above and 1 MW and above, but less than 10 MW respectively, the existing, and the proposed Amendment does not have any HPO requirement for CPP and open access consumers. As such there is no need of the insertion of provisions (a), (b) and (c) under sub-regulation 4(2)(A) is inappropriate and words "or HPO" from the proviso (d) needs to be deleted. In case of sub-regulation 4(2)(B), proviso (a),(b),(c) and (d) may be deleted. In view of the fact that CPP and open access consumers may not have firm long-term tie-ups for hydropower akin to Discoms and the Commission has not specified separate HPO targets for these entities in the draft Regulations, the Commission accepts the suggestion. Accordingly, the relevant provisions of sub-regulations (2) and (3) have been deleted/ appropriately modified in the final Amendment Regulations.
26. Some of the stakeholders requested for clarification in respect of " 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." Some have even requested amendments in the same. One of the stakeholders has also suggested that where the number of parties execute PPAs for the hydro capacity of a power plant, the requirement of '70% of the total generated capacity' may be met collectively by all contracting parties. One of the stakeholders also pointed out that hydropower stations are mainly established by NHPC, and normally power plant capacity of each project is contracted by all States of the Northern region. Thus, a single party may not contract for 70% of the capacity. Further, PPAs so executed are long term agreements for the entire life of the projects. In this respect, it is stated that the present regulatory proceeding is limited to the adoption of HPO prescribed by MoP. Any change in other terms and conditions of the order will fall outside the purview of the present order proceedings. However, if need be, the stakeholders may approach the Ministry in this respect. Further, it is clarified that in cases of number of parties have executed the PPAs, the requirement of 70% of the total generated capacity may have to be met collectively by all contracting parties. Therefore, no change is required in the draft Amendment Regulations on this account.

27. It is requested that due to its higher cost, DISCOMs will procure 80% power from Hydro and 20% from low cost RE sources and requested that provision may be made to enforce the DISCOMs to fulfil their 100% HPO requirement from Large Hydro/HEC only. It is stated that in order to facilitate the RPO compliance, flexibility has been provided to the obligated entities in the extant Regulations where it is already provided that on achievement of Non-Solar RPO Compliance to the extent of 80% and above, remaining shortfall if any, can be met by excess solar energy purchased beyond specified Solar RPO for that particular. Further, MoP Notification dated 29.01.2021 also allows similar flexibility in respect of HPO, providing that shortfall in HPO can be met by excess solar or other non-solar energy for that particular year. Commission has proposed the flexibility in meeting HPO in the draft Regulations as has been provided earlier also after consideration of MoP notification. Moreover, the flexibility was provided in the earlier Regulations after following due procedure of previous publication and consideration of

comments/suggestions thereon. Furthermore, the flexibility covers the mismatch in RE resources available to the State. Therefore, no change is required on this account.

28. One of the stakeholders submitted that differentiating Solar and Non-Solar is unjustified. It is further submitted that it is important to specify an overall target for RPO and allow the obligated entities to procure renewable energy from alternate technologies based on their relative economics to ensure economic efficiency. In the draft Regulations, the Commission has not changed any targets for technologies other than HPO. Any change in the current structure of RPO may create uncertainty for existing capacities. Therefore, the Commission has not accepted the same. The Commission notes that moving forward, this may be a good suggestion after protecting the existing PPA (s), and there may be a need for storage purchase obligation. However, as the scope of the present regulatory proceeding is limited to the adoption of HPO prescribed by MoP, the Commission has not considered any change in this regard.
29. It is requested by one of the stakeholders that till the HPO Regulations are put in place, already commissioned projects may qualify for HPO as a promotional measure. A stakeholder also requested that Rajasthan already has long-term PPAs with several hydropower generators (NTPC, SJVN, etc.) having CODs earlier than 08.03.2019. Purchase of hydropower from older plants is no different from a new power plant, as it would ultimately result in the purchase of hydropower energy and requested that Rajasthan has limited resources in terms of hydropower generation, this condition may be waived. It is also submitted by a stakeholder that in the absence of a certificate market for hydropower may also be included as a qualifying technology for crediting RECs. In this respect, it is stated that Commission vide the present proceedings intends to incorporate the HPO prescribed by MOP and the issues raised above, regarding old and new plants and HEC fall outside the purview of this order. Therefore, no change is required on this account.
30. Some of the stakeholders requested to specify the HPO considering the availability of Hydro sources in the State. One of the stakeholders submitted

