



Public Hearing – Draft Amendment to CERC (Deviation Settlement and related matters) (4th amendment) Regulations 2018

Observations & suggestions from Power Exchange India Limited

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POWER EXCHANGE INDIA LIMITED

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PXIL Observations

Overview



- In the core of the proposed amendment lies the linkage between the DSM price vector to the prices discovered in the organised power market i.e. power exchanges, to address the critical issues identified in the current DSM Price Vector.
- The principle of developing a reference for determining the DSM Price Vector is a step in the right direction and is thus welcome and encouraging.
- At the same time, the DSM mechanism should
 - ✓ retain its attributes towards grid discipline
 - ✓ Not serve as a proxy to organized markets
- Our submissions consider following broad areas:
 - ✓ Nature of proposed linkage and its relevance to system operation in light of DSM being a disciplinary tool
 - ✓ Inculcating prudent behaviour in the participants by way of incentives and penalties
 - ✓ Difference in the market segments and ability of proposed linkage to alter the nature of market segments

PXIL Observations

Principles of DSM



- Extracts from Past Amendments, SoR and Transmission report
- Deviation Settlement Mechanism
 - ✓ *“....(b) Imposing limits on UI injection/withdrawal and making its **truly inadvertent interchange**; and...”*
 - ✓ *“....Since the **UI mechanism shall no longer to act as a market mechanism it is also proposed to adopt a new Regulation in place of UI Regulation...**”*
 - ✓ *“....Contrary to the PXs, **UI market ignores willingness of entities, capacity to pay, value of lost load for entities.....**”*
 - ✓ *“.....There is merit in the NLDC suggestion of linking UI with area clearing prices in the Power Exchanges. However, **the real time grid operation scenario may be significantly different than the day ahead scenario in the PXs due to load crash or major generation outage or any other unforeseen circumstances. Further, the UI mechanism is not to act as real time balancing mechanism. It is now proposed to convert the UI mechanism as a purely grid discipline mechanism as intended ab initio.....**”*
 - ✓ *“....However, **the UI charges or the charges for the deviation should be sufficiently high to persuade the entities to go for scheduled transactions rather than unscheduled deviations...**”.*

PXIL Observations

Price Vector



- DSM Price Vector
 - ✓ Needs to remain a regulated vector, as it is not a market instrument but a disciplinary tool for efficient and reliability in grid operations
 - ✓ is stated to be static in terms of its firm definition. While the vector has always been static, it has produced dynamic results due to its linkage with frequency, distributed and diminished market power of the individual constituent to control the frequency etc.
 - ✓ By changing the referencing of the DSM Vector to market clearing prices and the other contours (slope, additional surcharge, volume caps etc.) remaining the same, the vector would still remain static. **It is only on the temporal scale that the vector will be revised from current few years to daily basis.**
 - ✓ This daily revision may lead to high volatility in volume with the absence of predictability in vector.
 - ✓ **Nevertheless, the inadvertent nature of the DSM transactions would definitely be affected, as predictability aids planning and any change in predictability is likely to promote ambiguity.**
 - ✓ The need for frequent revisions in the base rate for the vector can also be addressed by defining a periodicity for revision in the base rate by POSOCO on semi-annual basis or with any other suitable periodicity as is being followed in case of loss calculations.

PXIL Observations

DSM Vs Real-time



- Interplay between segments
 - ✓ The interplay between the market segments does not exist in first place, as the DSM mechanism is neither a market segment nor it is intended to be one.
 - ✓ DSM is a mechanism to account for the **inadvertent exchange** between market participants and not a real time balancing mechanism. **It is post facto mandatory settlement of deviations without taking into account the willingness of entities, ability to pay etc. and not transactions in electricity on very short notices.**
 - ✓ As a disciplinary tool, it has devised a commercial mechanism for incentivizing market participants to sufficiently induce them for lower and lower deviations from schedule.
 - ✓ The real time market (called real time colloquially) is a market for transactions as close as allowed before delivery. Currently, in our grid code, the least count for downward revision in schedules on the request of a seller is 6 time blocks or 1.5 hours whereas on the exchanges the contracts can be scheduled 3 hours ahead of delivery.
 - ✓ **As a matter of correlation between segments, the prices at which deviations are settled should be considerably higher than the prices at which markets are transacting to create a deterrent and a commercial barrier towards deviations.**

