

F. No.09/11/2021-RCM  
Government of India  
Ministry of Power  
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Shram Shakti Bhawan, Rafi Marg,  
New Delhi, the 15<sup>th</sup> November, 2021

To

1. ACS/Principal Secretaries/Secretaries (Power/Energy) of all State Governments/UTs.
2. CMD/MDs of State Gencos/Discoms
3. All Central Power Sector Utilities

**Sub: Scheme for Flexibility in Generation and Scheduling of Thermal/ Hydro Power Stations through bundling with Renewable Energy and Storage Power – reg.**

Sir/Madam,

Ministry of Power vide letter dated 05th April 2018 introduced a detailed mechanism for allowing Flexibility in Generation and Scheduling of Thermal Power Stations. The objective of the mechanism was to promote bundling of Renewable Energy (RE) with Thermal Power and for meeting the Renewable Purchase Obligation (RPO) of Distribution Licensees. The detailed mechanism that was issued earlier is now being revised to comprehensively cover replacement of thermal and hydro power with renewable energy power or renewable energy combined with battery energy storage systems; so that the distribution licensees can meet their Renewable Purchase Obligation (RPO) within the existing contracted capacity and without facing any additional financial burden.

2. Further, due to large scale integration of Grid connected renewable which inherently has huge variability of generation, there is a need of balancing power to maintain security and stability of Grid. Under existing regulation, such balancing power is to be arranged by the Discoms. However, in the revised scheme the responsibility of arranging balancing power requirement will now be on the Generators.
3. This flexibility will provide the Power Generators an opportunity to optimally utilize generation from RE sources and also help in reducing emissions and it shall also facilitate further RE Capacity addition
4. The detailed mechanism of allowing Flexibility in Generation and Scheduling of Thermal/ Hydro Power Stations through bundling with Renewable Energy and Storage Power is given at Annexure.



5. This issues with the approval of Hon'ble Minister of Power and New & Renewable Energy.

Enclosure: as above

Yours sincerely,



(Ghanshyam Prasad)  
Joint Secretary (R&R, OM & RCM)  
Tel. No. 011-23710389

**Copy to:**

1. Secretary, Ministry of New & Renewable Energy, New Delhi
2. Secretary, Ministry of Coal, New Delhi
3. The Chairperson, CEA, New Delhi
4. The Secretary, CERC, Chanderlok Building, Janpath, New Delhi
5. Secretaries of All State Electricity Regulatory Commissions/JERCs

Copy for information to: Sr. PPS to Secretary (P)/ PPS to AS (Thermal)/ PPS to JS (Hydro)/ Director (RCM), Ministry of Power.

## **Revised Scheme for Flexibility in Generation and Scheduling of Thermal/ Hydro Power Stations through bundling with Renewable Energy and Storage Power**

### **1. Background**

Ministry of Power vide letter dated 05<sup>th</sup> April 2018 introduced a detailed mechanism for allowing Flexibility in Generation and Scheduling of Thermal Power Stations. The objective of the mechanism was to promote bundling of cheaper Renewable Energy (RE) with costlier Thermal Power and to promote Renewable Purchase Obligation (RPO) of Distribution Licensees. Recently, changes in energy-mix and the larger procurement by distribution licensees has brought new issues to the forefront needing policy attention. Accordingly, the detailed mechanism that was issued earlier in this regard is now being revised to comprehensively cover replacement of thermal and hydro power with standalone renewable energy power or renewable energy combined with battery energy storage systems; so that the distribution licensees can meet their Renewable Purchase Obligation (RPO) within the existing contracted capacity and without facing any additional financial burden.

### **2. Applicability**

- 2.1. All new and existing coal/lignite/gas based thermal generating stations or hydro power stations for the purpose of the scheme are herein referred to as a 'Generating Station'.
- 2.2. Any Generating Company having such Generating Station (s) may establish or procure renewable energy from a Renewable Energy (RE) power plant which is either co-located within the premises or at new locations within the vicinity of an existing Generating Station.
- 2.3. The generating companies shall be allowed to utilize such renewable energy for supplying power against existing commitments i.e., replacement of Thermal/ Hydro power to procurers anywhere in India. Further, the renewable energy procured by the Distribution Licensee shall be considered towards the RPO of the Distribution Licensee.
- 2.4. The following three types of cases will be eligible under the "Renewable Energy Power Bundling and Flexibility in Generation and Scheduling of Thermal/ Hydro Power Stations" policy,
  - a) RE power plant co-located within the premises of a Generating Station.
  - b) RE power plant located in the vicinity i.e., within 100 km of a Generating Station.
  - c) RE power plant co-located within the premises or located in the vicinity of a Generating Station supplying RE power to procurers of another Generating Station, located at a different location and owned by the same Generating Company.
- 2.5. The term 'RE power plant' referred herein the scheme may be established on a standalone basis or in combination with Battery Energy Storage System (BESS) in the cases listed in para 2.4. Accordingly, from here forth the term 'RE power' shall mean either standalone RE power or RE power with BESS.
- 2.6. Bundling under the scheme shall be permissible in those cases where the RE power is injected through the existing electrical switchyard of the Generating Station.

### **3. Tariff Determination of RE Power Plants**

- 3.1. In case of RE power plant co-located within the premises of a Generating Station under section

62, the appropriate commission shall determine the tariff of renewable energy supplied.

Provided that such RE power plant shall be established through a competitive EPC tendering.

