Payment and Settlement

Power exchanges attempt to create a transparent, world-class system

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The Electricity Act, 2003 introduced the basic ingredient of competition into the power sector in India. The act allowed consumers to have a choice in deciding which supplier to buy power from. This paved the way for sector landmarks like open access and the setting up of power exchanges, which have led to better usage of power sector infrastructure by ensuring the flow of power from power-surplus to power-deficit regions and ensuring the optimal usage of capacity of captive power plants (CPPs), which used to earlier remain underutilised. The transparent price discovery and trading opportunities provided at power exchanges certainly encourage the addition of merchant power capacity, leading to increased investments in the power sector.

Power exchanges offer an electronic exchange platform, thus catalysing the modernisation of electricity trade in the country by ushering in a transparent and neutral market. In India, two power exchanges – Power Exchange India Limited (PXIL) and Indian Energy Exchange (IEX) – have been set up so far, and a third exchange is in the offing. The Central Electricity Regulatory Commission (CERC) is the regulator for the power exchanges.

Power exchanges in India have started with trading on day-ahead markets characterised by features such as closed auction with double-side bidding and clearing at a uniform price called the market clearing price. Delivery is done the following day.

Power exchanges operate 365 days in a year. All the power traded through exchanges has to be settled by timely deliveries. Exchanges now also offer term-ahead trades through weekly products. Over a period of time, power exchanges would be able to expand the bouquet of products, especially in the term-ahead market (for example, monthly forward contracts) and would also offer derivative contracts.

Clearing process

Clearing incorporates the actions that take place after committing to a transaction until its settlement, and includes reporting, monitoring, risk-margining and trade-netting. The clearing organisation is responsible for collecting and maintaining margin funds/collaterals, reporting trading data and regulating delivery in a way that eliminates counterparty risk for members. Settlement is the process of discharge of obligations of the members for a particular trade.

Power exchanges or designated clearing organisations act as central counter-parties to all the transactions done on an exchange platform. This obviates the need for ascertaining the creditworthiness of each counter-party, thereby securing the financial interests of all members. In doing so, various risks need to be identified and a margin/collateral management system has to be put in place to cover the settlement of transactions by eliminating all possible risks.

The CERC also recognises that payment and settlement systems are critically important for power exchanges. To

ensure broadening and deepening of power markets, as also for maintaining confidence in the financial system by enhancing the safety, soundness and efficiency of the market infrastructure, the regulator has specified various guidelines for clearance and settlement in exchanges in the recent draft guidelines for power markets.

Clearing and settlement in power exchanges is different from that in stock or commodity exchanges in certain ways:

- Stock and commodity exchanges deal in items that are tangible and can be delivered or held back; can be owned by clearing and settlement organisations; and auctioned in case of payment defaults. The same facility is not available to power exchanges as power cannot be stored or held back.

