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To
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Sub.: Staff Paper on Power Market Pricing – Reg.

Sir,

This has reference to public notice dated 12.10.2022 seeking comments of the Stakeholders on the Staff Paper on Power Market Pricing with an objective to review the regulatory framework, especially the pricing methodology used in Power Market and to explore possible options to deal with pressures on electricity market prices in recent times.

In this regard, views & suggestions of GUVNL are as under:

1. **Need to revisit Uniform Pricing Methodology for price discovery in Power Exchanges:**

   In the Staff Paper it is proposed whether there is a need to transit to price discovery mechanism from exiting uniform price auction to pay as bid.

   Comments: It is to mention that the algorithm being used for Price Discovery in Day Ahead Market in Power Exchange aims to maximize the social welfare i.e. maximize the sum of consumer and producer surplus within the bid received and price matching based on Branch & Bound technique to give a uniform price discovery with an objective of social welfare maximization.

   The above algorithm was in a manner programmed and implemented at a time when the producers' surplus (i.e. Sell bids) were considerably higher than consumers demand (i.e. Buy Bids) due to merchant capacity available in market, fuel abundance and constrained flow of power under system infrastructure. The welfare maximization approach with adoption of B&B

technique overlook the potential most efficient (i.e. lowest possible) price discovery based on producer surplus as it discovers a price through algorithm by taking into consideration the consumers' demand and willingness / priority to pay the amount.

The same implies that if Buyer is willing to pay a very high amount for a product, the Seller's quote (actual cost with markup) is ignored and algorithm discovers price on higher side which becomes payable to seller by buyer. The same generates the avenues for supernormal profit as Seller willing to sell at a lower rate also fetches a higher discovered rate and revenue more particularly when there is scarcity of the product. It is to clarify that the aforesaid pricing mechanism is completely different from price matching mechanism used for e-auction on DEEP Portal.

In view of above, since energy is an essential commodity and is prone to predatory pricing particularly during scarce scenario as observed during last year, it is having a huge impact on social and economic welfare of citizens. In the given scenario, a need is felt to transit to a price discovery mechanism which can ensure that not only Sellers offer the power with a reasonable markup above its cost as per industry return norms in addition to making available the energy to Buyers at such offered reasonable rates instead of demand driven willingness to pay higher prices.

2. **Reasons for implementing "Pay as Bid" with certain modifications:**

In the Staff Paper, Pay as Bid methodology has been deliberated as per which all the accepted bids of winning producers would be remunerated at their respective bidding prices while the difference between buyers willingness to pay and price received by winning bidders would be consumer surplus.

Comments: In the above context, the primary objective of National Tariff Policy 2016 is to ensure availability of electricity to consumers at reasonable and competitive rates. Under the present uniform pricing mechanism, even when the Seller has offered power at Rs. 4/unit, it could fetch revenue as per discovered rate i.e. Rs. 12/unit. The same promotes profiteering by Seller at the cost of consumers and defies the objective of National Tariff Policy.

Therefore, while framing the "Pay as Bid" modality, following commercial aspects would be relevant in price discovery mechanism:

- Seller shall be paid as per their respective Bid only

- "Qualified Quantum" shall be worked out as per Buyers bid such that Sellers quantum is matched and extinguished to the extent of Buyers requirement
- Sellers quote and buyers quote being different – the amount of revenue to the sellers and amount of cost to be paid by buyers could be different – therefore a unified mechanism needs to be framed stipulating criteria for allocation of matched quantum to buyers in descending order of their price quote and Adjustment Factor for payment by qualified buyers
- The Pay as Bid hybrid methodology shall be such that buyer does not pay the cost as per their bid (if quoted higher than sell price) when power is available at a lesser rate which needs to be reflected in mechanism
- Pay as Bid framework with appropriate modifications needs to be framed

3. **Supernormal profits made during energy crisis scenario:**

In the Staff Paper, the instances of action initiated by European Union recovering excess revenue made by power plants for power sold at a rate exceeding the cap and 33% levy by Authorities to partially capture surplus profits made by fossil fuel companies have been mentioned. Further, views has been sought as to whether similar modality for capping the excess revenue through recovery by system operator and can a levy on supernormal profits be imposed.