that in view of the long gestation period of 5-7 years, PPAs have to be executed for hydropower projects well in advance. It is requested that the Commission enquire details of PPAs executed for hydro projects. One of the stakeholders also submitted that HPO on entities may affect them financially. In this regard, the RUVNL vide communication dated 15.06.2021 has informed about the following upcoming Hydro projects having power allocation to Rajasthan:

S.No.	Name of Power Project	Date of PPA	Quantum Allocated by MoP	Expected COD (FY)
1.	Tapovan Vishnugad HEP	27.10.2010	55.30 MW	Dec-2021
2.	Tehri PSP	25.01.2006	100 MW	Jun-2020
3.	Vishnugad Piplikot HEP	22.11.2007	37.3 MW	Jun-2023
4.	Parvati HEP II (4x200=800 MW)	08.05.2003	86 MW	Nov-2021

It is observed that State DISCOMs have already executed PPAs with four hydro projects contracting a total capacity of 278.6 MW. Further, as per regulation 9(2) of the RERC REC Regulations 2010, in case of genuine difficulty in complying with the RPO because of non-availability of renewable energy and/or certificates, the obligated entities can approach Commission to carry forward the compliance requirement to the next year or seek its waiver.

31. A stakeholder also submitted that the fixation of the RPO targets should be based on a scientific study. Another suggestion received is that the cost impact for scenarios wherein adoption of RE beyond RPO limits needs to be understood for which Discoms need to undertake necessary studies and modelling to prepare scenarios to the aid evolution of RPO targets in the future. It is stated that Government on 8.03.2019 had issued an order detailing various policy measures to promote the hydropower sector in India. In compliance with the above and with an objective to add 30,000 MW of hydropower capacity by the year 2029-30, MoP has prepared a revised trajectory of RPO, including the long-term trajectory of HPO considering the LHPs commissioned after 8.03.2019. As per the MoP order dated 29.01.2021, the SERCs are to consider notifying the RPO trajectory, including HPO, for their respective States in line with the aforesaid trajectory. Thus, the

Commission has proposed the HPO trajectory in line with the HPO trajectory prescribed by MOP. As regards the suggestion of the scientific study, Commission has already specified the RPO targets upto FY 2023-24 and an appropriate further view will be taken in the future course of time.

32. One of the stakeholders has submitted that MoP order has prescribed HPO requirement up to 2030 whereas the proposed Amendment covers HPO upto 2023-24. Therefore, it is not appropriate to specify the power stations to be commissioned beyond 31.03.2024 upto 31.03.2030. Commission agrees with the suggestion and the proposed proviso (a) of the sub-regulation (3) of regulation 4 of the draft Regulations has been appropriately Amended as under:

*"a) 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 upto **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".*

However, for the period beyond FY 2023-24 an appropriate view will be taken while specifying the trajectory for FY 2024 -25 onwards.

