



IEX BULLETIN

IN THIS ISSUE...

REGULATORY NEWS

MoP Discussion Paper on Market-Based Economic Despatch	01
MoP Order on Waiver of ISTS Charges	02
MoP Discussion Paper on Redesigning the REC Mechanism	02
MoP notifies Electricity Rights of Consumers Amendment Rules, 2021	03
BEE modifies ESCerts Procedures	03
CERC issues Order on Petition for PPA exit by BSES	04
DERC amends Tariff Order Regulations, 2021	04
KERC Tariff Order, FY 22	04
MSERC amends State RPO Regulations	05
UPERC Order on RPO Regulatory Fund	05
WBERC Tariff Order, FY 22	05

POWER INSIGHTS

JUNE 2021	06
-----------	----

MARKET NEWS

MARKET NEWS	07
-------------	----

EXPERT SPEAK

Gross Bidding: An efficient way to optimize power procurement costs - By Rajesh K Mediratta, Director-Strategy and Regulatory Affairs and Jogendra Behera, VP - Market Design & Economics, Indian Energy Exchange Limited	09
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TRADE INSIGHTS

DAY-AHEAD MARKET	13
REAL-TIME MARKET	15

REGULATORY NEWS

MoP Discussion Paper on Market-Based Economic Despatch

In June 2021, the Ministry of Power issued a discussion paper on Market-Based Economic Despatch (MBED). The key highlights of the paper are as follows:

- ◆ Presently Discoms are procuring power by self-scheduling generators on day-ahead basis with some of cheaper generating stations remaining unutilised.
- ◆ All Discoms and Generators to mandatorily participate in the Day-Ahead Market (DAM) on the Power Exchanges and cleared volume & price to be discovered through market, to enable efficient despatch of generating companies (Gencos). The discussion paper has estimated savings to the tune of Rs 12,295 crores, ~4% of total generation cost.
- ◆ Phase 1 Implementation of MBED has been proposed with the fleet of NTPC thermal stations from 1 April, 2022. This will help participants, Power Exchanges and Regulators, gain experience from the process while also limiting the commercial exposure of Discoms.
- ◆ Discoms/buyers will have to pay to the market operator at MCP for the day-ahead demand. Similarly, all the generators will be paid at the MCP according to execution of their selected bids. Difference of MCP and contracted prices (if MCP > contracted price) per power scheduled will have be refunded to Discom by generator through Bilateral Contract Settlement (BCS) mechanism.
- ◆ Discoms will still be able to self-schedule the generators with Power Purchase Agreements (PPAs), however both discoms and generators have to mandatorily participate in the day-ahead market segment of power exchanges for bidding.
- ◆ The generators can also sell Un-Requisitioned Supply (URS) power in market. The revenue will have to be shared with beneficiaries in 50-50 with ceiling price of 7 p/kwh.

- ◆ The Right to Revision (RTR) will cease to exist until DAM results are announced and such RTR will be reinstated in respect of the quantum not cleared in the DAM from those candidate plants.
- ◆ The MBED would result in increase in electricity volumes traded through the power exchanges.

MoP Order on Waiver of ISTS Charges

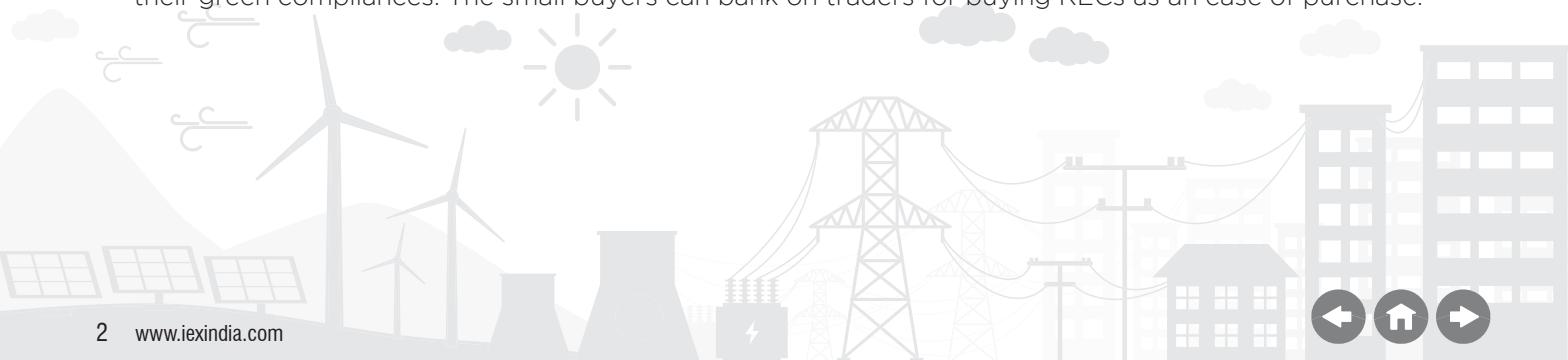
On 21 June 2021, the Ministry of Power (MoP) issued an order on waiver of inter-state transmission charges. The key highlights of the order are as follows:

- ◆ The waiver of ISTS charges for Solar, Wind, Hydro Pumped Storage Plants (PSP) and Battery Energy Storage System (BESS) for trading in Green Term-Ahead Market (G-TAM) and Green Day-Ahead Market (G-DAM) on the power exchanges has been granted till 30 June, 2023.
- ◆ The waiver of ISTS charges has been made for all the solar and wind energy projects to be commissioned up to 30 June, 2023.
- ◆ The waiver has also been granted to individual Hydro PSP and for BESS. The ISTS charges for power generated/supplied from such Hydro PSP and BESS will be levied gradually at the rate of 25% for initial 5 years and then additional 25% will be charged after every 3 years.
- ◆ Apart from this, the charges have also been waived off for intra-state transmission system, which is used for inter-state transmission of power.

