

FROM PRICE DISCOVERY TO PRICE MANAGEMENT: THE EXPANDING MANDATE OF INDIA'S POWER EXCHANGES

Abstract

India's organized electricity markets have moved from a residual balancing avenue to a mainstream procurement channel for electricity distribution companies (DISCOMs). This study contends that the sector is converging toward a three-tier architecture: a commoditized physical spot layer undergoing market coupling, a financial hedging layer led by the Multi Commodity Exchange (MCX), and a demand-side flexibility layer. In the year ahead, MCX's principal contribution will be to complement the spot exchanges, allowing DISCOMs to convert unpredictable peak-season price spikes into hedged costs.



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Introduction

The Indian Energy Exchange (IEX), incorporated in 2008, clears the overwhelming majority of short-term electricity traded outside long-term power purchase agreements (PPAs) (Business Standard, 2025). Two developments have changed this story in the past 18 months. First, national peak electricity demand has repeatedly hit new records, from a December high of about 241 GW in 2025 to an all-time peak of 256 GW on April 25, 2026, during a severe heatwave (IBEF, 2026; Down To Earth, 2026). Second, the regulatory architecture

underpinning organized trading began to change with the launch of cash-settled electricity futures on the Multi Commodity Exchange (MCX) in July 2025 and a contested move toward “market coupling” of the physical exchanges (ICICI Direct, 2025; Informist Media, 2026).

Electricity Distribution Companies (DISCOMs) face two problems that frequently work against each other. The first is adequacy: procuring sufficient power in real time to meet a demand curve that is steeper and less predictable owing to heat and growing renewable energy intermittency. The second is affordability: procuring power without widening the gap between the Average Cost of Supply (ACS) and Average Revenue Realized (ARR), a metric that regulators closely watch (News on Air, 2024). This article contends that physical exchanges have so far mainly solved adequacy, while the emerging financial derivatives layer, anchored by MCX, is the best instrument to address affordability. It draws on IEX's public disclosures, Central Electricity Regulatory Commission (CERC) orders, and recent judicial developments to offer a forward-looking view of physical and financial power markets in the coming years.

The Institutional Architecture of Organized Power Trading

India's short-term power market operates through two regulatory channels. Physical, delivery-based contracts are traded on exchanges regulated by the CERC: IEX, Power Exchange India Limited (PXIL), and the newly licensed Hindustan Power Exchange (HPX). These platforms host the Day-Ahead Market (DAM), Real-Time Market (RTM), Term-Ahead Market (TAM), Green Markets, and Renewable Energy Certificates (RECs) (Regulatory Despatch, 2025). Cash-settled financial derivatives, introduced only in 2025, are traded separately on SEBI-regulated exchanges, principally the MCX (ICICI Direct, 2025).

The IEX has historically commanded an overwhelming share of the physical market, variously cited as between 85% and 98% of the traded volume depending on the segment (ICICI Direct, n.d.; Enrich Money, 2025). Table 1 presents the segment-wise traded volumes on the IEX.

Table 1: Electricity Segment-Wise Traded Volume on IEX (FY24-FY26)

Segment	FY24 (MU)	FY25 (MU)	FY26 (MU)
Day-Ahead Market (DAM)	53,353	61,311	Growing; record 5,547 MU in March 2025
Real-Time Market (RTM)	30,125	38,898	Fastest-growing; up 39-47% y-o-y
Total electricity traded	~106,000	121,000	141,000 (highest ever)
Renewable Energy Certificates (lakh units)	89	178	Volatile; down ~30-40% y-o-y

Source: Business Standard (2025), Stockanalysis (2026), ScanX (2025). Note: MU = million units.

Table 1 shows that growth has extended beyond the oldest product, the DAM. The RTM, introduced

only in 2020, has grown faster than the DAM in every recent period and, by FY26, had become the single largest driver of incremental volume (Stockanalysis, 2026; Business Today, 2025).

Meeting Peak Demand: The Real-Time Market as the Marginal Balancing Tool

The RTM allows transactions for delivery within the same operating day, with contracts as granular as 15 minutes. For a DISCOM confronting a forecast error, whether because a heatwave arrived early or solar generation fell away faster than expected at dusk, the RTM is now the fastest mechanism for closing that gap without resorting to costly emergency diesel or unscheduled interchange penalties. During the record April 2026 peak, solar and hydro met roughly 30% of the instantaneous demand, but the evening ramp-down of solar compelled gas-based generation to rise from 4.9 GW to 9.1 GW within the peak window, even though gas remained a more costly marginal fuel (Down To Earth, 2026). The RTM is a shared marketplace through which such marginal, short-notice capacity is priced and allocated across DISCOMs, rather than being confined to the state that owns the peaking plant.

