



CERC: Staff Paper on Regulatory Oversight on Bidding Behaviour in Power Exchanges

CERC notified Central Electricity Regulatory Commission (Staff Paper on Regulatory Oversight on Bidding Behaviour in Power Exchanges) Regulations, 2024 on 4th May, 2024.

Objective: The Central Electricity Regulatory Commission (CERC) has prepared a Staff Paper on Regulatory Oversight on Bidding Behaviour in Power Exchanges, which outlines a proposed framework for monitoring and regulating bidding behaviour in India's power markets. The paper, which is not a formal CERC policy but rather a discussion document, aims to ensure fair and transparent market operations by addressing issues such as bid price manipulation and quantity withholding.

The paper discusses the current price discovery mechanism in collective transactions, which operates on a Uniform Market Clearing Price (UMCP) and Pay-as-Bid (PAB) system. It highlights concerns about the UMCP mechanism, particularly during supply shortages or high demand, and suggests the need for regulatory intervention to maintain market integrity.

To prevent market abuse, the paper proposes a screening process for both sell and buy bids. Sellers are required to declare variable costs and technical parameters, and an ex-ante screening mechanism would ensure that bids do not exceed a specified multiple of the Benchmark Supply Offer (BSO). An ex-post screening would use the Pivotal Supplier Index and Pivotal Supplier Test to evaluate bids for potential market manipulation.

For buy bids, the paper suggests limiting the total quantum bid to the residual Available Transmission Capacity (ATC) of the state to prevent excessive bidding at the price ceiling. This is intended to ensure that buyers' bids reflect their true requirements and marginal utility of consumption.

The paper also discusses the use of competitive benchmark models and simulation models to assess market power and the need for measures to incentivize demand response and energy storage systems.

In summary, the Staff Paper presents a comprehensive approach to enhancing regulatory oversight of bidding behaviour in power exchanges, with a focus on transparency, fairness, and efficiency in the electricity market. The document can be accessed [here](#).

CER Opinion

- 1. Market Monitoring Framework (MMF):** The evolutionary journey of the Indian power market has so far had limited regulatory oversight in terms of market monitoring. The Market Monitoring Report (MMR), published by the Central Electricity Regulatory Commission (CERC), is a market reporting exercise that is published with a significant lag. While it is a useful compendium of the market outcome and broad market power indices, there is an urgent need to set up a robust Market Monitoring Framework (MMF) with continuous monitoring of the market outcome as well as bidding and operational behaviour of the power system constituents. This should provide for timely analysis of bids on daily, weekly as well as monthly basis with clear set rules for identifying divergent market outcome and suspicious participant behavior for further analysis. A summarized report of such daily, weekly and monthly analysis should become an integral part of the MMR published by the CERC.

The MMF should ensure compliance with timely data disclosure by the power exchanges, trading licensees, generators, discoms, open access consumers as per a template /format to be developed



for the same. Such data compliance report should form an integral part of the MMR.

2. **Market Monitoring Committee (MMC):** The staff paper raises several important questions but lacks significant discussion on the institutionalization of market monitoring. To ensure effective oversight, a dedicated Market Monitoring Committee (MMC) be setup by the CERC. Such committee should hold quarterly meetings to discuss market outcome and suspicious behaviors of power system/market participants, especially those of the suspicious participant behavior for recommendation for further action.
3. **Market manipulation:** In the proposed staff paper section 4.2 (iv) states “*some DISCOMs have offered both sell and buy offers within the same bid in the same time block at varying prices. For instance, in the same time block (time block 44), a DISCOM offered to sell a low quantum (121 and 79 MW) at a low price (~Rs. 5/kWh) and put a high quantum buy bid (150 MW) at a higher price (Rs. 10/kWh) (refer Table 1)*”.

It is suggested that the Commission may set clear **guidelines for fare and reasonable bidding behavior of market participants**. Furthermore, transparency in terms of bidding data disclosure would help foster trust and accountability in the market. It is notable that some of the power markets disclose detailed trade bids after a lag of about a month or so. A beginning can be made by identifying dominant market players and impact of their participation on market outcome. The Commission should establish a formal mechanism for public disclosure of the analyses and reports. By doing so, the stakeholders can have greater visibility into market dynamics, enabling them to make informed decisions. This would also enable the Commission to hold the market participants accountable for their actions. This approach not only enhances market integrity but also promotes fairness and efficiency in market operations. Security and Exchange Board of India (SEBI)’s approach to market monitoring, surveillance, disclosure and penal action thereof provides an example to emulate.