PXIL Observations

DSM Pricing



- Pricing of the DSM Vector
 - ✓ The DSM prices, as a deterrent, will always have a bearing on the other markets.
 - ✓ Referencing of the prices to the market discovered prices may compromise on the disciplinary nature of the prices coupled.
 - ✓ The prices of the DSM vector are supposed to sufficiently encourage the market participants to refrain from dis-balancing the grid and also to help them gravitate towards organized markets.
 - ✓ **DSM is not meant to provide a price signal but has to be a price deterrent towards large deviations.**

PXIL Observations

DSM Operational aspects



- Operational aspects of DSM
 - ✓ The DSM vector operates on frequency and therefore, the true operation is due to a combined effect of the frequency, its rate of change, variation etc.
 - ✓ As part of system operation, the grid frequency has to necessarily remain within the allowed band at all times.
 - ✓ The prices discovered in the exchanges during peak hours may not be the true reflection of demand in the system, as wholesale participants have adopted Time of Day (ToD) tariff to flatten the demand curve during peak hours and reduce their need to procure in day ahead spot market, on a regular basis.

PXIL Observations

DSM Coverage



- Coverage of the DSM Vector
 - ✓ The DSM Vector captures the energy charges of the **regulated** generating stations, both on the lower side and the higher side.
 - ✓ The day ahead prices, even though are energy only prices, do not define a range to cover the entire spectrum of generating stations.
 - ✓ **Referencing of the day ahead prices, as proposed in the amendment, accepts this anomaly and proposes a regulatory cap on the higher side. As a principle of design, the range of the vector should have same underlying across the range. Two, the applicability and range, as has been implicit in the current design, may be continued in the proposed referencing.**
 - ✓ The proposed pricing of the vector to have a linkage with day ahead prices at 50.00 – 50.01 Hz, assumes that the pricing is discovered for a balanced grid which accounts for congestion. But, as has been mentioned earlier, the actual operations and assessment/anticipation of congestion, may differ significantly, leaving no incentive for the buyer to plan in advance as whatever was discovered in day ahead is available in DSM at 50Hz.

PXIL Observations

DSM Applicability



□ Applicability of Vector

- ✓ The DSM Vector is applied uniformly to all the regional entities in the grid as a disciplinary tool.
- ✓ The system operation, in real time, is oblivious to the type of contracting (long term, medium term and short term), nature of transaction (voluntary or regulated).
- ✓ The procedure for relieving congestion in real time also re-dispatches open access transactions first before any other.
- ✓ The DSM vector was also defined based on energy charges of regulated (long term) entities.
- ✓ As design and operational framework were therefore intertwined and based on same principles (long term, followed by open access in operations and long term defining the range of the vector).
- ✓ **The proposed linkage disturbs this linkage and creates a confusing/mixed alignment between applicability, range and operations.**

PXIL Observations

Social Welfare Maximization



□ Price Discovery in Energy Exchanges

- ✓ The Power Exchanges are regulated to follow the principle of social welfare maximization for their price discovery, which augurs well with the voluntary nature of participation.
- ✓ The DSM is a disciplinary tool and therefore, mandatory in nature. The price has to work as a deterrent.
- ✓ As per the Market Monitoring Report, a significant contribution in cleared volumes, and therefore, in price discovery is by entities which are not regional entities.
- ✓ The price discovery is designed to capture the residual transactions and is currently driven by open access transactions.

PXIL Observations

- Conclusions, summary & recommendations
 - ✓ The proposed linkage of the DSM vector, to the prices in day-ahead market as have been proposed in the draft regulations, is likely to create ambiguity, implicitly push higher volumes in DSM and assure higher realization to the regulated generating stations.
 - ✓ This may lead to compromise on the principles of secure and reliable grid operations, as have been built by the System operators over the last few years.
 - ✓ **The evaluation of the proposed linkage may be carried out on sufficiently larger period, as compared to the sample study in the report, considering past periods and also in parallel to the existing methodology, to capture the likely outcome, which are then evaluated prior to any implementation.**

PXIL Observations

- Conclusions, summary & recommendations
 - ✓ **The proposed linking the DSM price vector to prices emanating from a small part of the overall power market may potentially push the DSM mechanism to act as a proxy for real time market.**
 - ✓ **We submit that the DSM mechanism be made more robust by rationalizing the price vector and volume caps to disincentivize mis-utilization by grid connected entities and to ensure that the DSM mechanism is not used as a proxy for a real time market.**
 - ✓ Furthermore, the vector can be broad based on parameters other than frequency which aid towards safe, secure and reliable grid operation.

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