No. 23/21/2018-R&R
Government of India
Ministry of Power
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Shram Shakti Bhawan, Rafi Marg,
New Delhi, 17th July, 2018

To

1. Chairperson, Central Electricity Authority, New Delhi.
2. Secretary, CERC, New Delhi.
3. Pr. Secretary/Secretary (Energy/Power), State Governments.
4. CMD, PGCIL, Gurugram.
5. CMD, POSOCO, New Delhi.
6. CMD, NTPC, New Delhi.
7. DG, Association of Power Producers, New Delhi.

Subject: Draft concept note on 'Merit Order Operation – Flexibility in Generation and Scheduling of Thermal Power Stations to reduce the cost of power to the consumer' – regarding.

Sir,

I am directed to say that a draft concept note on "Merit Order Operation – Flexibility in Generation and Scheduling of Thermal Power Stations to reduce the cost of power to the consumer" has been prepared to optimize cost of power.

2. A draft concept note on the above subject is enclosed with the request that comments of your Department/Organisation may please be furnished to this Ministry by 1st August, 2018.

Yours faithfully,

Encl: As above

(Sandeep Naik) 17.7.18
Director
Tel: 2371 5250

Copy for information to:

PPS to Secretary (Power), PPS to AS(R&R), PS to CE(R&R), PS to Dir(R&R).

DRAFT

Flexibility in Generation and Scheduling of Thermal Power Stations to reduce the cost of power to the consumer

A. Background

There has been a significant increase in the installed generation capacity in the country to around 344 GW as on 31.5.2018 which includes the RE Capacity of around 70 GW. The peak electricity demand in the country was around 173 GW. Due to huge generation capacity addition and the demand growth not being commensurate with the capacity addition, has resulted in decreasing PLF trend of the coal based thermal power plants. This has resulted in the increased un-requisitioned power from coal based thermal power stations in certain periods. Moreover, since power from Central Generating Stations is allocated to beneficiaries within a region, it has also been observed that at many times cheaper power from one station in a region remains un-requisitioned while costlier power of other station in other region is dispatched which results in increased average cost of power for the country. PLF of the coal based stations is expected to further decrease with increased addition of Renewable based capacity and therefore the aberration of cheaper stations remaining unutilized and costlier station running may increase.

The Government of India has taken various policy initiatives in order to reduce the cost of generation. In the year 2016, Government had allowed "*flexibility in utilization of domestic coal by States*". Earlier, each power plant owned by a company signed 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 the benefits of lower costs of power generation could be passed on to the beneficiary states.

Thereafter, on 05.04.2018, Government had issued scheme for "Flexibility in Generation and Scheduling of Thermal Power Stations to reduce emission" wherein flexibility has been given to generating company to supply Renewable power against schedule received for thermal power. The Scheme envisages sharing of benefits, if any arising out of the scheme, between the generators and beneficiaries in 50:50 ratio.

In a similar manner, in order to reduce the overall cost of generation of a generating company, flexibility should be given to generating company to supply power from any of its generating station against schedule received for its stations and gains realized in the process could be shared with beneficiaries.

B. Need for Allowing Flexibility in Generation for cost optimization

(i) Optimisation in scheduling of generation to reduce overall cost of power at national level

We have already achieved "One Nation, One Grid, One Frequency and at present on most of days One Price in the electricity Exchange". The Electricity Grid had evolved from local grid to State level grid and then to Regional Grid and finally National synchronous electricity Grid. Indian Electricity Grid is also connected to other countries (Bhutan, Nepal and Bangladesh) to gain international character. Accordingly, with the constraint free robust transmission grid in place, time has come to move ahead from regional level scheduling to National level optimization in scheduling of generation.

At present the Discoms/ States tie-up for supply of power from various power stations/ generating companies. States generally requisition power from a station on day ahead basis considering its merit order among all the stations from which it has power tie-up. However, on a national level, it is seen that many stations having low Energy Charge Rate (ECR) are not fully scheduled whereas the costlier stations are scheduled at the same time. The needy beneficiaries are not able to schedule power from stations having lower ECR as