

05-09-2019

To

Sh. Sanoj Kumar Jha, IAS
Secretary
Central Electricity Regulatory Commission
3rd & 4th Floor, Chanderlok Building,
36 Janpath, New Delhi - 110001

Dear Sir,

Sub: Comments on 'Proposed framework for Real-Time Market for Electricity'

This is in reference to the public notice issued by CERC on 'Proposed framework for Real-Time Market for Electricity' dated 06.08.2019 pertaining to the No.RA-14026(11)/2/2018/CERC inviting comments from stakeholders on the same.

Working on Energy Market Analytics space and advising various players on Power Trading and Market Participation, we see the need for introducing Real-Time Market so that more flexibility could be achieved. The move by the Commission and IEX is appreciable, and would increase India's Spot Market maturity.

Our comments on the said notification are elaborated under Annexure-1 enclosed herewith. Kindly consider our views in consideration of the market interest.

Yours truly,



Nitin S Srivastava

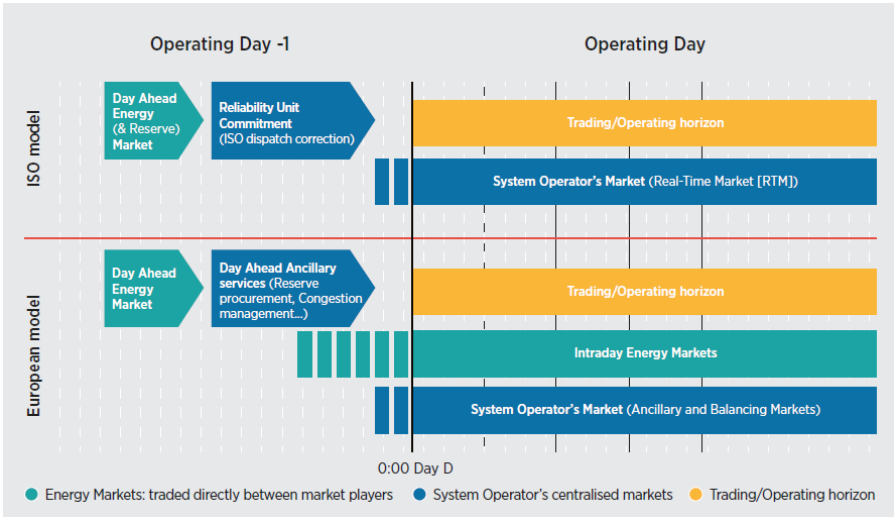
Lead- Business Development

About EMA

EMA Solutions Pvt. Ltd (EMA), is a technology focused New Delhi based startup firm, recognized by GoI under the flagship 'Startup India Scheme' (No: DPIIT34787), and is the first and only startup firm in India's Energy Analytics Space, aimed at offering new-age Analytical, Big-data & AI, Trading Technology, Robotic Process Automation, Market Advisory and Knowledge solutions to Energy & Power Markets.

Our team has a diverse and suitable collective experience of around 30 years in areas of Power Market Design, Power Trading & Advisory, Generation & Demand Forecasting using AI & Statistical Models, Portfolio Management of Discoms and Generators, Power Plant Management, SLDC Operations and Big Data Analytics & AI, with organisations like NTPC, IEX, Mercados EMI and Blue-Lotus.