Pumped hydro storage project (PSP) and Storage Obligation

Stakeholders' Comments/Suggestions:

33. Greenko submitted that MoP on 22.07.2020 (subsequently amended on 03.11.2020) notified the "Guidelines for Tariff based Competitive Bidding Process for Procurement of the Round-The-Clock Power from Grid Connected Renewable Energy Power Projects, complemented with Power from any other source or storage" under Section 63 of the Electricity Act,2003. Clause 22 of the said Guidelines state that if electricity is generated from Energy Storage System (ESS) component charged with wind and/or solar sources, buying obligated entity shall be eligible for non-solar and/or solar RPO compliance. Based on MOP order dated 29.01.2021 pumped storage projects with capacity greater than 25 MW are covered under the Large Hydro Project (LHP) category. Accordingly, power procured from such

Pumped Hydro Storage (LHP), coming into commercial operation after 08.03.2019 shall qualify for meeting Hydro Purchase Obligation (HPO). Considering this, procurement of power by Distribution Licensee/Obligated Entities from a Pumped Storage Plant commissioned on or after 09.03.2019 and charged with the conventional source of power would qualify for meeting HPO. As per the MoP Order dated 29.01.2021 read with Clause 22 of the competitive bidding guidelines, the RE power procured by the obligated entities from pumped hydro storage project, commissioned on or after 09.03.2019, charged with wind and/or solar sources should be made eligible for fulfilling its non-solar and/or solar RPO as well as HPO. Additionally, Solar wind hybrid with storage investment is made in both the technologies, such as RE technologies for generating renewable energy, and pumped storage projects, wherein renewable energy will be stored to provide the same in different time blocks. In view of the above, the following additional clause is proposed:

"The power procured by the Obligated Entity from Pumped Hydro Storage Project, commissioned after 08.03.2019, if charged with wind and/or solar sources, shall be eligible for meeting non-solar and/or solar RPO compliance along with HPO compliance, to the extent of electricity supplied by such Pumped Hydro Storage."

34. Renew Power submitted that the inclusion of PSP under RE/Hydro and its eligibility under HPO is dependent on the source of charging. Such PSP may utilize the conventional power or RE or grid power or mix of all these sources during the charging process, which will be difficult to trace without any process or mechanism in place by the appropriate Agency. Eligible generating stations that have supplied hydropower to obligated entities post 08.03.2019 should also be qualified for HPO or be issued HECs.
35. Sh. Shanti Prasad has submitted that as per ARR of Discoms for FY 2019-20, Windfarm capacity of 4292 MW contributes 6125.6 MUs (i.e., RPO of 10.6%) and solar power capacity of 3000 MW contributes to 1935.6 MUs (i.e., 3.36%). With the rate of growth of 5%, the capacity required to meet RPO requirement will be as under:

Particulars	FY21-22	FY22-23	FY23-24
Energy availability, MUs	68225	71636	75218
-do- from hydro power plants	4362	4490	4735

Particulars	FY21-22	FY22-23	FY23-24
RPO -wind	8.90%	9.10%	9.40%
RPO- solar	8.50%	9.50%	10.50%
RE energy requirement Wind			
Wind	5684	6110	6625
Solar	5428	6379	7401
Capacity required to meet RPO, MW			
Wind	3982	4281	4642
Solar	8409	9882	11465
Maximum demand of Rajasthan, MW in July 21	13974	14673	15406

Thus, out of the estimated peak demand of 15406 MW for FY23-24, peak generation from solar (during daytime) will be 9172 MW (considering 80% availability of 11465 MW capacity) and that from wind (mainly during night hours) will be 4456 MW (considering 96% availability of 4642 MW) (availability is considered as per aforesaid form). Thus, Solar generation will be 60% of peak demand and will be much more during other than peak demand day. Besides this, there is will be solar generation from solar power plants effecting inter-state sale with power flows through RVPN's system. Solar generation during the day, will pose grid management problems as almost entire thermal generation will have to be backed down during the mid-day. A part of it is to remain in hot standby mode to meet variation of solar generation due to (i) practically sinusoidal generation curve and (ii) weather conditions (rains; fog, cloud cover, dust storm etc). When wind generation is relatively lower than solar generation during night hours, thermal generation will have to be brought back. A part of it is to be kept in hot standby mode to meet variations in wind generation. Not only this, 15% variation in solar generation (which is not subject to DSM charges) will be 1376 MW, and for variation in solar generation (vis-à-vis scheduled generation), Rajasthan as a regional entity will also be subject to the northern region's (NR) charges for deviation and additional charges for (volume) deviation etc. as per CERC DSM regulations 2014. Considering these, it is utmost necessary that storage type solar / wind generation may be promoted for Rajasthan. It will be preferable to specify, out of additional RPO requirements for FY22-23 and onwards (i.e., for new wind and solar generation capacity), at least 15% of the additional RPO requirement will be for RE storage stations with a