Comments: From the month of Sep-2021 onwards, Power Exchanges has been witnessing severe price volatility and price has remained exorbitantly higher during the months of Oct 21 to Apr 22 due to supply constraints and demand bids being much higher than sale bids. Prior to price ceiling of Rs. 12/unit, power was traded at around Rs. 20/unit (erstwhile ceiling).

With regard to the quantum which participated during the above period majority was based on domestic coal followed by imported coal and hydro. It is pertinent to mention that domestic coal linkage is available from M/s Coal India under various policies and schemes of Ministry of Power at a concessional rate in addition to e-auction route at spot prices. Needless to mention that the revenue generated by utilizing the above coal for disposal of power in Power Exchanges have fetched super normal profit at the cost of electricity consumers in the country. It is also relevant to highlight that even at lifetime high prices of imported coal, the landed cost of coal at power plants was around Rs. 12000-

17000/MT for which variable cost of generation works out to around Rs. 5.90-8.30/unit. While no / negligible gas quantum would have participated in view of prevailing gas prices.

In view of above, Hon'ble Commission may direct the market participants and Power Exchanges to compile the data of quantum sold by each entity during the above period, source of fuel, average cost of power generated and average revenue realization. The same will enable Hon'ble Commission and concerned Authorities to assess and identify the level of profiteering and take suitable decision for defining an empirical formula for dynamic pricing framework which can be implemented retrospectively. Excess revenues, profits earned shall be recovered and refunded back to buyers in the share of their cost contribution in the power purchased during this period on daily basis.

4. **Mitigating negative impact of Pay as Bid pricing or hybrid methodology:**

With implementation of Pay as Bid hybrid approach, there ought to be an imminent risk of market cartelization wherein sellers may refrain from submitting their quotes below certain price level to ensure maximum revenue after analyzing buyers bidding pattern and price willingness.

In the above context, it is to mention that the major cost driver of Distribution Companies is power purchase cost and cost of power is indirectly affecting their efficiency and viability. The time has come to intervene and regulate the price at which power is offered by Sellers by utilizing the concessional fuel or auction market fuel. At a time when returns generated by distribution, transmission and generation companies are regulated under the ambit of regulatory framework, a mechanism shall also be in place for restricting the Sellers from selling a unit of electricity at Rs. 12/unit when the cost of generation is merely at Rs. 1.50-2.00/unit. There is a need to have a list of generation cost of participating seller entitles and its source of fuel and returns generated / revenue earned beyond a predefined level shall be retained by System Operator / nodal Authority for remitting back to Buying entities.

In order to encourage participation from thermal project without PPA / merchant capacity to generate power, coal is now made available under Policy of Ministry of Power through auction. Such policy mandates utilization of allocated coal mandatorily by disposing the power in short term market / Power Exchanges. In

such cases, to ensure availability of power at reasonable rates to buyers in market and avoid windfall gain by sellers by opting to sale power utilizing above coal only during time block fetching high revenue, there is need to have mechanism to avoid windfall profit by sellers.

The above will not only enable availability of power at reasonable rates in power market but also in a manner help Distribution Companies in reducing their cost of power and ultimately will benefit end retail consumers.

5. **Intervention in Green Market prices in Power Exchanges:**

It has been observed that market pricing in Green Market is in a manner synchronous with conventional power market in Power Exchanges. However, the cost of generation from Renewable Project like Wind, Solar etc. is comparatively lower and does not witness availability & price risk like coal, gas etc. In upcoming years, considerable RE merchant capacity is envisaged to participate in Power Exchanges and there is a necessity to ensure that green power is not priced exorbitantly higher for windfall profits.

6. **Measures for incentivizing demand response and energy storage system:**

In the present demand-supply dynamics, it is observed that there is a huge spike in power demand during morning peak and evening peak hours which are mounting and sinking hours respectively for solar generation. In the absence of energy storage, supply response for this time blocks is mitigated either from thermal generation or market source. Thermal generation having limited ramping flexibility, dependency of buyers on market source leads to price discovery at ceiling rates as power availability is limited. Accordingly, it would be possible to have a Virtual Entity at System Operator level (NLDC) in line with CERC Ancillary Services Regulation which can schedule generation from Energy Storage System for filling the supply gaps at regulated prices. This will reduce the burden on Power market while promoting energy storage system.

Thanking you.

Yours faithfully,

(K. P. Jangid)
General Manager (Commerce)