- 3.2. In case of RE power plant located in the vicinity of a Generating Station under section 62 or 63, renewable energy shall be procured on a competitive bid basis.
- 3.3. A Generating Company under section 62 or its subsidiary shall be allowed to establish a RE power plant within its vicinity through a tariff based competitive bidding process under section 63 and provided the bids are called by a GOI approved third party.
- 3.4. Any Battery Energy Storage System (BESS) to be established with a RE power plant shall be established through a competitive bid process under section 63.

#### **4. Transmission Charges**

- 4.1. No additional transmission charges shall be levied for bundling of RE power with Thermal/ Hydro power when the RE power plant is co-located within or located in the vicinity of a Generating Station.
- 4.2. No transmission charges for use of Inter State Transmission System (ISTS) shall be levied when RE power from a RE power plant situated at one Generating Station is supplying to procurers of another Generating Station located at a different location and owned by the same Generating Company.

Provided that the evacuation of RE power is being made from the same switchyard of the Thermal/ Hydro power plant, up to total transmission capacity.

Provided that such RE power is evacuated through the existing ISTS network without any augmentation.

- 4.3. The waiver of transmission charges for use of Inter State Transmission System (ISTS) for sale through power exchange or to any third party shall be as per the extant policy of Central government.

#### **5. Scheduling and commercial mechanism**

- 5.1. Declared Capacity (DC) shall be given by a Generating Station (s) as per the extant regulations. Once the schedule for the next day is received, the Generating Station shall have the flexibility to use Thermal/ Hydro power and RE Power to meet its scheduled generation.
- 5.2. The RE power, wherever found feasible shall replace the Thermal/ Hydro power of any of the Generating Station of the Generating Company.
- 5.3. The sum of all the power supplied from Thermal or Hydro and Renewable sources on an actual basis shall be considered for Deviation Settlement Mechanism (DSM) purposes.
- 5.4. The Declared Capacity of the Thermal/ Hydro Generating Station shall be with respect to the terms of the Power Purchase Agreement (PPA) and the availability of primary fuel. The declared capacity of Thermal/ Hydro Generating Station cannot be based on the availability of

additional RE power.

- 5.5. The changes in the regulation, if any, required for implementation of the above scheme shall be done by the appropriate Electricity Regulatory Commission.
- 5.6. The RE power (with or without energy storage system) shall be supplied to the beneficiaries at a tariff which shall be less than the Energy Charge Rate (ECR) of the Generating Station which was originally scheduled. Such tariff would include the balancing cost and the tariff risk to be taken by the Generator.
- 5.7. The net savings realized, if any, from supply of RE power in place of Thermal or Hydro power under existing PPA shall be passed on to the beneficiary by the Generating Company on a monthly basis. If required, at the end of each year, truing-up shall be done by the Appropriate Commission. The net savings shall be shared with between the generator and the beneficiary in the ratio of 50 : 50 subject to the cap of 7 paise / kWh to the Generator.

## **6. Deviation Settlement Mechanism (DSM) and Scheduling**

- 6.1. For the purposes of flexible scheduling and operation of Thermal/ Hydro stations, while giving the DC of a Generating Station the generator shall not take into the account the forecast of generation from renewables. Once the schedule for a specific Thermal/ Hydro Generating Station has been received, then depending upon the forecast available for renewables, that Generating Station shall supply to meet the schedule from Thermal/ Hydro power and replacement RE power.
- 6.2. The deviation, if any, shall be made applicable to the scheduled generation from Thermal/ Hydro station and sum of actual generation from Thermal/ Hydro and RE power sources. No DSM charges shall be payable/receivable by the Generating Station if it is able to meet its scheduled generation by supplying Thermal/ Hydro and RE power in any ratio.
- 6.3. Changes, if any, required in the regulation for implementation of the above scheme shall be made by the appropriate Electricity Regulatory Commission.
- 6.4. Central Electricity Authority shall monitor the implementation and suggest changes, if required, in the scheme to the Central Government. In doing so, CEA may consult MNRE, POSOCO, CERC, Distribution Licensee and other stake holders.

## **7. Renewable Purchase Obligation**

- 7.1 Such renewable energy procured by the beneficiaries shall qualify towards meeting their Renewable Purchase Obligations (RPO).

## **8. Additional mechanisms for RE bundling**

- 8.1. **Requirement of Additional Agreements to PPA/ PSA:** Distribution Licensee will have the flexibility to procure RE power within the existing PPA to meet their RPO. There shall not be any requirement of signing additional agreement in cases where the landed tariff of RE power (with or without energy storage system) is less than the ECR of the Generating Station.

- 8.2. A standard terms and conditions of RE bundling for facilitating operations of the scheme shall be annexed with the existing PPA/PSA.
- 8.3. **Requirement of selling the RE power in power market when it is not feasible to replace the Thermal/ Hydro power:** During certain periods, the replacement of Thermal/ Hydro power may not be feasible on account of technical minimum schedule, forced/ planned shutdown of a Generating Station. To avoid stranding of RE power, it is provided that the Generating Station shall be allowed to sell such RE power to third parties/ Power exchange and no clearance is required from beneficiaries of the station. However, the right to schedule power from the Generating Stations shall first rest with the PPA holders and in case, they do not schedule the power, the Generating Station shall have the right to sell the unscheduled RE power in the market. Also, during such conditions a RE power plant would not be operating under the flexibility scheme and therefore there shall not be any requirement of sharing gains /losses derived through sale of such RE power in the market.

The concerned RLDC/RPC shall facilitate sale of such power in the power market by separate scheduling of RE power for both co-located and near located (within vicinity) RE stations.

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