MoP Discussion Paper on Redesigning the REC Mechanism

On 4 June 2021, the Ministry of Power (MoP) issued a discussion paper on redesigning the Renewable Energy Certificates (REC) mechanism. The key highlights of the paper are as follows:

- ◆ To increase the share of renewable energy in India's energy mix to 175 GW by 2022 and 450 GW by 2030, the Ministry aims to promote new energy technologies like Offshore Wind, Hydrogen, Pumped Storage Hydro Plant, etc.
- ◆ Perpetual validity of RECs and doing away with the floor and forbearance prices.
- ◆ The CERC to put in place a monitoring & surveillance mechanism to ensure that no artificial price rise in RECs takes place.
- ◆ The traders and aggregators are eligible for issuance of RECs for 15 years from COD of projects. The existing RE projects to get RECs for a time period of 25 years.
- ◆ Introduction of multiplier for less mature RE technologies and provision of 15 years policy visibility for new RE technologies.
- ◆ The Obligated Entities to be incentivised for procurement of green power beyond Renewable Purchase Obligations (RPO).
- ◆ REC not to be provided to beneficiary who gets concession such as waiver of transmission charges or preferential banking charges, etc.
- ◆ The role of trader in REC trading will be enhanced to provide long-term visibility to buyers of RECs to fulfil their green compliances. The small buyers can bank on traders for buying RECs as an ease of purchase.



MoP notifies Electricity Rights of Consumers Amendment Rules, 2021

On 28 June 2021, the Ministry of Power (MoP) notified Electricity Rights of Consumers Amendment Rules, 2021. The salient features of the draft are as follows:

- ◆ The power ministry revised the definition of Gross metering, Net metering and Net billing. Under Gross metering there will be separate accounting of the energy produced and energy consumed by the Prosumer through different metering arrangements.
- ◆ The total energy consumed by Prosumer is accounted as retail tariff and total solar power generated is accounted at feed in tariff.
- ◆ In Net billing there will be single bi-directional meter-based accounting of the energy produced and energy consumed by the Prosumer. The net of the monetary value of imported energy & exported energy gives the net billed (or credited/carried-over value).
- ◆ In Net metering there is also single bi-directional meter-based accounting of the energy produced and energy consumed by the Prosumer. The net of the imported energy & exported energy gives the net energy metered (or credited/carried-over units).
- ◆ If the regulations do not provide for net metering or net billing, then net metering may be allowed to Prosumers up to 500 kW or sanctioned load, whichever is lower.
- ◆ The State Electricity Regulatory Commissions (SERCs) may provide ToD tariffs for net billing Prosumers to encourage them to install storage solutions for assisting in demand response of the Discoms.
- ◆ In net metering/net billing, the Discom will be required to install separate energy meter for accounting of its RPO credit.

BEE modifies ESCerts Procedure

In June 2021, the Bureau of Energy Efficiency (BEE) modified the Energy Saving Certificates (ESCerts) procedures under the CERC terms and conditions for dealing in Energy Saving Certificates Regulations 2016. The key changes proposed are as follows:

- ◆ The registration of Designated Consumer (DC) as eligible entity to be valid beyond their PAT cycle; earlier it was valid only up to the next PAT cycle.
- ◆ The eligible entities have been given the option to introduce partial ESCerts in slots with an interval of 15 days till the completion of validity of ESCerts.
- ◆ The DC who has been issued ESCerts during current cycle may use them for banking or may sell them to other DC for compliance.
- ◆ In case the buy bids for ESCerts exceed the quantity of ESCerts entitled to be purchased, the additional ESCerts will be banked and can be used only for their own compliance in next PAT cycle but cannot be resold.
- ◆ ESCerts purchased through power exchanges cannot be resold under any circumstances.



CERC issues Order on Petition for PPA exit by BSES

- On 1 July 2021, the CERC issued an order on the petition filed by BSES seeking adjudication of PPA exit disputes with respect to NTPC Dadri-I station.
- CERC observed that BSES may exit from PPA/SPPA by approaching the MOP for de-allocating its share from Dadri-I and as Dadri-I has completed 25 years on 30.11.2020 from COD, the first right of refusal would become effective once MOP deallocates share of petitioners from Dadri-I generating station.
- MoP through its notification dated 5 July 2021 had clarified that Discoms may relinquish entire allocated power from project, which has completed 25 years from COD along with a condition that allocated power cannot be surrendered partially.

DERC amends Tariff Regulations, 2021

In June 2021, Delhi Electricity Regulatory Commission (DERC) issued first amendment to the Tariff Regulations 2021. The key proposed changes are as follows:

- Revision in definition of "Base Rate of Late Payment Surcharge" and inserted definition of "Due Date".
- Recovery of Power Purchase Cost Adjustment Charges on monthly basis which are currently recovered quarterly.
- Increase in late payment surcharge and decrease in the period of bill payment from 60 to 45 days.

KERC Tariff Order, FY 22

On 9 June 2021, the Karnataka Electricity Regulatory Commission (KERC) issued a tariff order for state transmission and distribution companies. The salient features of the order are as follows:

- The average power procurement cost for all the distribution utilities has been approved at Rs. 4.39/kwh for FY 22.
- Chamundeshwari Electricity Supply Corporation (CESC) has been directed to meet the non-solar RPO gap of 314.9 units through purchase of RE power or RECs. All other Discoms are expected to comply with RPO targets.
- Applicability of Discounted Energy Rate Scheme for High Tension Consumers: Excess energy consumed by eligible consumers during monsoon/off season (July-December), over and above monthly average base consumption, will be allowed discounted energy charges at the rate of Rs. 6 per unit.
- Increase in energy charge for industrial category to the tune of 10 p/unit.
- The cross-subsidy surcharge has increased by 8 p/unit for industrial category.
- A minor increase has been proposed in wheeling charge for each Discom. The penalty and incentive under ToD mechanism has been removed for monsoon season from July to November.