4. **Bidding Data Collection Timeline:** In the proposed staff paper section 4.8. II (ii) states that “*Ex-post Screening - All the sell bids shall be evaluated by CERC for any possibility of market manipulation. The power exchanges shall be required to submit their bid order books to CERC for each month by the last day of every month.*”

It is suggested that date for data collection may be revised to 10th day of each month instead of last day of the month. This will ensure that the data collected reflects the actual generation costs incurred by the generator. This proposed change stems from the observation that generators routinely generate their invoice for preceding month by the 7th of the subsequent month (Figure 1), capturing the billing details for the month prior. By making this adjustment, the Commission can streamline the data collection process, ensuring access to critical information for analysis and decision-making purposes.

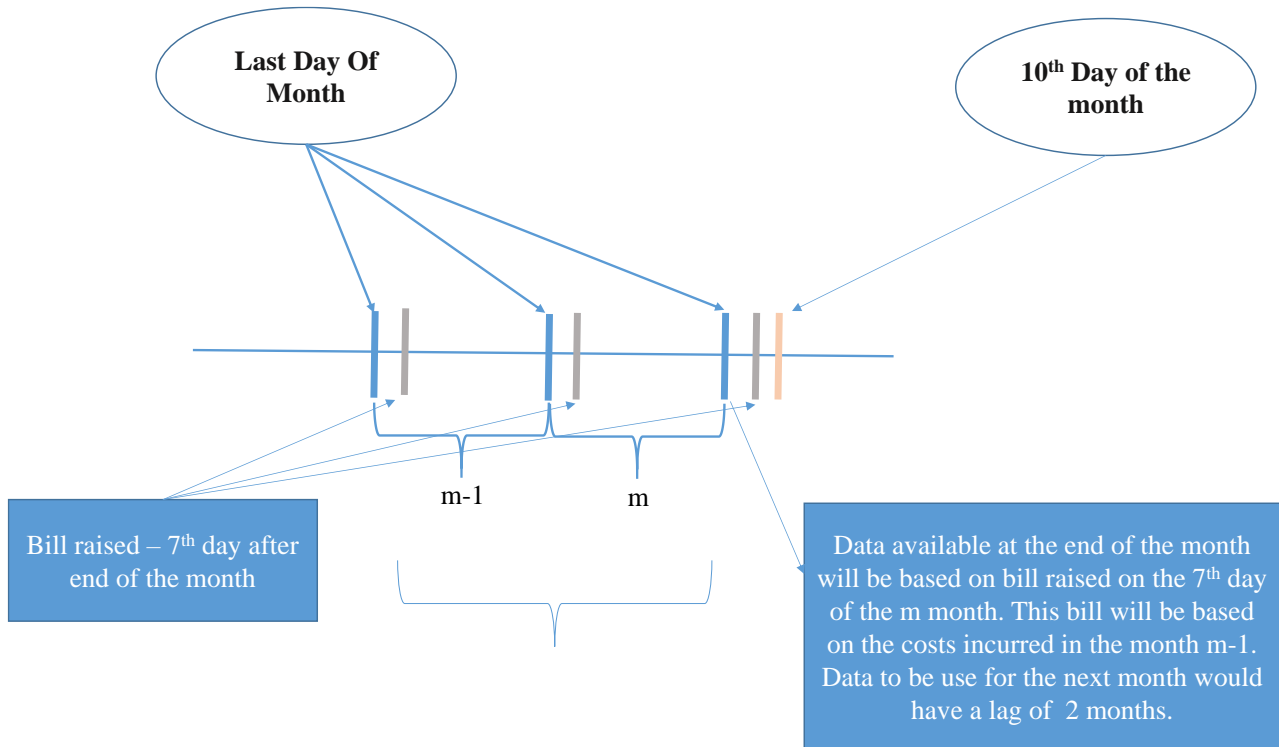


Figure 1: Timeline for the bidding data

The Figure 1 illustrates the timeline of raising of the bills by the generator and corresponding costs incurred by the generator.