ANNEXURE-I

Reference/ Subject	Views / Comments
<p>What market product are we referring to? ‘Intraday Market’ or ‘Real-time Market’?</p> <p>Ref: Amendment 2.5 in Draft Power Market 9Second Amendment) Regulations, 2019 pertaining to definition of ‘Real-time Contract’ and ‘Real-Time Market’</p>	<p>Globally, there are two wholesale electricity market designs, 1) US/ISO Model, and 2) European/PX Model. Major difference between the two models is the degree of separation between Market Operator and System Operator, which in turn influence the underlying market features and characteristics.</p> <p>As an aspect of market design, Real-Time Market (RTM) is a feature of ISO Market Model (US), while Intraday Market is a feature of PX Market Model (European), and there is no power market in the world with both Intraday and RTM. The reasons are obvious, if design features, utility and control structure are studies for these markets.</p> <div style="text-align: center;">  </div> <p><i>Fig: Spot Markets in two market designs (Source: IRENA 2017, Adapting market design to high shares of VRE)</i></p> <p>In the ISO model, System Operator is also the Market Operator, and is actively involved in the market aspects, especially Real-Time Market, which is the System Operator's Market wherein market resources are purchased or sold by the system operator, with simultaneous procurement of reserves/ancillary services.</p> <p>On the other side, Intraday Market (can be Auction based or Continuous Trading) is a feature of European model, which involves major de-coupling of System Operator and Market Operator's responsibilities, with System Operator responsible only for aspects of reliability. With 'gate-closure' delated so as to maximize the range of market, and provide the market participants with opportunities to modify and match their portfolios based on economic considerations. In this model, System Operator, post closure of Intraday</p>

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	<p>Market (Gate-Closure), uses Ancillary and Balancing Market mechanisms (in our case, RRAS and DSM) for procuring operating reserves.</p> <p>It is evident from the proposed market design by CERC for RTM that the same is based on European Model of 'Intraday Market'. Give that we already have a market called 'Intraday Market' which is based on 'Continuous Trading', our choice to go with a 'Auction' based Intraday market (termed RTM by CERC) should not be confused with the Real-Time Market of ISO Model. As such, being an educated market, it is suggested that we should aptly call the market 'Intraday', as against the current usage of Real-Time Market (RTM).</p> <p>Also, there is no need for a 'continuous trading' based Intraday market, if 'Auction' based Intraday market is launched. This is not a logical feature of any market design, and creates unnecessary confusion (increases complexity) for market participants, creates arbitrage and gaming opportunities.</p>
<p>Increasing bidding complexity with RTM (Intraday – Auction) for market participants requires automated and simplified bidding terminals. API access to be mandated for PX matching engines.</p>	<p>Bidding in DAM involves many complexities, one among them is the complexity in preparation of single-bids, which have multiple price and volume ticks for each time block, error in any may result in rejection of the entire bid or losing in volume selection. As such bidding activity is a time taking and complex activity.</p> <p>World over, for stock, commodity, energy and power exchanges, it is a common practice to permit Technology Firms and Traders/Members to have access to its matching engine through API, so as to enable them manage scale and speed in trading on behalf of its clients, using customized trading terminals suited to respective needs, as an alternate to PX Trader Work Stations(TWS). In India, Stock and Commodity exchanges permit their Members to have trading access through API. Internationally, Power Exchanges like PJN, EEX, NordPool Spot, APx, etc offer API access to their members, giving authorization to qualified technology companies to offer their services.</p> <p>Given the increasing complexity in Indian power market, with multiple products and round-the-clock trading, it is suggested to provide regulatory provisions to mandate Power Exchanges to provide API access to their Trading Engines, so that technology firms can develop advanced and customized Trading/Bidding Terminals for use by Members and Clients.</p>
<p>National Open Access Registry (NOAR) a pre-requisite for RTM (Intraday – Auction) implementation</p>	<p>RTM (Intraday-Auction) is going to increase operational complexity for market participants (Traders, Buyers, Sellers, Exchanges, Clearing Banks and LDCs). Automation and digitization of the key manual and time-consuming process, especially pertaining to Open Access process are to be dealt with and resolved, post which implementation of RTM could be taken up.</p>
<p>Transmission Corridor Availability (ATC) to be</p>	<p>RTM is the market of last resort for market participants, post which the gate-closure is declared, thereafter leaving no option to make schedule changes.</p>