State policies reinforce reliance on spot markets for adequacy. One example is Maharashtra's introduction of a demand flexibility portfolio obligation, which mandates DISCOMs to configure a portfolio of flexible and controllable loads to the extent of 1.5% of the previous year's peak demand by FY26, increasing to 3.5% by FY30 (Norton Rose Fulbright, 2026). The market structure and regulation are leading DISCOMs to adopt a portfolio approach: long-term PPAs for base load, RTM purchases for marginal balancing, and demand flexibility for peak-load shaving.

Cost Discipline

Liquidity improved in physical exchanges as the wholesale prices declined. The average DAM price on IEX declined by 12.5% year-on-year to Rs 3.93 per unit in Q2 FY26, while the RTM price decreased by 16.1% to Rs 3.51 per unit in the same quarter. Indeed, the ample supply from hydro, wind, and coal brought prices down to record lows, as one 15-minute block was sold at Rs 0.01/kWh in

August 2025 (Business Today, 2025). In October 2025, the average DAM price fell further to Rs 2.67 per unit and the RTM price to Rs 2.73 per unit (ScanX, 2025).

The IEA's Electricity 2026 report corroborates this nationally, estimating that India's average wholesale price declined by 16% year-on-year in 2025 to approximately USD 46 per MWh, partly attributable to India's limited exposure to gas price shocks (Norton Rose Fulbright, 2026).

Table 2: Average Market Clearing Prices on IEX (DAM and RTM)

Period	DAM (Rs/unit)	RTM (Rs/unit)	Y-o-Y Change
Q2 FY25 (derived)	4.49	4.18	Base period
Q2 FY26 (Jul-Sep 2025)	3.93	3.51	-12.5% / -16.1%
September 2025	3.58	3.31	-14.5% / -16.8%
October 2025	2.67	2.73	-32.0% / -27.8%

Source: Business Today (2025) and ScanX (2025).

The gap between the ACS and ARR of DISCOMs narrowed from 45 paise per unit in FY23 to 21 paise per unit in FY24 (News on Air, 2024). Attributing the entire reduction to exchange trading would be an exaggeration, as other factors, such as the rationalization of tariffs and subsidy reform, were also involved. Nevertheless, these exchanges have plausibly contributed in two ways. First, lower prices could reflect better and more transparent pricing of the marginal unit, as more participation provides deeper liquidity and reduces spreads. Second, the exchanges have aided price discovery, giving DISCOMs a sense of what power should cost at a given time.

However, price discovery alone does not manage price risk. A DISCOM that notices a price increase during a heatwave gains information but is not insulated from paying a higher price. The derivatives segment was introduced precisely to address this exposure.

Enter MCX: From Physical Spot Trading to Financial Risk Management

On June 6, 2025, SEBI approved the first electricity derivative contracts, and on July 10, 2025, MCX launched cash-settled electricity futures following a jurisdictional dispute between SEBI and the CERC, which had been ongoing since 2005 (Business Upturn, 2025; Angel One, 2025). The contract trades under the symbol "ELECTR" and is cash-settled based on the volume-weighted average of the unconstrained market-clearing price, discovered from the DAM in IEX, and has a lot size of 50 MWh and daily price limits of 6 per cent (ICICI Direct, 2025). Purely financial, cash-settled instruments fall under SEBI's jurisdiction and trade on securities exchanges, primarily MCX and the National Stock Exchange (NSE), whereas physical, delivery-based contracts fall under the CERC's jurisdiction and trade on IEX, PXIL, and HPX (Zerodha Varsity, 2026; Regulatory Despatch, 2025).

Table 3: Physical Spot Exchanges vs. Financial Derivatives Exchanges

Feature	Physical (IEX, PXIL, HPX)	Financial (MCX, NSE)
Regulator	CERC	SEBI
Settlement	Physical delivery	Cash-settled
Core products	DAM, RTM, TAM, Green Markets, RECs	Electricity futures (options prospective)
Underlying reference	Actual bids/offers	IEX DAM Unconstrained Market Clearing Price
Primary user need	Physical demand adequacy	Price/cost risk management
Operational since	2008 (IEX)	10 July 2025 (MCX)

Source: ICICI Direct (2025), Zerodha Varsity (2026), Regulatory Despatch (2025).