5. **Proposed Framework for data collection for Bid Supply Offer:** In the proposed staff paper Section 4.18 (i), (ii), (iii), (iv) & (v) states that “*The above-discussed mechanism of market screening would broadly involve the following:*
- i. *All suppliers shall be required to declare their variable costs to the designated agency on a monthly basis.*
 - ii. *The designated agency shall develop and host software to verify the declared variable costs against the estimated variable costs of the merchant suppliers.*
 - iii. *The introduction of software by Power Exchanges for evaluating sell bids and buy bids before feeding them into the market clearing engine.*
 - iv. *Power Exchanges shall be required to submit their order books to CERC for each month by the last day of each month.*
 - v. *Development of APIs by Power Exchanges, through which the results of the market monitoring screen can be shared with CERC.”*

While archiving information for generating station whose tariff is determined under sections 62 or adopted under section 63 of the EA, 2003, will pose minimal challenges for the designated agency, a notable issue arises with merchant power plants due to significant information asymmetry. It is important to note that generating plants which are tied-up under a PPA would have limited participation in the market. Unlike regulated entities, **merchant power plants who can influence the market outcome, particularly during the period of power shortage.** A strategically coordinated play of such plants, capacity withholding by others and buyer’s ‘support’ can vitiate

market outcome.

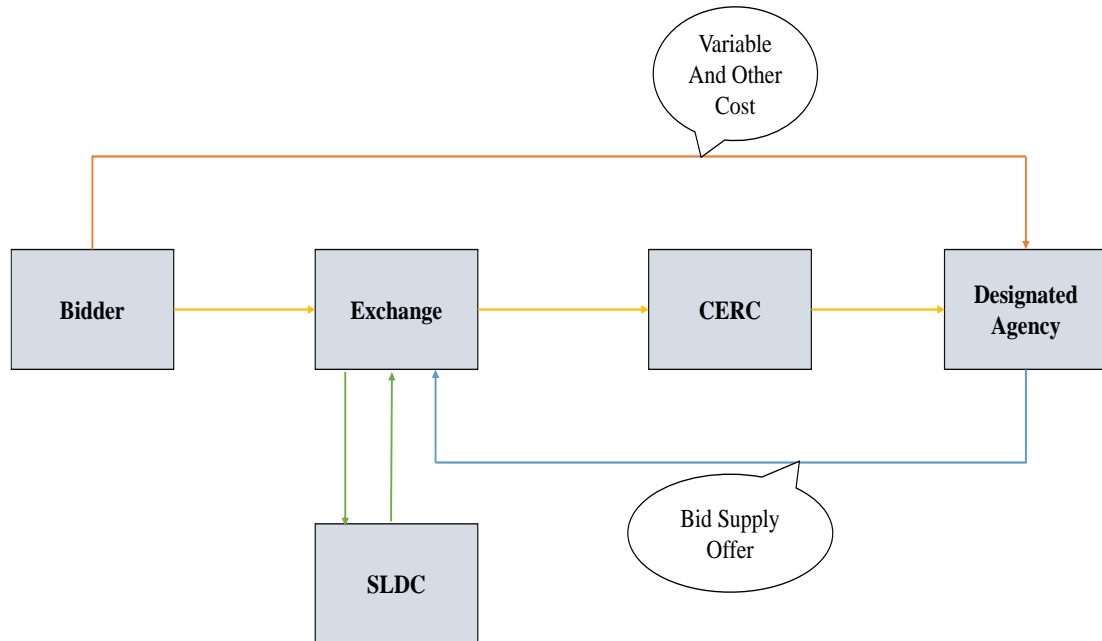


Figure 2: Proposed framework for Bid Supply Offer (BSO)

Given this complexity, it becomes imperative to delve into how the designated agency will ensure the timeline and reliability of information supplied by the merchant power plants. Traditional verification methods may prove insufficient due to the diversity of fuel sources with limited avenues of its verification, reporting structures and operational models among these entities. Therefore, the agency must develop robust mechanisms tailored to the challenges of information asymmetry in the sector.

These mechanisms could include rigorous data validation processes, independent audits, and the establishment of standardized reporting framework. Additionally, leveraging advanced analytics and technology-driven solutions may enhance the agency's ability to detect inconsistencies and anomalies in the information provided by the merchant power plants.

