

Comments on CERC Discussion Paper on Market Based Economic Dispatch of Electricity: Redesigning Day-Ahead Market (DAM) in India

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In December 2018, the Central Electricity Regulatory Commission (CERC) released a discussion paper on redesigning the DAM in India using market based dispatch of electricity. Currently, for the day-ahead dispatch, discoms self-schedule their generation from their portfolio of contracts to meet their expected load. The paper proposes to replace this system of self-scheduling by pooling all generation and carrying out a centralized dispatch based on bids in each time slot by the generators. The paper argues that this would lead to a reduction in overall cost because under the current self-scheduling system, lower cost generation capacity lies idle while higher cost generation gets scheduled.

CERC's efforts to improve the efficiency of dispatch through centralized dispatch are welcome. However, it is important to remember that in order to have a truly efficient wholesale electricity market, of which DAM is one component, we also need efficient and effective fuel markets. In addition, there are two features of the wholesale market framework that must also be included before making a change to the proposed DAM design. The first such feature is the need for effective market monitoring to ensure that there is no manipulation of the price through the exercise of market power. The second feature required is a framework for allocating transmission rights and the pricing of transmission. We discuss these issues in the comments below and also discuss some issues regarding open access consumers and captive power where greater clarity in the regulations would help.

Effective Fuel Markets are a Pre-Requisite for Effective Wholesale Electricity Markets

While focusing on redesign of the DAM, it is important not to lose sight of the bigger picture of effective wholesale electricity markets, of which DAM is one component. While redesigning DAM as proposed may lead to some economic gains, a truly effective and efficient wholesale electricity market would not be possible without effective and efficient fuel markets, particularly coal. There are multiple channels by which power plants get coal, with a bewildering array of pricing regimes. The quantity of coal supplied and the price that a power plant pays for the same grade of coal at the same location could be very different depending on several factors: public or private ownership; commissioning date of the plant; having or not having a power purchase agreement (PPA) with a distribution company (discom); having an allotted coal block; or winning an auctioned coal block. With such a deeply fragmented coal market, it is almost impossible to have real competition in the power sector. We recognize that this is an issue that is beyond the control of CERC only, and requires concerted effort of several parties, but it is important to keep this in mind as we consider markets for electricity.

Need for Effective Market Monitoring

In the proposed market design, it may be expected that generators that are under PPAs with discoms will bid at their variable cost. However, merchant capacity could bid at a price higher, and sometimes much higher, than its variable cost. The incentive to do so will be higher when a generator has market power and can determine the clearing price. It should be noted that even a generator with a small market share can exercise market power in a load pocket due to transmission constraints, at least at certain times. At such times and locations, the clearing price could be much higher than economic principles would predict.

CERC recognizes this concern about market power and the discussion paper says, “The Commission recognizes the need for strengthening the market monitoring and enforcement and is already working in this direction.” This proactive approach of CERC is commendable. It is important that the market monitoring system is developed and deployed simultaneously with the new design of the DAM. Otherwise, instead of economic gains from centralized dispatch, we may see large losses. It could be worse; the market could collapse as happened in California in 2000.

Effective market monitoring is both an art and science requiring both analytical skills and judgement. Excessive suppression of prices during periods of shortage could result in inadequate incentive to power plant developers to build new capacity, leading, in turn, to shortages of capacity. All states in the US that have introduced retail competition, except Texas, have decided to introduce a capacity market to respond to this insufficiency of incentive for new capacity. Our understanding is that India is planning to have an energy only market such as in Texas, and therefore attention needs to be paid in India to the balance between controlling prices and providing sufficient incentives for new capacity.

Need for Transmission Rights and Pricing to be Consistent with DAM Design

In paragraph 5.1 through 5.8, the discussion paper presents an example of how payments will be made when there is congestion and market splitting. The paper shows how the congestion amount will be sufficient to pay the bilateral contract holders if the contracted capacities to be transferred across the congested points do not exceed the network capacity at that interface. However, the paper does not discuss what would happen if the network capacity at the interface is insufficient. More generally how will Financial Transmission Rights¹ (FTRs) be allocated? Will they be auctioned or allotted? Apart from FTRs and congestion amounts, how will transmission be priced? Will it continue to be priced the way it is currently? The transmission allocation and pricing framework must be consistent with the DAM design and must be established and implemented when the DAM design is implemented.

Open Access and Captive Generation

It is not clear how the proposed DAM design will deal with open access transactions and captive generation. Will they be treated just like other bilateral contracts? Will open access consumers and

¹ Financial Transmission Rights do not provide a physical right to transmission but give a right to the holders of a share of the congestion amounts.

captive generators also have to obtain FTRs if their transactions are likely to cross a constrained interface? These issues need to be clarified.

Conclusions & Recommendations

- Efforts by CERC to improve efficiency of dispatch are welcome.
- Efforts to improve the efficiency of wholesale electricity markets must be preceded by, or at least accompanied by, reforms in the fuel markets (particularly coal) to make them also efficient.
- An effective market monitoring mechanism must be developed and deployed simultaneously with a revised DAM.
- Allocation of financial transmission rights and pricing of transmission must be consistent with the DAM design and must be implemented simultaneously with the new DAM.
- CERC should clarify how open access transactions and captive power will be dealt with in the new DAM.