

Shram Shakti Bhawan, Rafi Marg,  
New Delhi, the 5<sup>th</sup> April, 2018

To

1. Principal Secretaries/Secretaries (Power/Energy) of all State Governments/UTs.
2. CMD/MDs of State Gencos/ Discoms
3. CMD of all CPSUs under administrative control of Ministry of Power

**Sub: Flexibility in Generation and Scheduling of Thermal Power Stations to reduce emissions.**

Sir/Madam,

The concept of Flexible utilization of coal as introduced by the Central Government in year 2016, allows the use of coal within its basket in optimal manner. This avoids unnecessary coal transportation and reducing the power generation cost. In a similar manner, it is has been decided that there should be some flexibility in Generation and scheduling of Thermal Power Stations so that Discoms are able to meet their RPO without facing any additional financial burden.

2. Further, due to large scale integration of Grid connected renewables which inherently has huge variability of generation, there is a need of balancing power to maintain security and stability of Grid. Under present regulation, such balancing power is to be arranged by the Discoms. Hence, the responsibility of arranging balancing power requirement will now also be shared by 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 Power Stations is enclosed at **Annexure**.
5. All stakeholders are requested to take necessary action in this regard.
6. This issues with the approval of Hon'ble Minister of State (I/C) for Power and New & Renewable Energy.

Enclosure: as above

Yours sincerely,

  
(Ghanshyam Prasad)  
Chief Engineer  
Tel. No. 011-23710389

Copy to:

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

Copy for information to:

PS to MOSP (I/C), PPS to Secretary (Power), All Joint Secretaries/EA/ CE (OM&RR) and Directors/ DS, MoP

## **Flexibility in Generation and Scheduling of Thermal Power Stations to reduce emissions.**

### **A. Background**

The Government of India has given commitment that as part of Nationally Determined Contributions (NDC), India would have 40% of its installed capacity from non-fossil fuel sources by the year 2030.

In pursuance of this, as per provisions of Tariff Policy issued on 28<sup>th</sup> January, 2016, Ministry of Power has issued 'Long term growth trajectory of RPOs' for Non-solar as well as solar sources, uniformly for all States/UTs, initially for three years from 2016-17 to 2018-19.

<b>Long Term trajectory</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Non-Solar	8.75%	9.5%	10.25%
Solar	2.75%	4.75%	6.75%
Total	11.5%	14.25%	17.00%

In the year 2016, Government has introduced the concept of flexible utilization of coal. Earlier, each power plant owned by a company had to sign Fuel Supply Agreements (FSA) for supply of coal from a specified coal mine. The policy for flexible utilization of coal allowed a company to use coal within its basket in the most optimal manner such that unnecessary coal transportation is avoided and lower costs of power generation could be passed on to the beneficiary states.

In a similar manner, there should be some flexibility provided in electricity Generation so that Discoms are able to meet their RPO without facing additional financial burden.

### **B. Need for allowing flexibility in Generation**

Due to larger procurement of Renewables, the issues being faced by the stakeholders including Discoms which need to be addressed inter-alia are:

- i) Need for balancing power: RE Generation sources have the benefits of cleaner energy sources but Solar and Wind energy is available only during some part of the day and is generally infirm in nature. This necessitates the user of RE energy



(mainly Discoms) to make arrangements for balancing power to meet the power requirement when RE energy will not be available. Thus, due to large scale integration of Grid connected renewable which inherently has huge variability of generation, there is a requirement of balancing power which matches with such variations so that the security and stability of Grid is maintained. Under present regulation, such balancing power is to be arranged by the Discoms.

- ii) Additional financial burden to Discoms to meet RPO: Most of the states already have adequate PPA. In order to meet the RPO, Discoms will have to tie up additional RE power which will pose additional financial burden on them.

Thus, considering the impact of new environmental norms on thermal power generation capacity, energy storage capability of Hydro stations, infirm nature of RE Generation sources, balancing power requirements by Discoms and the benefit of Renewable Sources of energy in reducing environmental emissions, there is a need to provide flexibility to the Generating Stations to generate RE power and supply power under existing / future contractual agreements. Discoms will have flexibility to procure RE power within their existing PPA and meet their RPO.

