



एन टी पी सी लिमिटेड

(भारत सरकार का उद्यम)

NTPC Limited

(A Govt. of India Enterprise)

केन्द्रीय कार्यालय/Corporate Centre

September 5, 2019

To,
The Secretary,
Central Electricity Regulatory Commission
3rd and 4th Floor, Chanderlok Building,
36, Janpath,
New Delhi- 110001

Subject: NTPC's Comments on the proposed framework for "**Real Time Markets for Electricity**"

Sir,

Please find enclosed NTPC's Comments on the proposed framework for "**Real Time Markets for Electricity**".

Thanking you,

Yours Sincerely,

(Ajay Dua)
GM (Commercial)

As enclosed

NTPC Limited

Comments on the Proposed Real Time Market Framework

1.0 Introduction:

With the proposed Amendments, Hon'ble Commission proposes to introduce half hourly Real Time Energy Markets in the country. This is much desired to meet the energy requirement in the real time and will be beneficial for both the generators and the distribution utilities.

2.0 Comments on the Proposed RTM Framework:

i) Forced Outage of Units:

One of the major risk for the generators is Forced Outage of units. As per the current Regulatory provisions, generator is able to revise its DC from 4th time blocks onwards. In the process, the generator is liable for DSM payment for the intervening 2-3 time blocks, in which the DC/SG remains unchanged, but actual generation becomes zero.

In the proposed mechanism, revision in schedule will be made applicable from 7th and 8th time block onwards, depending on whether the revision is made in the odd or even time block respectively. During this period there will be no revision in DC/ Schedule and the units will be subjected to DSM payments. This increases the risk for the generator due to unit tripping from the current 2 - 3 time blocks to a period of 5 - 7 time blocks.

Illustration:

a) Existing Provision:

In case of unit outage, revision in schedule will be applicable from 4th time block onwards counting the block in which the unit trips as the first block.

So, If a unit trips in the time block of 22:00 to 22:15 Hrs, the schedule can be revised from 22:45 Hrs onwards. So the Deviation charge becomes applicable for a period of 30 to 45 minutes depending on whether the unit trips at the starting or end of the 22:00 to 22:15 Hrs time block.

b) New Provision:

Revision in schedule is applicable from 7th and 8th time block if the revision is made in the odd and even time blocks respectively.

So, If a unit trips in the time block of 22:00 to 22:15 Hrs, the schedule can be revised from 23:30 Hrs onwards, this being an odd block. So the Deviation charge now becomes applicable for a period of 75 to 90 minutes depending on whether the unit trips at the starting or end of the 22:00 to 22:15 Hrs time block.

This Deviation charge will become applicable for a period of 90 to 105 minutes, if the unit trips in the next block i.e. 22:15 to 22:30 Hrs (odd block) as the revision can now be applied from 00:00 Hrs onwards.

At Clause 3.1.11 of the Explanatory memorandum, it is mentioned that in case of Forced Outages, generators can participate in the Real Time Market and buy power for the beneficiary to honor its commitments. But this provision cannot be used once we are inside the Gate Closure time period, as the market would be closed for this period. Beyond the Gate Closure period for stations having long term tie up the DC would be revised to Zero, so there will be no need for buying power from the market to meet the commitments. Such stations can utilize this provision only during the time when the unit trips during the block when auction takes place. As during this time, the provision of revision in schedule would have ended but the market option would be still available for the delivery period (30 minutes). In any case, DSM will be applicable for the intervening 4 time blocks.

It is submitted that the existing provision of 4 time blocks for applicability of DSM charges may be continued in case of forced outage of units.

However, this provision may still be useful for power scheduled in Power Exchanges in the Day Ahead Market. When power gets sold in the Power Exchange, the schedule becomes firm and outage of units has DSM implications. The generating station which would have cleared in the DAM, may participate in the RTM to buy power through bidding.

However in such cases the settlement mechanism needs to be specified. The necessary amendments in the IEGC and DSM Regulations may have to be done for introducing this provision. At the same time for enabling buying by the generators, withdrawal charges has to be notified at the generator end.

ii) Revision in Schedule should be achievable:

For ISGS with power tied up on long term basis, this RTM mechanism will be useful for utilization of the URS power. With this new framework, available URS power can be offered in the RTM auction. It is submitted that the following may be considered while finalizing the schedule of the stations after completing the RTM auctions:

- a) The revision in schedule should consider the ramp rate of the generating station. Many times substantial quantity of URS power is available with generators, which while offered in the RTM may result in sporadic clearing. It may happen that in one block the URS cleared in the market is zero, while in the next block, it may get cleared fully. So in such cases, there will sudden jump in the schedule, which may be more than the achievable ramp rate of the stations. It has been seen even in cheaper stations like Vindhaychal, Rihand and Singrauli the quantum of URS power can be as high as 300- 500 MW. As per the timelines mentioned in the proposed framework the final schedules can come at the last minute itself with no time for generators to achieve the schedule. This is also an issue in the URS sale mechanism in the Day Ahead Markets.

So NLDC while clearing the schedules should consider the ramp rates of the generators so that the schedules are achievable. Other possible solution to this could be a multipart bidding framework, where the generator would also submit its ramp rate also while bidding and the same may be considered while deciding the cleared volume.

In the proposed framework, 3 time blocks have been kept for schedule preparation and communication purpose. Instead of this, ***the scheduling and communication should be completed within 2 blocks and minimum one clear time block (15 min) should be kept as a preparatory block to prepare the machine by cutting in / out Coal Mills, other required auxiliaries & stabilization of Boiler furnace for desired injection so as to maintain the schedule.*** This will also help to address the issue of Ramp rate to a large extent, as the generator will be prepared to meet the schedule beforehand. The communication of schedule at the very last moment is also a recurrent issue in the SCED operation, which affects the stations adversely.

During the last block before actual delivery, schedule shall remain firm and load generation balancing shall only be carried out through secondary control in the form of AGC.

iii) Implications on RRAS and SCED Mechanism:

The implementation of RTM should bring in merit order operation by default, as the cheaper stations would be first scheduled by the beneficiaries and the leftover quantum will automatically come to the RTM auctions and get cleared in order of marginal cost stacking order. The only factor affecting the least cost solution for the system will be technical minimum operation of the stations which are required to operate in the peak hours, which has to be considered in any case. However this problem becomes significant as the technical minimum limit of operation of most of the state gencos is around 75%.

- 3.0 The proposed RTM framework envisages round the clock market operation at a massive level involving Generators, Distribution utilities, Traders, Market Operators etc. This will involve investment of resources in terms of development of IT infrastructure, deployment, training and skill development of people to carry out round the clock bidding. Hence sufficient time should be given before the proposed mechanism is rolled out. Before large scale implementation of the mechanism, sufficient training should be given to the people at various levels.