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<p>declared to all participants, before RTM bidding hours</p>	<p>As such, trading in RTM is a critical factor, with decision making in bidding to be made with high certainty with clear information on market conditions. If transmission availability for the respecting trading time blocks is not known, this may result in improper bidding and creates uncertainty in selection. As such, it is utmost important for RTM market participants to be provided with ATC information at the time of bidding. It is to be made mandatory for NLDC to declare corridor and time-block wise net ATC (post consideration of all transaction till the declaration time) to the market.</p>
<p>Transmission Allocation between Power Exchanges</p>	<p>It is proposed in the draft regulation that transmission corridor between Power Exchanges to be allocated in the ratio of their shares in the cleared volumes in the day ahead market subject to a minimum of 10% of the available capacity to the power exchange having smaller share. It is possible that a Power Exchange may decide to not operate in DAM, and may only operate in TAM or RTM or REC etc. Also, it is not mandatory for Power Exchanges to operate DAM. Also, DAM and RTM (Intraday) are two different segments and a neutral and equity based transmission allocation mechanism is to be devised, as against the proposed mechanism in draft regulations.</p>
<p>Provision for Beneficiaries to Sell their share in Generators directly in RTM & DAM (Beneficiary Discoms to be financial Members for Generators)</p>	<p>Discoms, through LT PPAs, are the owners of electricity generated from Generators to the extent of contract capacity. Discoms take the risk of off-take, and pay capacity charges to the plant to the extent of their ownership. As such, being the owners of power generated from the plants, Discoms should be given rights to sell un-scheduled power from contracted power plants on Power Exchanges (DAM, TAM, RTM) by being the trading and clearing member of such plants on PX and place sell bids of such generators (clients), there by giving provision to Discoms unlock substantial value from the stranded assets/backed down generation. The current provision of 50:50 sharing if generator sells at a profit may not serve the Discoms well, as Generators are not the owners of the power and may not take effective calls to maximize profit from the market. Also, it is a practice in commerce of any commodity to give the right to buyer to re-sell from the point of delivery itself.</p>
<p>In line with introduction of RTM, DAM Trading to be shifted to post-noon hours, so as to enable Discoms efficiently assess supply-demand position and take trading calls in bidding</p>	<p>At present DAM bidding is from 10:00 am – 12:00 pm, a two hour window to trade for the next day. Over time, importance of this market has increased for management of peak and supply uncertainty by Discoms. Around 60-70 % of participants in DAM are Discoms (both on buy and sell side). Discoms have to assess supply availability from a multitude of suppliers (central, State, IPPs) for next day by 10 am, as well as assess demand, in addition to open access consumers, and then take a call on bidding in DAM for next day. As most generators provide availability estimates by 10 or 11 am, it is a time-critical exercise.</p> <p>Considering that Power Exchanges and NLDC/RLDCs are capable to complete the entire process cycle of trading, clearing & settlement, and scheduling in a span of around 2 hours for RTM, it is evidently clear that the procedural and processing bottlenecks which were present 10 years ago</p>

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	<p>at the time of creation of Dam are smoothened and overcome with technology improvements.</p> <p>As such, it is proposed that the commission may consider the practicality and necessities of market to move closet to delivery (considering that demand and RE generation can be better forecasted) and move the DAM bidding to 12:00-14:00 hrs daily, without any change in current scheduling time of 18:00 hrs by decreasing the DAM processing cycle time of Power Exchanges and NLDC. Such a move will improve in effective finalization of LT Availability & Requisition exercise, reduce DAM schedule revisions due to force-majeure events, improve efficient demand management by Discoms through effective forecasting, improve RE offtake and participation in Dam and optimal management of DSM.</p>
<p>Bid Formats for RTM (Intra-day Auction)</p>	<p>European Power Exchanges with auction based Intraday Market have high incidence of Block Bids, given their ease of bidding and selection criteria. But Block bids are not efficient in social welfare maximization, and are not actively promoted. Even European Commission is of re-thinking the usage and provision of block-bid and other bid types for Intraday (in EUPHEMIA) recently. As RTM (Intraday) is the market of last resort, bid formats should facilitate effective risk management by participants, as unlike DAM, selection risks in RTM could not be managed further with any following market provision, as gate-closure is followed.</p> <p>It is suggested to have specific bidding formats for RTM (Intraday) based on plant-type which will take respective technical and operational parameters in bid selection and pricing. Bid formats of DAM may not be suited for RTM. International experience in this regard to be explored.</p>