6. **Residual ATC and Limit on Bid Quantum:** As given in section 4.17 (vii) & (viii) the staff paper states *“The Power Exchanges shall ensure that the buyer’s total quantum bid, at the start of the bidding session of the DAM or the RTM, as the case may be, does not exceed the residual ATC of the state.”* And *“In the case of intra-state buyers, the total quantum bid shall be restricted to the drawl limit or the intra-state entity- wise ATC limit as stipulated by the SLDC, as the case may be.”*

Such a limitation would restrict flow of critical information about true demand and signaling for additional transmission capacity. Even if implemented, it would offer operational challenges as the market participants in market area may include inter as well as intra-state entities. The above stipulation should account for participation of intra-state entities when comparing with residual ATC. For example, a sell bid by intra-state generator (including captive/ merchant generator) may provide additional ‘residual ATC’ than as compared to the ATC accounted for (Figure 3).

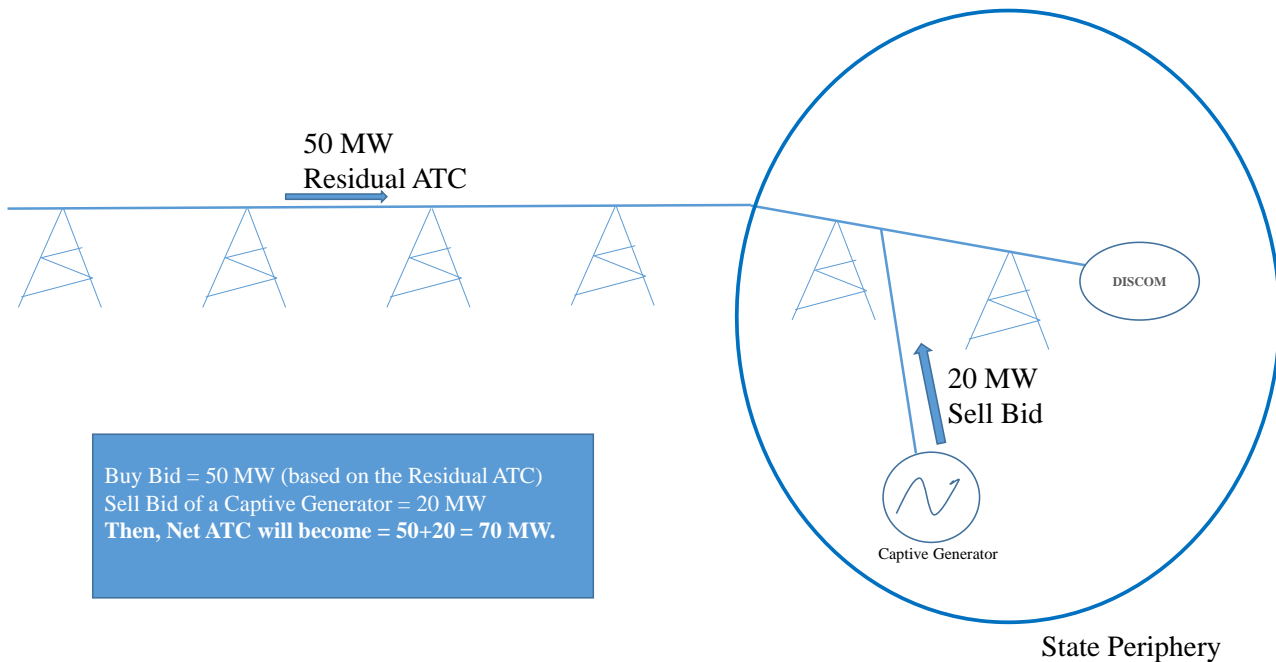


Figure 3: Concept of Net Residual ATC

- 7. Capacity Monitoring:** Withholding of generation capacity is one of the key factors that can be used to influence market outcome. The regulatory framework in the sector, currently has very limited capability to provide sector-wide monitoring of declared/ available capacity. Strategic withholding of capacity by a few generators can tilt the demand-supply balance and lead to artificial scarcity, eventually influencing the market prices. CERC, through NLDC, should ensure day ahead as well as real-time capacity monitoring across the sector. This can be incorporated in the Indian Electricity Grid Code, which could subsequently be adapted across the country. Energy Analytics Lab (EAL) can provide necessary technical support to provide capacity monitoring capability across the sector. Analysis of such data can help reveal strategic/ foul play to influence the market outcomes.

Moreover, the Commission needs to assess the strategic withholding performance of General Network Access (GNA). This evaluation is crucial to identify and mitigate any potential market manipulation or inefficiencies. By addressing these gaps, the Commission can enhance transparency, ensure fair competition, and maintain the integrity of the market.