capacity of 2-3 hours storage. RE storage will take care of short time variation in solar power generation and thereby smoothen the generation curve, which will reduce thermal capacity to be kept in hot standby mode and thus the cost savings. Besides this, it will also meet a part of peak demand. In view of this, following proviso is suggested:

"125% of Generation from RE storage station will be considered towards meeting wind / solar RPO where storage facility is established on wind / solar generation (125% is based on storage efficiency of 80%) and that where storage capacity cannot be determined on solar or wind power plant, then 125% of its generation will be considered towards deficiency in HPO, Wind RPO and Solar RPO in this order (based on their present day cost of supply) and that deficiency in RPO requirement of storage system will be met by RPO requirement of solar increased by deficiency".

Commission's Views/Decision:

36. Several suggestions have been received regarding the eligibility of LHPs for qualifying for HPO. It is submitted that inclusion of PSP under RE/Hydro and its eligibility under HPO is dependent on the source of charging. Such PSP may utilize the conventional power or RE or grid power or mix of all these sources during the charging process, which will be difficult to trace without any process or mechanism in place by the appropriate Agency. It is also submitted by another stakeholder that in view of the competitive bidding guidelines for storage dated 22.07.2020 and MoP OM dated 29.01.2021, power procured by the obligated entities from pumped hydro storage project, commissioned on or after 08.03.2019, charged with wind and/or solar sources should be made eligible for fulfilling its non-solar and/or solar RPO as well as HPO.
37. It is observed that MoP OM dated 8.03.2019 at para 2 provides as under:

"2. Declaring LHPs (> 25 MW projects) as Renewable Energy source:
2.1 Large Hydropower Projects (LHPs, i.e. > 25 MW projects) are declared as Renewable Energy source. However, LHPs would not automatically be eligible for any differential treatment for statutory clearances such as Forest Clearance, environmental clearance, NBWL clearance, related Cumulative Impact Assessment & carrying Capacity study, etc., available to Small Hydropower Projects (SHPs), i.e., projects of capacity up to 25 MW. Ministry of Power shall continue to be the administrative Ministry for LHPs."

The 'Guidelines for Tariff Based Competitive Bidding Process for Procurement of Round-The Clock from Grid Connected Renewable Energy Power Projects, complemented with Power from Coal Based Thermal Power Projects dated 22.07.2020' subsequently amended on 3.11.2020 and 5.02.2021 at para 22 provide as under:

"22. RENEWABLE PURCHASE OBLIGATION (RPO)

The renewable energy component [including Energy Storage System (ESS) component charged with RE sources], bought under this Scheme shall be eligible for RPO compliance. If RE power has both solar and non-solar component, the apportionment of RPO between solar & non-solar shall be on the lines of principle adopted in case of hybrid plants."

Further, the Amendments to the Guidelines for Tariff Based Competitive Bidding Process for Procurement of Round-The Clock from Grid Connected Renewable Energy Power Projects, complemented with Power from any other source or storage notified by Ministry of Power vide Resolution dated 5.02.2021 at para 2.2(b) provide as under:

"2.2 (b) 'Renewable (RE) Power': The term 'RE Power', or 'Renewable Power', or 'Renewable Energy Power', wherever used in these Guidelines, shall refer to power from Solar Power Generating Systems, Wind Power Generating Systems, or a combination thereof, with or without Energy Storage System (ESS), commissioned in pursuance of bidding process under these Guidelines. It is clarified that ESS charged using a source other than RE power would not qualify as RE power. Further, the ESS offered with a project under these Guidelines should only be charged from RE power capacity. The same RE power shall either be considered for getting compensation in case of curtailment or for charging of ESS."