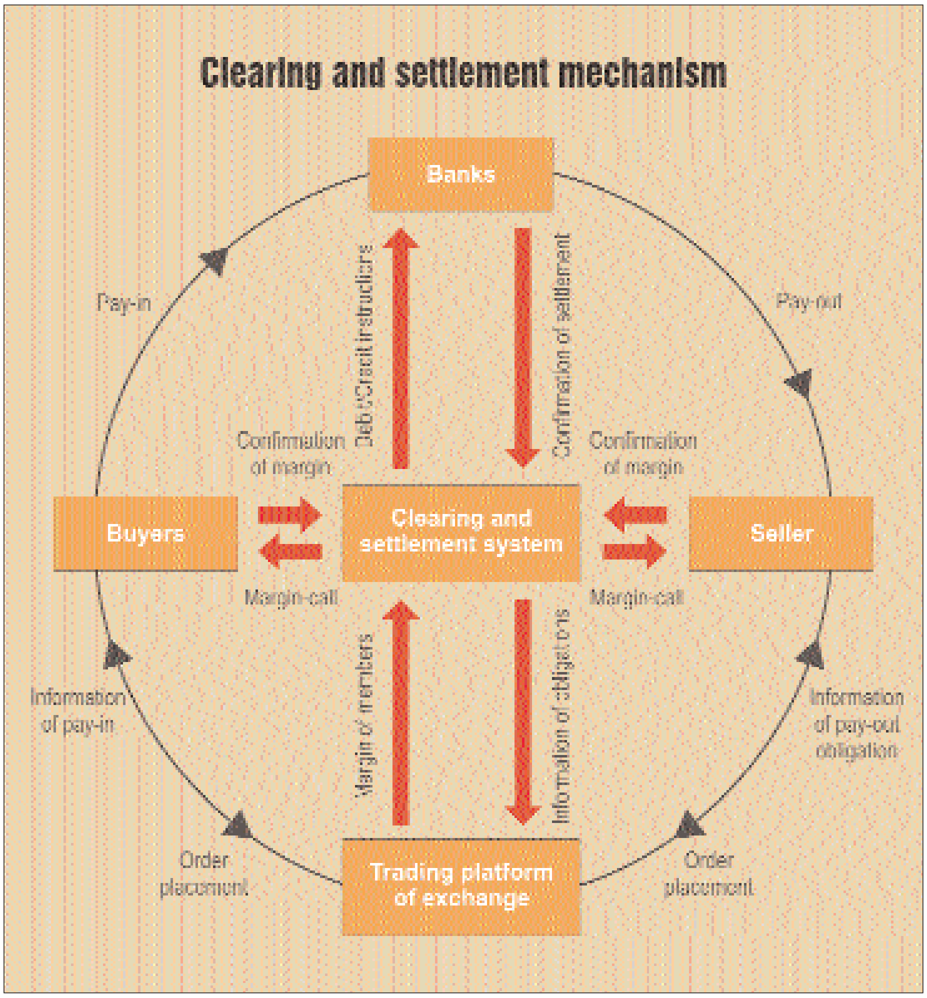
- The delivery of power in trades matched through power exchanges is done the next day as the flow of power is dependent on the availability of transmission lines and needs to be scheduled a day in advance.

- Once a bid/offer is matched in stock/commodity exchanges, the volume of trade for that particular transaction is crystallised. The same is not the case with power exchanges, as after matching, the transaction is forwarded to the respective load despatch centres and only after securing transmission clearances can volumes be crystallised. If faced with congestion, the cleared volume may come down. Depending on regional congestion, the price of a contract may also undergo a change.

- According to the norms of the electricity trade, buyers and sellers have to make adjustments for transmission losses, to pay transmission charges and pay the price that they have settled on for power, on the exchange. These are collected by exchanges and sent to the national/regional/state load despatch centres (NLDCs/RLDCs/SLDCs).

- While stocks/commodities exchanges charge for transactions based on the value of the transaction, power exchanges charge a transaction fee based on the volume of trade, which is neutral to the value of the transaction.

- In day-ahead power trade, once the trades are scheduled with the NLDC/SLDCs, the flow of electricity is taken care of by the unscheduled interchange (UI) mechanism. An exchange does not need to monitor it, and deliveries are assured. In weekly trades, schedules may be revised after giving due notice as prescribed by the central transmission utility.



The transparent price discovery and trading opportunities provided at power exchanges encourage the addition of merchant power capacity, leading to increased investments in the power sector.

The clearing and settlement system initially introduced by the power exchanges had to cope with the legacy of a prevalent financial structure and the payment system of the existing bilateral trades in the power sector. The existing payment system was characterised by liquidity problems, varying degrees of financial soundness amongst players, fortnightly payments for trades, etc. Power exchanges then introduced daily payment cycles and enforced financial discipline in their settlement system.

Margin requirements for buyers in power trade are relatively high to eliminate payment risks. For day-ahead products, the settlement system requires buyers to pay on the "T" or "T+1" day, that is, as soon as delivery is made, and the payment is passed on to the seller the next day. Such margin requirements and daily payment discipline were new for the power markets, and the clearing and settlement system had to offer a solution to these issues, often by innovating and implementing new ideas.