MSERC amends State RPO Regulations

In June 2021, the Meghalaya State Electricity Regulatory Commission (MSERC) issued the 1st amendment to the Renewable Energy Purchase Obligation & Compliance Regulations, 2018. The key highlights are as follows:

- ◆ As per original regulation of 2018, the Captive Power Plants (CPPs) were to comply with same RPO target as other obligated entities. However, as per the latest amendment for the CPPs commissioned before 1 April 2016, the RPO will be pegged as prescribed in the Regulation for FY 2015-16.
- ◆ For the CPPs commissioned from 1 April 2016 onwards, RPO will be pegged at the level of the year of commissioning.
- ◆ In case of augmentation in CPP capacity, the RPO for augmented capacity to be pegged at a level prescribed by MSERC for year in which such augmented capacity is commissioned.
- ◆ If any CPP has surplus power while meeting RPO, then such a CPP may sell surplus power to Discoms/GRIDCO under prevailing arrangements or to any other consumer.

UPERC Order on RPO Regulatory Fund

On 16 June 2021, the Uttar Pradesh Electricity Regulatory Commission (UPERC) issued an order regarding RPO regulatory fund. The key highlights of the order are as follows:

- ◆ The UPERC in January 2020 had directed UPPCL to create RPO regulatory fund towards existing RPO backlog up to FY 20 for Rs. 737 crores.
- ◆ The Commission has now directed UPPCL to deposit Rs 7,224.65 crore in the fund towards RPO compliance upto FY22.
- ◆ The payments for renewable power will be routed through this fund in which UPPCL will have to deposit the amount in 10 equal instalments for each month.
- ◆ The Funds till FY 21 were determined on REC price at the rate of 1 Realisation Per Unit (RPU). However, for FY 22, it will be determined on the basis of annual power procurement cost of UPPCL.

WBEC Tariff Order, FY 22

In June 2021, the West Bengal Electricity Regulatory Commission (WBEC) issued tariff order for state transmission and distribution utilities for FY 22. The key highlights of the order are as follows:

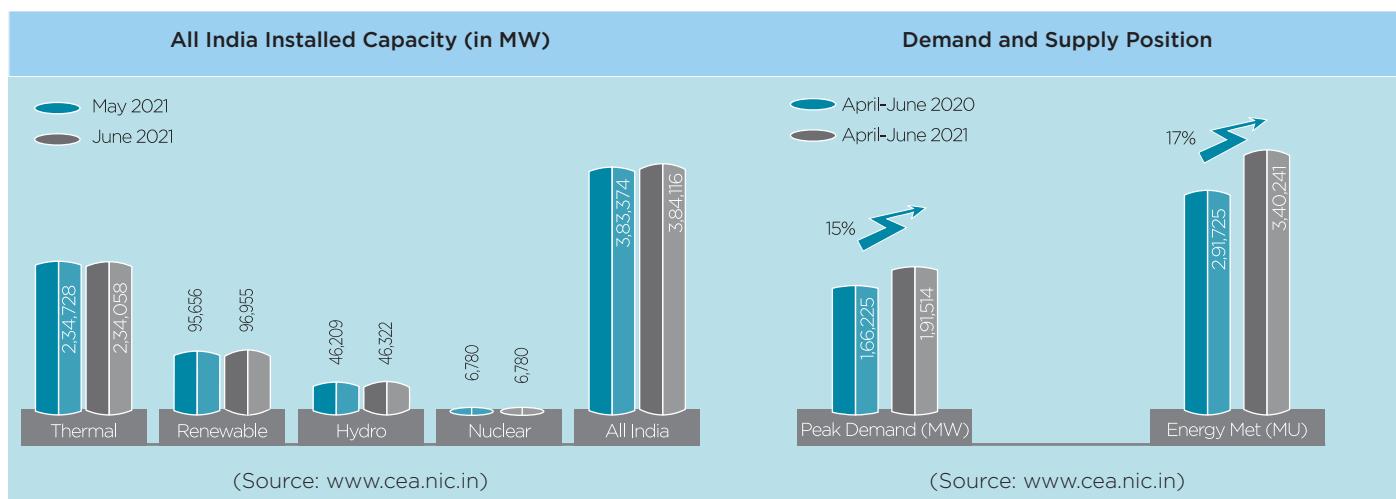
- ◆ The short-term open access tariff has increased from 246.66 paisa/unit in FY 21 to 258.12 paise/unit in FY 22.
- ◆ The WBEC has rejected the petition filed by WBSEDCL for determination of Additional Surcharge, in view that the present regulations do not provide for generic determination of Additional Surcharge (ASC).
- ◆ WBSEDCL to submit its comments on the draft Open Access regulations amendment that it will issue shortly.
- ◆ WBSEDCL to submit the details of open access granted by it to the parties in state for the computation of ASC on case-to-case basis.



POWER INSIGHTS : JUNE 2021

- ④ In June 2021, all India installed capacity stood at 3,84,116 MW with capacity addition of 742 MW during the month with break-up as below:
 - Thermal: Reduced by 670 MW • Renewable: Addition of 1299 MW • Hydro: Addition of 113 MW • Nuclear: No change
- ⑤ All India peak demand reached 1,91,514 MW during April-June '21 registering 15% YoY increase from 1,66,225 MW in April-June '20.
- ⑥ All India energy met reached 3,40,241 MU during April-June '21 registering 17% YoY increase from 2,91,725 MU in April-June '20.