38. It is noticed from the above that MoP OM dated 8.03.2019 is silent on the source of charging for PSPs. However, the Resolution dated 5.02.2021 issued by MoP clarified that ESS charged using a source other than RE power would not qualify as RE power. Commission is of the view that the purpose of present regulatory exercise is to provide HPO in line with MoP order. As regards methodology of calculation for working out the RPO fulfilment in case of ESS and PSP charged by using Renewable Energy Sources, the Commission shall issue the methodology for the same through a separate order.
39. In addition to above, as regards the other suggestions of waiving the condition of COD of 08.03.2019 and considering hydropower supplied by the

eligible generating stations to obligated entities post 08.03.2019 also as qualified for HPO or be issued HECs, the same falls out of the purview of this order. If need be, the stakeholders may approach the Ministry in this regard. Thus, no change is required on this account.

40. As regards the suggestion of the stakeholders regarding promotion of storage type solar/wind generation and specifying at least 15% of the additional RPO requirement for RE storage stations, it is stated that Commission has made the provisions for determination of project specific tariff for Renewable Energy projects with Storage under the RERC RE Tariff Regulations 2020. Further, Commission in its order dated 11.01.2019 at para 2.2.22 provided as under:

"2.2.22To start with, as a pilot, the State Discoms may consider for energy storage as a certain percentage of the total solar/wind capacity in their future auctions/bidding. In the meantime, SLDC is directed to initiate the studies based on cost of storage system, volume deviation of solar (and wind) generation and volume deviation of Discoms at NR".

41. The scope of the present order is limited to the incorporation of HPO, however, the Commission appreciates the suggestion and is of the view that RPO target for storage and methodology of fulfilment of the same may be specified after inviting comments/suggestions following the previous publication process in due course of time through a separate order.

RPO compliance:

Stakeholders' Comments/Suggestions:

42. Bask Research Foundation has submitted that DISCOMs have not been able to comply with the RPO targets. The shortfall witnessed is not huge. Therefore, the proposed targets are agreed upon, and Commission is requested to enforce stricter compliance of the targets. The Commission may also take suitable penal action in any further non-compliance, such as disallowing a percentage of the RPO target shortfall.
43. IEX submitted as under:
- 43.1 CERC on 27.08.2020 approved the Green-Term Ahead Market (GTAM) wherein Solar and Non-Solar RE is transacted in four contracts - namely intra-

day, Day Ahead contingency, Daily and Weekly. The Discoms and obligated entities can fulfil their existing RPO obligations and targets in forthcoming years by procuring RE power through the GTAM market and selling surplus RE power. The introduction of GTAM has opened avenues for developing organized renewable energy markets to provide an alternate market-based route to the RE generators to sell their green power and to the buyers to fulfil their RPO at a competitive price with the flexibility of entry and exit in the market.

- 43.2 HPERC in its HPERC (Renewable Power Purchase Obligation and its Compliance) (Seventh Amendment) Regulations, 2021 has provided for RPO fulfilment for the obligated entities by the purchase of RE through Power Exchanges, which is depicted as under for reference:

"Provided further that such obligation to purchase renewable energy shall be inclusive of -

- (i) purchases from generating stations based on renewable energy sources,*
- (ii) purchases from any other distribution licensee, which would arise from renewable sources,*
- (iii) the energy generated from its own renewable sources, if any, by the obligated entity, and*
- (iv) the Renewable Energy purchased from the Power Exchange(s):"**