### **C. Flexibility to Generating company**

The generating company shall have the flexibility of using its Thermal power or renewable power to meet its scheduled generation from the specific thermal generating station. This flexibility will provide the Power Generators an opportunity to optimally utilize generation from RE sources and also help in reducing emissions. Beneficiaries of the Power will also get the firm power including Renewable power, which will help them to meet their RPO obligations and also the responsibility of arranging balancing power requirement will be shared by the Generators.

### **D. Proposed Mechanism for allowing Flexibility in Generation**

- i) Any generating company having coal/lignite/gas based thermal generating stations, may establish or procure renewable energy generating capacity anywhere in the country either at existing stations or at new locations.



ii) The generating companies would be allowed to utilize such renewable capacities for supplying power against existing commitments to supply the power from thermal station(s) anywhere in India.

iii) **Scheduling and commercial mechanism**

- a. Declared Capacity (DC) shall be declared by the existing Thermal generating station as per the extent regulations. Once the schedule for the next day is received, the generating station shall have the flexibility of using its Thermal power or the generating company owned renewable power or procured RE Power to meet its generating station scheduled generation. Thus the RE power shall replace the Thermal power of any of the thermal generating station of the generating company, wherever found feasible by the generating company.
- b. The sum total of all the power actually supplied from various generating sources shall be considered for DSM purposes.
- c. The Declared Capacity of the Thermal Generating station shall be with respect to the terms of the PPA and the availability of primary fuel. The declared capacity of thermal generating station cannot be based on the availability of the additional RE power.
- d. The changes in the regulation, if any, required for implementation of the above scheme shall be done by the appropriate Electricity Regulatory Commission.
- e. The Power from RE stations would be supplied to the Beneficiaries at a Tariff which shall be equal to Energy Charge Rate (ECR) of the power station which was originally scheduled. This would include the balancing cost and the tariff risk to be taken by the Generator.
- f. The net gain realized, if any, from supply of RE power in place of thermal power under existing PPA shall be passed on to the beneficiary appropriately considering balancing power support provided and the risk taken by the



generator. For this purpose, at the end of the year, truing-up can be done by the Appropriate Commission and the net gain, if any, earned by the Generator shall be shared with the beneficiary in the ratio of 50 (Beneficiary) : 50 (Generator).

g. This shall not be applicable to RE Projects for which PPAs have already been signed by the Generator and Beneficiaries.

h. The extra generation capacity available from existing thermal station(s) corresponding to the renewable generation capacity and up to the existing contracted capacity would make available additional power which at the time of need can be utilized by the beneficiaries.

iv) **RPO/ RGO** - Power which is generated from such renewable energy shall be eligible for any cross subsidies notified by the Government from time to time including waiver from ISTS transmission charges and losses as per notification from the Government. Such renewable energy procured by the beneficiaries shall qualify towards meeting their Renewable Purchase Obligations (RPO obligations). Further, such renewable power in capacity terms shall also qualify for Renewable Generation Obligations (RGO obligations) for the generators as envisaged in the Tariff Policy and as and when notified by Government of India.

v) **Deviation Settlement Mechanism (DSM)& Scheduling-**

For the purposes of flexible scheduling and operation of thermal stations, while giving the DC of the existing thermal station the generator shall not take into the account the forecast of generation from renewable component. Once the schedule for specific thermal generating station has been received, then depending upon the forecast available for RE energy, that Generating Station shall supply power either from existing thermal station or combination of thermal and RE power to meet its scheduled power as defined earlier in this scheme. Thus the deviation, if any, shall be made applicable to the scheduled generation from thermal station and sum total of actual generation from thermal/RE sources. No DSM shall be payable/receivable by the generating station if it is able to meet its scheduled generation by supplying thermal and RE power in any ratio.

- vi) Procurement and supply of RE power by the Generator for supply under this scheme shall be allowed and necessary License required need to be fulfilled by the respective Generating Company.
- vii) The proposed scheme shall be applicable only for the Thermal projects developed / being developed under Section 62 of the Electricity Act, i.e., “Regulated Tariff based Projects”.
- viii) Use of flexibility in generation as proposed in the scheme is optional and only if found feasible Generator can use power from RE sources to replace its existing thermal power to meet its schedule generation from thermal power station.
- ix) Changes, if any, required in the Regulation for implementation of the above scheme shall be made by the appropriate Electricity Regulatory Commission.
- x) 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, Discoms and other stake holders.
- xi) CEA shall also suggest a road map for implementation of the scheme at the Generating company level i.e a change from Station wise flexibility to company-wise flexibility



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