	April-June '21	April-June '20	Year on Year (YoY) Change
Peak Demand (GW)	191.51	166.22	15.21%
Electricity Consumption (BU)	340.24	291.72	16.63%



Peak Demand Comparison of Key States (MW)

(Source: www.cea.nic.in)

The comparison of the peak demand in the key states during April-June '20 and April-June '21 is as hereunder:

State	April-June '20	April-June '21	Increase/Decrease	% Change
Telangana	10,014	13,595	3,581	36%
Karnataka	11,516	14,158	2,642	23%
Gujarat	15,924	19,360	3,436	22%
Maharashtra	21,463	25,644	4,181	19%
Andhra Pradesh	10,101	11,570	1,469	15%
Tamil Nadu	14,591	16,519	1,928	13%
Madhya Pradesh	10,173	11,392	1,219	12%
Uttar Pradesh	22,110	24,674	2,564	12%
Punjab	12,683	13,141	458	4%
Rajasthan	12,755	12,787	32	0%
All India	1,66,225	1,91,514	25,289	15%

Energy Met Comparison of Key States (MU)

(Source: www.cea.nic.in)

The comparison of the energy met in the key states during April-June '20 and April-June '21 is as hereunder:

State	April-June '20	April-June '21	Increase/Decrease	% Change
Gujarat	25,270	31,707	6,437	25%
Maharashtra	35,250	43,255	8,005	23%
Punjab	12,995	15,382	2,387	18%
Telangana	14,146	16,572	2,426	17%
Tamil Nadu	24,892	28,620	3,728	15%
Andhra Pradesh	15,469	17,746	2,277	15%
Madhya Pradesh	16,869	19,171	2,302	14%
Rajasthan	18,742	20,405	1,663	9%
Uttar Pradesh	30,123	32,512	2,389	8%
Karnataka	17,658	18,293	635	4%
All India	2,91,725	3,40,241	48,516	17%

MARKET NEWS

ELECTRICITY MARKET

The Indian Energy Exchange traded 7093 MU of electricity volume in June '21 recording 48% YoY growth. According to the power demand data published by the National Load Dispatch Center, the national peak demand saw 16% YoY increase, with the highest ever peak demand at 191.51 GW, while energy consumption at 115 BU grew 8% YoY. The growth has been led by relaxations in COVID-19 related lockdowns across the country along with peak summer season and heat wave in Northern India. Cumulatively for the first quarter of fiscal year 2022, the Exchange Market witnessed a robust performance despite the CoVID-19 induced lockdown restrictions. The electricity market achieved the volume of 21,340 MU during the first quarter resulting in 44% YoY growth. Amidst growing power consumption in the country, distribution utilities and industries are increasingly relying on IEX electricity market to source power in the most competitive, efficient, sustainable and flexible manner.

MCP FOR JUNE '20 & JUNE '21



DAY-AHEAD ELECTRICITY MARKET

The Day-Ahead Market traded 4314 MU volume in the month of June '21 with the average monthly price at Rs. 3.06 per unit. The sellbids at 2X of the cleared volume during the month of June '21 ensured ample availability of power and discovery of competitive prices thereby providing optimisation opportunities to the distribution utilities. For the first quarter of the year 2022, the Day-Ahead Market on the Exchange, traded 14,377 MU and registered 7% YoY growth.

TERM-AHEAD ELECTRICITY MARKET

The Term-Ahead Market comprising intra-day, contingency, daily & weekly contracts traded 641 MU during the month recording a 539% YoY growth. Cumulatively, for the first quarter, the Term-Ahead Market traded a total of 1372 MU and registered 54% YoY growth.





REAL-TIME ELECTRICITY MARKET

The Real-Time Electricity Market continued to show exceptional performance with the highest ever monthly volumes of 1726 MU at an average monthly price of Rs. 3.02 per unit. The trade volume saw a significant 235% YoY growth and 20% MoM. The market also recorded highest ever volume in a single day with 80 MU traded on 22nd June. In the first quarter, the market has done a cumulative trade of 4,635 MU. The consistent growth of Real-Time Electricity Market is an indication of growing reliance of distribution utilities and industries on the market to address their power demand-supply balancing in real time at competitive prices.

GREEN MARKET

The Green Term-Ahead Market also saw the highest ever monthly volume being traded in June '21. With a volume of 412 MU during June '21, the market saw 15% growth over the previous month led by the ongoing wind season. For the first quarter, the market has registered a cumulative trade volume of 955 MU, already surpassing the total green volumes achieved in FY 2021. The market is witnessing a growing increase in participation and has become a key facilitator of green power trade among distribution utilities, industrial consumers and green generators offering the most competitive and viable avenue. A total of 49 participants participated during the month with distribution utilities from West Bengal, Bihar, Haryana, Telangana, Karnataka, Uttar Pradesh, Goa, Maharashtra, Daman & Diu, Assam and New Delhi among several others, as key participants.

