

Comments on Discussion Paper on Re-designing Real Time Electricity Markets in India

The redesigning of the Real Time Electricity Market in India is a step in right direction which will help supply of quality power in cost economical manner at the same time bring discipline in forecasting, scheduling and dispatch of power. As has been recognized in the discussion paper, the real time market exists, on a regional basis, today in form of intra- day trading products in the power exchange, but there volumes traded and number of participants are very less. The discussion paper though recognizes this, does not analyses the reasons for the lack of depth in the intraday market. The proposed Real Time Market (RTM) to succeed, there are some prerequisites i.e. these changes need to happen however cannot be introduced through the market regulations but through various regulations at the state level.

1. Accurate and dynamic demand forecasting

The distribution companies need to forecast demand on 15 min basis very accurately and in a dynamic manner throughout the day. Such dynamic forecasting would include the revision of demand in real time basis and revisions of generation primarily due to renewable sources and the estimation of residual demand / surplus which can be traded in the RTM

2. Decision making in utility

For the RTM to be effectively utilized by the discoms, the decision to trade power in RTM needed to be taken in a dynamic manner throughout the 24hrs. The Discoms will have to create the procedures and approvals to enable such decision making. The draft paper has recognized this aspect; a model procedure may be prepared and discussed/submitted to Forum of Regulators.

3. Obligation to supply 24x7 power

The underline objective of dynamic demand forecasting is to meet the obligation to supply power. Unless this obligation is mandatorily adhered to by the discoms, RTM will not have the necessary depth, which is indicated by lack of participation in the regional intraday market today.

Specific comments on the discussion paper

1. Gate closure and revision of schedules

The discussion paper proposed to introduce the concept of gate closure and it is proposed that the gate closure will happen six time blocks before the delivery i.e. for power delivery in the time block of 02:30 the gate for revisions of schedules is closed at 01:00. In proposed RTM scenario the regulations/procedure will have to clearly spell out how and till what time the revisions (under LTOA/MTOA/STOA) will be allowed, the present paper does not provide the clarity. Thus a clarity about till what time before the delivery the day ahead schedule can be revised is need to be included in subsequent documents.

2. Reduction in gate closure time

It is not clear from the discussion paper where it is mentioned that the gate closure time would be progressively moved nearer to real time. This gate closure is presumably for the closure of RTM and not the gate closure for rescheduling of day ahead schedules. If gate closure time for revision of day ahead schedule is reduced, which will then allow revisions of day ahead

schedules, it would result in reduction of participation in RTM. It is thus suggested that the gate closure time for revision of day ahead schedule should not be reduced but increased to an optimal level.

3. Renewables in the proposed RTM

The discussion paper has three scenarios to illustrate the working of proposed RTM, two of the scenarios are about variation in generation from renewables. It is suggested that, the specific provision for wind and solar generation in the IEGC 2010 and DSM regulations are adhered to. **The scenarios gives an impression that the provisions allowing revisions in the grid code and $\pm 10\%$ variation band in which the wind and solar generators do not have to pay/receive DSM charges would not be available once the RTM is operational.** Especially the following part of the scenario 1 which can result in confusion:

- In real-time, significantly less wind is produced than was scheduled
- Wind produces 50 MWh, so must purchase 30 MWh from real-time market at INR 9000/MWh

Similarly the scenario 2 mentions that

- Intermittent resource produces 80 MWh, which implies that it sells 30 MWh in real-time market at INR 2000/MWh
 - Low real-time price because of unexpectedly large wind output
- Thermal resource buys back 30 MWh in real-time at INR 2000/MWh

This gives an impression that any shortfall/surplus generation in real time needs to be compensated by procuring/selling equivalent power. **The real time variations are to be addressed through the DSM and not through RTM. The scenarios thus need to be carefully reworded and clarity to be provided that existing DSM** regulations would be unaltered. The forecasting and scheduling for wind and solar generation was introduced in grid code in 2010 however the same is yet to be replicated and operationalized at state level. Thus any further changes or altering the current provisions would make it difficult to implement the same at operational level. As and when these provisions are to be altered, the same should be done prospectively i.e. the projects which are already commissioned are either kept out of such changes or compensated for financial implications. This is required as all the new procurement from wind and solar projects is now in open competitive basis and any change in the regulations which has financial implications on the generator, the generator needs to be compensated for such implications.

Further, the illustrations imply that Thermal units have to buy in case of higher wind output. Such buy should not be compulsory as the generator may not be willing to purchase particularly when the rates are too high since the thermal unit is maintaining his schedule and thus should not be asked to compulsorily participate in RTM.