This separation allows each exchange to specialize in a specific field. CERC-regulated exchanges are custodians of physical delivery

and grid security, and every trade must be supported by a real injection or withdrawal. In contrast, exchanges regulated by SEBI may provide standardized, liquid financial contracts that any DISCOM treasury can use to hedge prices for a contract month well in advance, without the DISCOM needing to act as a physical counterparty. A DISCOM will look to the RTM to answer “Will the power arrive?” and to an MCX futures contract to answer “Will it be affordable?”



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power-purchase cost for tariff filings in advance, converting an unknown exposure into a known one. Once introduced, options would allow DISCOMs to cap their cost exposure while retaining the benefit of falling prices.

Third, the MCX and physical exchanges must complement each other in the field of renewable energy variability. With solar and wind capacity climbing rapidly towards the

Role of MCX and Its Peers in the Year Ahead

Three developments are likely to define the next twelve months. First, the physical layer will be reorganized through market coupling. The CERC's order of July 23, 2025, proposed aggregating bids from IEX, PXIL, and HPX into a single national clearing price for the DAM, operated by Grid-India on a phased basis (Power Peak Digest, 2026). IEX contested the move before the Appellate Tribunal for Electricity and the Supreme Court, contending that coupling would erase liquidity advantages without a clear efficiency benefit. The Court has so far declined to grant an interim stay (Informist Media, 2026; Sahi, 2026). Whatever the outcome, the direction is toward a single national spot price rather than three competing venues, which strengthens the case for a separate hedging layer. Once the spot price becomes an administered price, the question shifts from “which exchange gives the best price” to “how to hedge against that price,” which is precisely the offering of the MCX and NSE.

Second, MCX is likely to extend its product suite from single-month futures to a longer curve and eventually to options trading. A DISCOM's planning problem is not a single day's price but a seasonal exposure. The gap between the projected 270 GW peak and the 256 GW instantaneous peak in April 2026 demonstrates that this can run into tens of gigawatts (Down To Earth, 2026). A strip of futures purchased ahead of the April-June peak would allow a DISCOM to budget its

government's target of 500 GW of non-fossil capacity by 2030 and peak load demand projected to increase from around 289 GW in FY27 to 459 GW by FY36, the volatility DISCOMs face will increasingly be weather-driven rather than load-driven (Mercom India, 2026; IBEF, 2026). Physical exchanges, particularly the Green Day-Ahead and Green Term-Ahead Markets, are best suited to provide flexibility in matching renewable generation and demand, whereas MCX-style contracts can be best used for hedging the cost or revenue risk caused by price variability.

A coupled, single-price physical market and a liquid derivatives market are not substitutes. They are, respectively, a clock and an insurance policy. DISCOMs need an accurate clock to buy the marginal unit at the right moment (increasingly the role of IEX, PXIL, HPX, and RTM growth) and an insurance policy to keep the bill for that clock's readings from swinging consumer tariffs out of control (the role now opening for MCX and, prospectively, the NSE). Regulatory energy would be better spent ensuring that insurance policies are well designed. This means lot sizes and tenors suited to DISCOM treasuries, which are not sophisticated derivative users; disclosure norms that allow regulators to see hedging positions when approving tariffs; and coordination between the CERC and SEBI, so that both layers reference a genuinely representative and tamper-resistant price.

Conclusion

India's organized power markets are already more effective in answering the adequacy question

of physical capacity than most observers thought a decade ago, with the RTM proving to be the fastest-growing segment of the market to address DISCOMs' peak-hour shortages. However, cost predictability has not yet been fully addressed. Even as physical exchanges move through a contested transition to market coupling, the launch of cash-settled electricity futures on the MCX in July 2025 has added a second layer of market infrastructure. The more interesting question is not which exchange will 'win' but how regulators should govern the volatility that electricity spot markets so effectively expose. Given the maturing three-tier architecture — physical spot, financial hedging, and demand-side flexibility — this governance should be designed to enable DISCOMs to plan their costs. Ultimately, when it comes to protecting the consumer's tariff, what matters most is not the outcome of the exchange rivalry but getting the design of this new hedging layer correct. **MA**

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