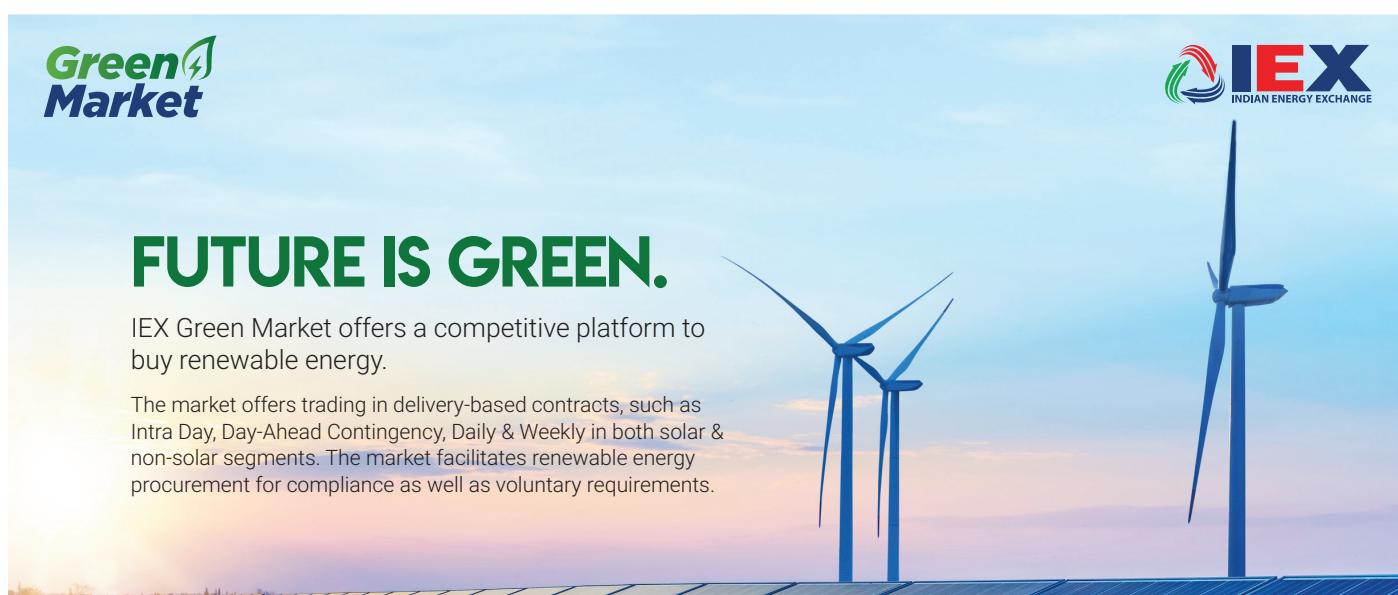




FUTURE IS GREEN.

IEX Green Market offers a competitive platform to buy renewable energy.

The market offers trading in delivery-based contracts, such as Intra Day, Day-Ahead Contingency, Daily & Weekly in both solar & non-solar segments. The market facilitates renewable energy procurement for compliance as well as voluntary requirements.



Green Term-Ahead Market commenced trading on 21 August 2020, apropos the CERC approval

Green Term-Ahead cumulative volume: 955 MU in Q1, FY 22

49+ key participants, including distribution utilities and open access consumers

Green Day-ahead Market – to be introduced shortly

CUSTOMER VALUE PROPOSITION



24X7 Power



Competitive Prices



Flexibility



Transparency



Cost Savings



Payment Security

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EXPERT SPEAK

GROSS BIDDING: AN EFFICIENT WAY TO OPTIMISE POWER PROCUREMENT COSTS

By Rajesh K Mediratta, Director-Strategy and Regulatory Affairs and
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(This article first published in the June '21 Edition of the Power Line Magazine)

Background:

India has moved from a power deficit scenario to a surplus scenario, achieving an installed capacity of 382 GW against the peak demand of 187 GW during 2020-21. In this scenario, it is important that the generators are dispatched based on merit order i.e., from lower cost to higher cost for efficient utilisation of resources. However, this has been difficult to achieve in the current scenario where the distribution utilities (Discoms) are mostly procuring their power through long-term contracts on a self-scheduling basis. Under this mechanism, the Discoms are providing the schedule to their contracted capacity on a day-ahead basis without having visibility of any other cheaper generating station available in the system. As a result, there are situations where the capacities in efficient and cheaper generating stations have remained unutilised whereas the costlier ones have got dispatched.



Rajesh K Mediratta



Jogendra Behera

Central Electricity Regulatory Commission (CERC) in its discussion paper dated 31.08.2018 has analysed the above issue in detail and suggested Market Based Economic Dispatch (MBED) mechanism for dispatch of all generators through the market mechanism for achieving the efficiency. The Ministry of Power has also recently issued a consultation paper on MBED on 01.06.2021 echoing the similar views as that of CERC. However, as deliberated in these consultation papers, introduction of MBED would require structural changes in the power market and substantial changes in the existing regulatory framework. An alternate mechanism, namely the 'Gross Bidding' mechanism, which can be introduced in the Power Exchanges without requiring any change in the existing regulatory framework and yet could achieve the purpose of efficient dispatch through the market mechanism, has been discussed below.

Gross Bidding Mechanism:

Presently the Discoms are participating in the power exchanges on a 'net pool' basis, which essentially means that after fulfilling their demand mostly from the bilateral sources, the Discoms are participating in the spot market to fulfil their residual requirement. A few limitations associated with Discoms' participation on a 'net pool' basis approach are briefly discussed below:

- **Poor liquidity in the market:** The liquidity in the spot market continues to be in the range of 4-5% of the overall electricity transactions in the country of the order of ~1400 billion units and is not helping the cause of providing efficient pricing signals and dispatch of low-cost generators.
- **Limited cost optimisation by the distribution utilities:** Discoms are unable to avail the benefit of low prices in the spot market, particularly while scheduling their requirements from marginal stations (energy charge of the generator is close to market clearing price) due to uncertainties associated with transactions in power exchanges. For instance, in case a generator's energy charge is Rs. 3.5/unit and the prevailing rate at the Exchange is Rs. 3.00/unit, the Discom may still not prefer to replace such power looking at uncertainties involved with the clearing in the exchange.