- 43.3 It is requested that the Commission may include such provision of purchase of renewable energy through power exchange for meeting RPO while finalizing the regulation.
- 43.4 Ministry of Power ('MoP') Order dated 29.01.2021 mandate the Central Electricity Regulatory Commission ('CERC') to develop Hydro Energy Certificate mechanism through Regulations to facilitate compliance of Hydropower Purchase Obligation ('HPO'). The proposed draft does not recognise the same. It is suggested that same may be incorporated in the regulations by suitably amending the definitions of "Certificate", "Floor price", "Forbearance price", etc.
44. Renew Power submitted that Compliance of RPO by obligated entities has always been an issue, and implementation of the same can only be achieved by imposing penalties. To ensure fulfilment of HPO provisions, it is requested to impose penalties for non-compliance of HPO implementation. The proposed penalties are (with a cap of Rs 2.00/kWh):

- (i) Rs. 1.00/kWh - 1st year
- (ii) Rs. 1.50/kWh - 2nd Year
- (iii) Rs. 2.00/kWh – 3rd year
- (iv) Rs. 2.00/kWh - 4th year

Commission's Views/Decision:

45. Some of the stakeholders have requested the Commission to ensure RPO compliance and some have requested to impose penalties for non-compliance of HPO implementation. The RERC (Renewable Energy Certificate and Renewable Purchase Obligation Compliance Framework) Regulations, 2010 deal with consequence of default in meeting RPO by an obligated entity. According to the Regulations, the obligated entities in default shall have to pay the RPO charge assessed equivalent to the product of shortfall and forbearance price of solar or non-solar REC as applicable on 31st March of the relevant year. In addition to the above, it shall also be liable for penalty as may be decided by the Commission under Section 142 of the Electricity Act, 2003. Therefore, the request of specifying separate penal charges is not accepted.
46. It is also submitted by the stakeholders that provision may be incorporated that RPO can be also fulfilled by the obligated entities by the purchase of RE through Power Exchanges. The existing Regulations at regulation 7(1) already have the provision that obligated entities shall purchase renewable energy and/or renewable energy certificates for discharge of the specified mandatory obligation. Such purchases also cover the purchase of RE through power exchanges and therefore, there is no further requirement for a separate provision in this regard.
47. As regards the request of recognising HEC Mechanism, it is stated that REC mechanism is having National character and CERC is yet to incorporate the same in their REC Regulations. The same shall suitably be incorporated in the Regulations once the same is notified by CERC.

Other comments- DSM charges:

Stakeholders' Comments/Suggestions:

48. Sh. Shanti Prasad submitted that CERC has proposed draft DSM Regulations where Deviation Settlement Mechanism (DSM) charges are not linked to average frequency during the time block. RERC DSM regulations will have to be brought in line with CERC DSM regulations other than wind and solar power plants.

Commission's Views/Decision:

49. The suggestion lies outside the purview of this order. However, Commission has noted the suggestion, and may take the appropriate view in the matter separately.
50. In the light of the foregoing discussion, the finalized Regulations duly authenticated, placed below, may be got published in the Official Gazette.
51. 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.

(Prithvi Raj)
Member

(S.C. Dinkar)
Member

(Dr.B.N. Sharma)
Chairman

The list of stakeholders who offered the comments/suggestions:

S.No.	Stakeholder's Name
1.	Greenko Energies Private Ltd, Hyderabad, Telangana.
2.	Sh. Shanti Prasad, Jaipur, Rajasthan.
3.	Rajasthan Urja Vikas Nigam Limited ('RUVNL'), Jaipur, Rajasthan.
4.	Indian Energy Exchange ('IEX'), New Delhi.
5.	Bask Research Foundation, Jaipur, Rajasthan.
6.	Centre for Energy Regulation (CER) & Energy Analytics Lab (EAL), IIT Kanpur.
7.	ReNew Power Private Limited, Delhi.

RAJASTHAN ELECTRICITY REGULATORY COMMISSION

JAIPUR

Notification

December , 2021

No. RERC/Secy./Reg.