One of the innovations introduced by power exchanges has been the use of bank credit limit for the purpose of margins. Since the margin requirements have been high, the concept of allocating bank credit limits was introduced as a tool for meeting these requirements. A bank limit is a unique arrangement in the way that it can be used for determining margins, as well as for meeting payment requirements, thus infusing liquidity in the system.

Margins

Power exchanges employ a comprehensive risk management mechanism by having a real-time checking mechanism for orders placed by members and by placing a margining/collateral system. Members that intend to place orders have to pay the margins upfront, as prescribed by the exchange, before they can place their bids. Margins can be placed in any of the following forms:

- Cash – A member may place cash as margins with the exchange.
- Fixed deposit receipt (FDR) – A member may place an FDR and enjoy exposure on the same.
- Bank guarantees/Letters of credit – A member may place an irrevocable bank guarantee from any approved bank.
- Bank limit/professional clearing member (PCM) limit – Some exchanges allow members to get their working capital limits allocated in favour of exchange settlement accounts for the purpose of margins. PXIL also allows limits sanctioned by the professional clearing member (PCM) for the member to be used as margin.

Bids with appropriate margins are eligible for matching and clearing and settlement. Members are responsible for all obligations arising out of such trades, including the payment of margins, penalties, fees or any other levies, and settlement of obligations of the trades entered into by themselves as trading members, or for other trading members for whom they have undertaken to settle trades as clearing members in accordance with the exchange rules.

PCM – New initiative by PXIL

PXIL pioneered the concept of PCM, a unique system using which financial entities or banks can become members of the exchange to perform the clearing function, as well as to provide finance to other members. The response to PXIL's PCM concept has been encouraging, since it is useful for members in providing the enhanced margins required under the term-ahead products.

A PCM discharges all clearing and settlement functions for the member it represents. On a member's request, the PCM may also sanction a credit limit to the member. Once that limit is in place, it can be blocked for margin requirement of the member's trade obligation, for which no charges are levied. Members can make payment of trade obligations from their own resources, in which case, there is no implication of interest. Alternatively, a member can use the credit limit for payment, in which case interest would be payable for actual usage of funds. Currently, PXIL has the Power Finance Corporation as its PCM.

> The settlement system introduced by power exchanges, backed by the margin requirements, has brought in the much-required financial discipline in power markets, which is critically required for its orderly growth.

Settlement

Settlement of funds for power trade is organised around the delivery of power. Indian power exchanges ask for a "pay-in" by buyers of either "T" or "T+1" day, while the "pay-outs" to sellers are generally done on the "T+2" day. The entire system is electronically done, with little human intervention, thereby eliminating the chances of error. The pay-in/pay-out is done on a daily basis in both day-ahead and weekly trades – a paradigm shift in power markets earlier used to a fortnightly payment system.

Power exchanges have empanelled clearing banks for smooth settlement of trades. Every clearing member is required to maintain and operate a settlement account with any one of the empanelled banks at the designated branches. The settlement account is to be used exclusively for clearing and settlement operations. Funds are debited/credited in the member's settlement account on a daily basis depending on the volume of trade done by it. Buyers are required to fund their settlement accounts on the due dates, for which an intimation of obligation is issued immediately after trade. Sellers can withdraw money once an exchange credits their settlement accounts.

The settlement system introduced by power exchanges, backed by the margin requirements, has brought in the much-required financial discipline in power markets, which is critically required for its orderly growth.

Conclusion

The payment and settlement system constitutes the backbone of a power exchange and enables conclusion and settlement of financial obligations. Power exchanges in India are striving to create a world-class payment system in the power sector – a long, arduous but exciting journey in which the regulator is also taking a keen interest by issuing the appropriate guidelines. Dedicated and systematic efforts in this direction will help the country's power exchanges in realising their goals. ■