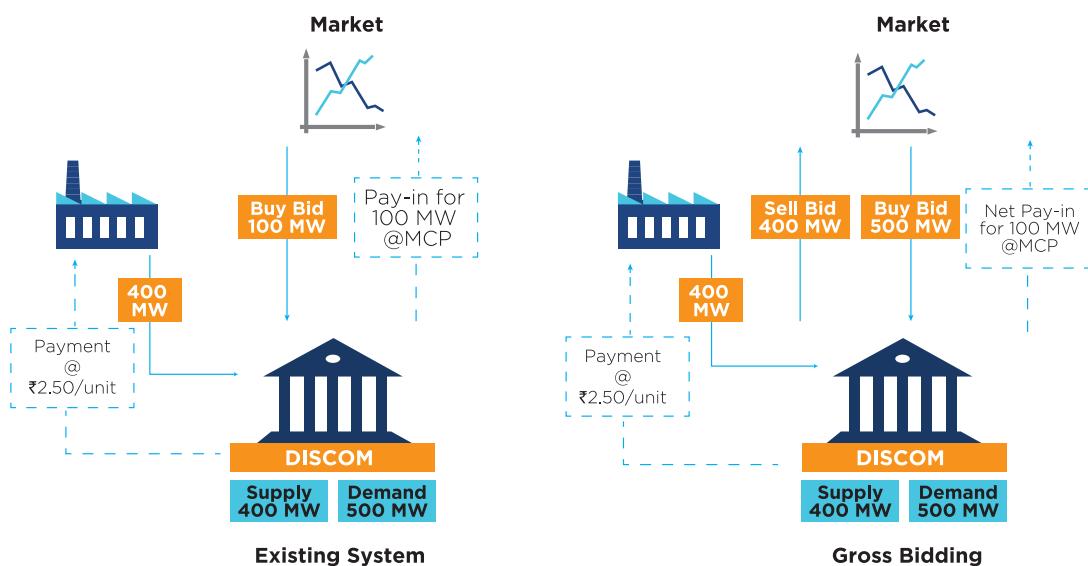
- **Underutilisation of cheaper generating assets:** A generating station, which is efficient and has low cost/cheaper power in an overall scenario but relatively a costlier one within a Discoms' portfolio, will not get dispatched resulting into inefficiency in the system.

The above limitations, to a large extent, can be addressed through the 'Gross Bidding' mechanism. Under this mechanism, both the generator and the Discom having long-term Power Purchase Agreement (PPA) will participate in the market and schedule their transactions through the Day-Ahead Market (DAM). Discom will place both buy and sell bids simultaneously for the contracted capacity in the market under a 'Gross Bidding portfolio' to be provided by the Power Exchange. Discom will place the sell bids at the agreed upon energy charges in PPA and buy bids as price inelastic bids in the DAM. Based on the demand and supply situation in the spot market, three different scenarios may emerge as discussed below:

- **Market Clearing Price (MCP) < Energy Charge (PPA):** In this scenario, the sell bids will be rejected as power will be available at a cheaper price in the Exchange. Discom will buy from the market at a price lower than the contracted energy charges. As the sell bid will not get cleared and the generator will not get dispatched, Discom will not be paying any energy charges to the generator. Discom will gain in this scenario by procuring power at a cheaper price.
- **Market Clearing Price (MCP) = Energy Charge (PPA):** In this scenario, both buy and sell bid will get cleared. Discom will buy from the market at the same price as energy charges and pass it on to the generator under PPA. In comparison to PPA, the Discom will not have any loss or gain.
- **Market Clearing Price (MCP) > Energy Charge (PPA):** In this scenario, again both buy and sell bid will get cleared. However, the pay-in and pay-out of the Discom will get exactly netted out with no additional obligation for the Discom. In case the Discom has lesser requirement i.e., buy quantum is less than the sell quantum, then the Discom will be able to gain on account of positive difference between MCP and energy charges.

Assuming that a Discom has a demand of 500 MW and it has entered into PPA with a generator and contracted a capacity of 400 MW at energy charges of Rs. 2.50/unit. As per the existing practice, Discom will self-schedule the 400 MW capacity under PPA and buy the remaining quantum i.e., 100 MW from the market. Whereas, in the proposed 'Gross Bidding' mechanism, Discom will place sell bids of 400 MW at Rs. 2.50/unit in the market and buy bid of 500 MW constituting of 400 MW of price inelastic bid and 100 MW of price sensitive bid. Depending on the demand and supply scenario, the sell bids of 400 MW will get cleared and accordingly the generator will get dispatched. The bidding as per the existing system i.e., net pool basis has been compared with the gross bidding in the figure below:

Illustration of Gross Bidding Mechanism



The different scenarios that can emerge in the market along with the net impact on Discoms' power procurement cost in these scenarios, are presented in the table below:

Discom Power Procurement Cost in Different Scenarios

S. No.	Scenario	MCP ₹/Unit	PPA Price ₹/Unit	Discom Power Procurement Cost (Rs. in lakh in a day)						Net Gain Loss	
				Existing System			Gross Bidding				
				Pay-out to Genco	Pay-out to Market	Total Pay-out	Pay-out to Genco	Pay-out to Market	Total Pay-out		
1	PCP<PPA Price	2	2.5	240#	48	228	0	240	240	48	
2	PCP=PPA Price	2.5	2.5	240	60	300	240	60	300	0	
3	PCP>PPA Price	3	2.5	240	72	312	240	72	312	0	

[MW*Hours in a Day*Rs./unit]/10^2

It is quite clear from the above illustration that when MCP<PPA Price, the generator who is not in the merit order will not get dispatched resulting into net savings in the power procurement cost of the Discom. In the other two scenarios, as MCP>=PPA Price, the generator will get dispatched through the market; however, the Discoms' financial position will remain neutral without any net gain or loss in its power procurement cost. Overall, the Discom will have an opportunity to save its power procurement cost while being hedged against any increase in prices in the market.

Benefits of Gross Bidding

Gross Bidding will be beneficial to the Discom, generator and the power market at large. It will be a win-win proposition for all the market participants as briefly discussed below:

- a. **Benefit to Discom:** Discom will be able to optimise their power procurement cost by replacing the costlier power with the cheaper power available in the market. As discussed above, in none of scenario the Discom will be incurring any loss. Besides, the Discom would not be required to pay upfront for the procurement of power as envisaged under the CERC MBED consultation paper.
- b. **Benefit to Generator:** Generator will continue to be paid fixed charges and energy charges as agreed upon in the PPA based on its dispatch through the market. In case the Discom does not require the capacity on any particular day, the generator may still get the dispatch through the market where other buyers are participating to meet their demand.
- c. **Benefit to Market:** The Gross Bidding will bring additional capacity to the DAM thereby increasing the liquidity in the market. Enhanced liquidity in the market will lead to further improvement in efficiency & robustness in price discovery. Gross Bidding was introduced by Nord Pool in 2011 followed by Japan Electricity Power Exchange (JEPX) in 2017 primarily to enhance liquidity in their spot market. Apart from increase in liquidity, the low-cost generators will also get dispatched before the costlier ones leading to most efficient resource utilisation. Particularly, the generators who are on the margins and Discom find it difficult to schedule such generators bilaterally, can be scheduled through the Gross Bidding mechanism benefiting the generator, Discom and the overall market.