In exercise of the power conferred under the Sections 86(1)(e) and 181 of the Electricity Act, 2003 and all other powers enabling it in this behalf, and after previous publication, the Rajasthan Electricity Regulatory Commission hereby makes the following Regulations to amend the Rajasthan Electricity Regulatory Commission (Renewable Energy Obligation) Regulations, 2007 (hereinafter referred to as "the Principal Regulations"), namely:

1. Short title, commencement, and extent of application:

- (1) These Regulations may be called the Rajasthan Electricity Regulatory Commission (Renewable Energy Obligation) (Seventh Amendment) Regulations, 2021.
- (2) These Regulations shall come into force from the date of their publication in the Official Gazette.
- (3) These Regulations shall apply throughout the State of Rajasthan.

2. Amendment in Regulation 2 of the Principal Regulations:

The definition appearing at sub-regulation (1) II shall be substituted with the following:

"II. Renewable Energy" or "RE" is the energy generated from the Renewable Energy Sources defined in RERC (Terms and Conditions for Determination of Tariff from Renewable Energy Sources) Regulations, 2020 as amended from time to time and shall include cogeneration."

3. Amendment in Regulation 4 of the Principal Regulations:

- (1) The entries at s.no. 4, 5 & 6 for the FY 2021-22,2022-23 & 2023-24 shall be substituted in the existing table appearing under the heading (A) of sub-regulation (2):

S.No.	Year	Obligation expressed as percentage of energy consumption (%) excluding consumption met from hydro sources of power.		
		Non-solar	Solar	Total
4	2021-22	9.98%	8.50%	18.48%
5	2022-23	10.45%	9.50%	19.95%
6	2023-24	11.16%	10.50%	21.66%

Further, the following new proviso shall also be added below the existing provisos:

"Provided also that for FY 2021-22 to FY 2023-24, on achievement of Solar RPO compliance to the extent of 80% and above, remaining shortfall, if any, can be met by excess non-solar energy consumed beyond specified Non-Solar RPO for that particular year. Similarly, on achievement of other Non-Solar RPO compliance to the extent of 80% and above, remaining shortfall if any, can be met by excess solar or eligible hydro energy consumed beyond specified Solar RPO for that particular year."

- (2) The entries at s.no. 4, 5 & 6 for the FY 2021-22,2022-23 & 2023-24 shall be substituted in the existing table appearing under the heading (B) of sub-regulation (2):

S.No.	Year	Obligation expressed as percentage of energy consumption (%) excluding consumption met from hydro sources of power
4	2021-22	18.48%
5	2022-23	19.95%
6	2023-24	21.66%

- (3) The entries at s.no. 4,5 & 6 for the Year 2021-22,2022-23 & 2023-24 of the existing table under sub-regulation (3) shall be substituted as under:

S.No.	Year	Obligation expressed as percentage of energy consumption (%) excluding consumption met from hydro sources of power.				
		Non-solar			Solar	Total
		Wind	Biomass	HPO		
4	2021-22	8.90%	0.90%	0.18%	8.50%	18.48%
5	2022-23	9.10%	1.00%	0.35%	9.50%	19.95%
6	2023-24	9.40%	1.10%	0.66%	10.50%	21.66%

Further, the following new proviso shall also be added below the existing provisos:

"Provided also that for FY 2021-22 to FY 2023-24, on achievement of Solar RPO compliance to the extent of 80% and above, remaining shortfall, if any, can be met by excess non-solar energy consumed beyond specified Non-Solar RPO for that particular year. Similarly, on achievement of other Non-Solar RPO compliance to the extent of 80% and above, remaining shortfall if any, can be met by excess solar or eligible hydro energy consumed beyond specified Solar RPO or HPO for that particular year. Further, on achievement of HPO compliance to the extent of 80% and above, remaining shortfall, if any, can be met by excess solar or other non- solar energy consumed beyond specified Solar RPO or Other Non-Solar RPO for that particular year."

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 upto 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 HPO liability of the State/Discom could be met out of the free power being provided to the State from LHPs 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) only to the extent of HPO liability of the State/Discom shall be eligible for HPO benefit.

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

By Order of the Commission

Secretary