Win-Win Proposition for All

 Buyer	 Seller	 Market
<p>Cost Optimisation</p> <p>Discoms will save power procurement cost by replacement of costlier power with cheap power available</p> <p>No Loss to Discoms</p> <p>Discom will not incur any loss & also no additional financial burden to pay upfront by the Discoms</p>	<p>Higher Dispatchability</p> <p>Probability of generators getting dispatched will increase with presence of additional buyers in the market</p> <p>No Change in PPA Conditions</p> <p>Generators will continue to be paid fixed charge and energy charge as per the long-term PPA</p>	<p>Efficient Price Discovery</p> <p>Enhance liquidity in Day-Ahead Market will improve efficiency & robustness in price discovery</p> <p>Efficient Utilisation of Resources</p> <p>Cheaper generating stations will get dispatched leading to efficient utilisation of resources</p>

Implementation Challenges

There are few implementation challenges associated with Gross Bidding, for example, how to participate in Gross Bidding portfolio when a generator has PPAs with multiple distribution utilities; how to ensure technical minimum through Gross Bidding; applicability of additional transmission charges & losses due to participation through Gross Bidding mechanism particularly for intra-state generators, etc. However, these issues are all operational in nature and decision regarding this can be taken by the parties involved, taking into consideration their own commercial interests. Going forward, some of these challenges can be addressed by suitably designing of the market and bringing the necessary regulatory changes.

Conclusion and Way Forward

Gross Bidding is easy to implement in the Power Exchanges with hardly any changes required in the existing regulatory framework. The Power Exchanges can introduce Gross Bidding by making suitable modification in their Business Rules subject to approval of CERC. Gross Bidding on a voluntary basis will achieve most of the efficiency related objectives envisaged by the regulator and policymaker. Gross Bidding will enable the generators and Discom having PPAs to participate in the Exchange and schedule their transactions through the Exchange in a competitive market scenario without deviating from their existing PPA terms & conditions, which are of binding in nature. This will enable the Discoms to optimise their power purchase cost by replacing expensive power with low-cost power available in the market. Gross Bidding will also bring more liquidity into the market and hence comparatively a more efficient & robust price discovery benefiting the sector & consumers at large.



TRADE INSIGHTS

DAY-AHEAD MARKET

AREA PRICES

Price (₹/kWh)

Area	Average	Minimum	Maximum
All India	3.06	0.60	9.67

VOLUME

1 MU = 1 Million kWh = 1 GWh

Volume	Sell Bids	Purchase Bids	Unconstrained Volume	Cleared Volume
Total Volume (MU)	8,579	5,306	4,317	4,314
Average Daily (MU)	286	177	144	144

PARTICIPATION

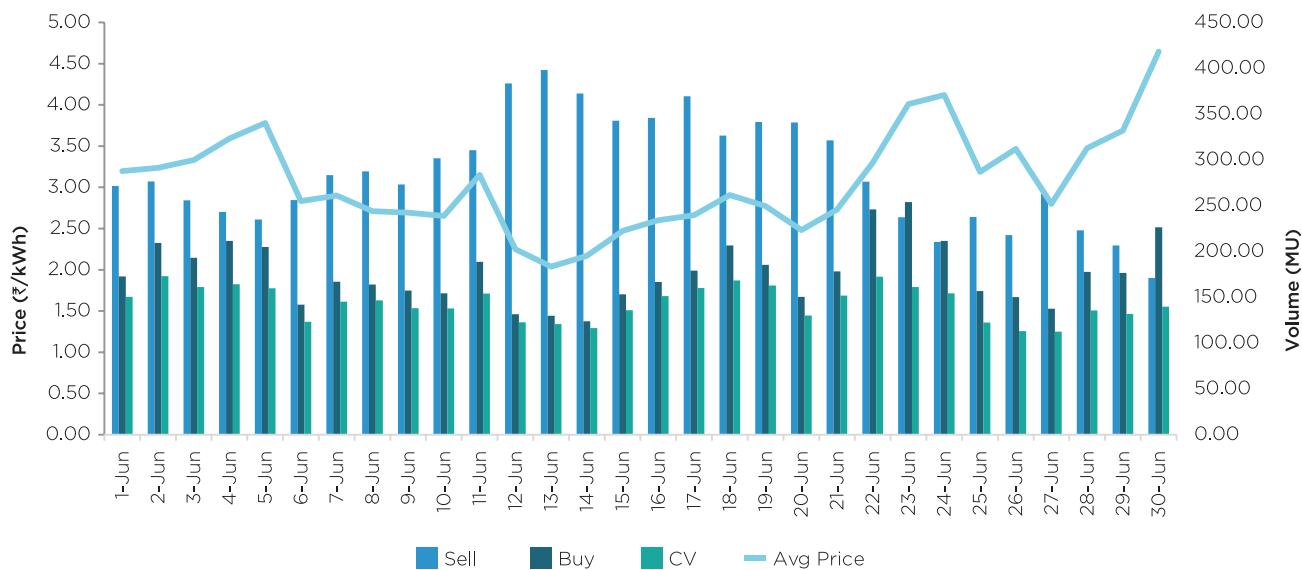
Total Registered Participants	Open Access Consumers	Private Generators
6900+	4,400+	550+

TERM-AHEAD MARKET

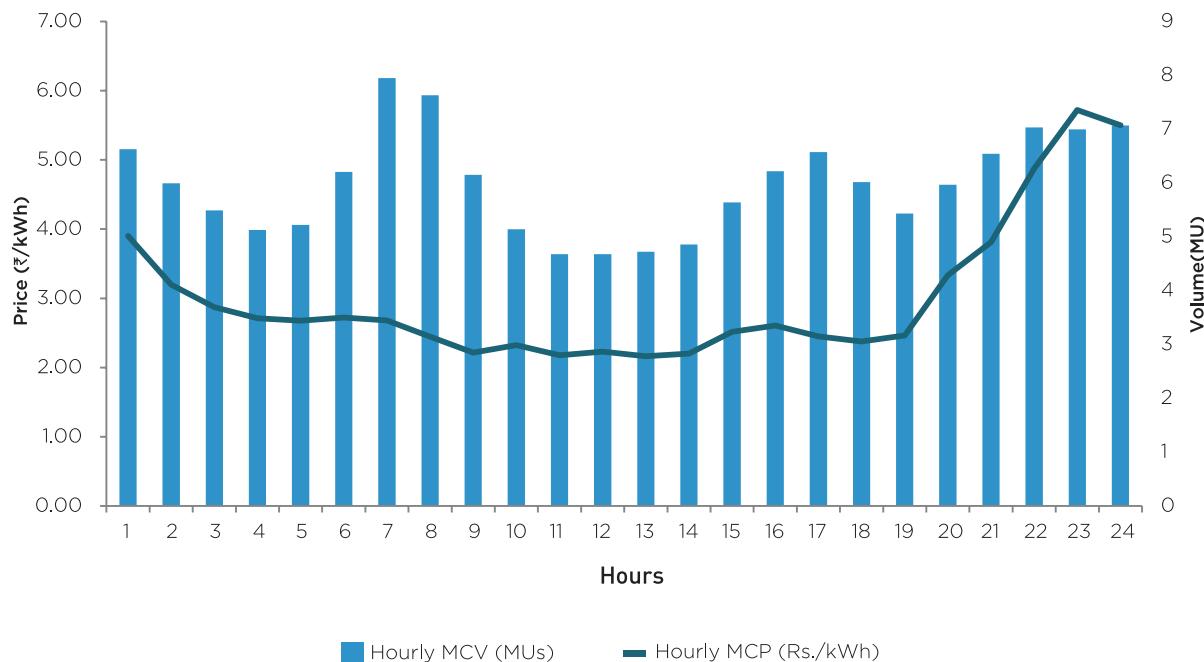
Contracts	Total Volume (MU)	Max. Price (₹/kWh)	Min. Price (₹/kWh)
Intra-day	15.99	8.00	2.05
Day-Ahead Contingency	316.43	8.56	1.47
Daily	308.47	3.05	2.67
Total TAM Volume	640.89		

DAY-AHEAD MARKET: ANALYTICS

Daily Trade Details



Average Hourly Market Clearing Volume and Price





REAL-TIME MARKET: ANALYTICS

AREA PRICES

Price (₹/kWh)

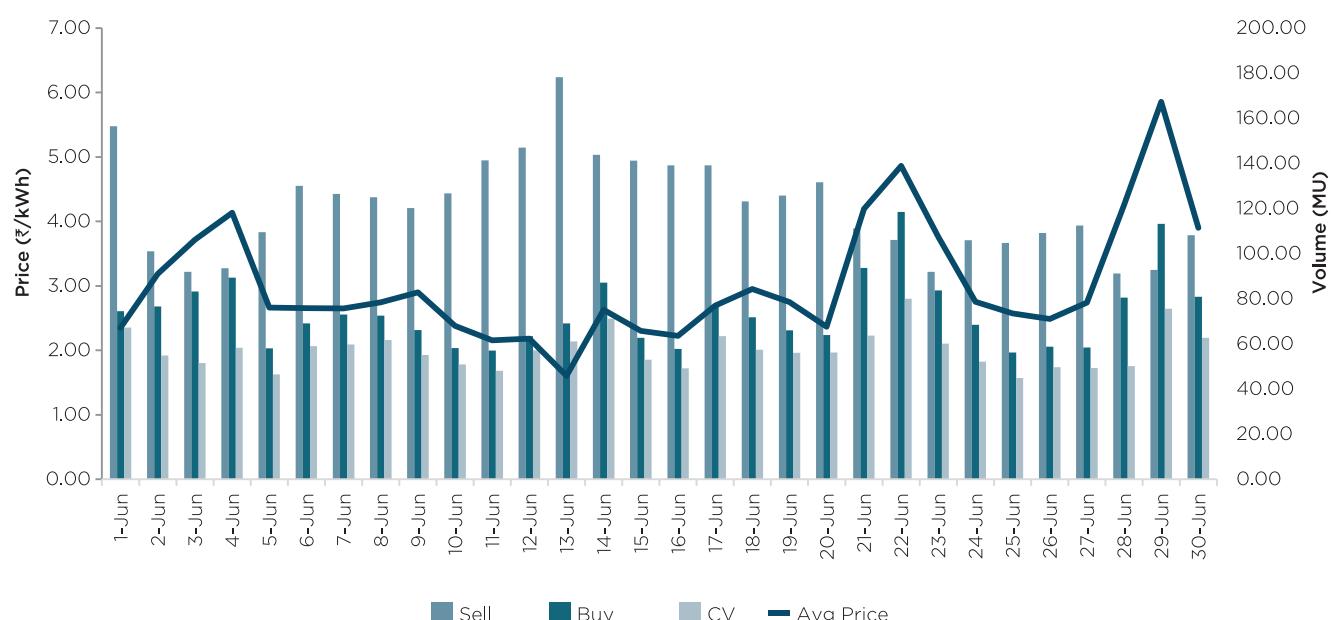


VOLUME

1 MU = 1 Million kWh = 1 GWh



Daily Trade Details



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