NSE

Monthly

Electricity Futures

A New Era in India’s

POWER RISK MANAGEMENT

1 NATION
GRID
PRICE

NSE share in India's **Electricity Futures** Market

70%

What Are Electricity Futures?

Electricity Futures are standardized, **cash-settled monthly contracts** that allow market participants to fix prices for future electricity delivery periods — without needing physical delivery. These contracts enable **hedging**, power procurement planning , and allow capital investment across the electricity value chain.

Why Electricity Needs Derivatives – The Indian Context

- **- 1900 BU** of electricity generated in a year, but only **5%** trades on volatile day ahead spot markets
- All bilateral trade prices are driven by DAM spot market. Absence of Hedging instruments lead to volatility and inaccurate price signals
- No formal mechanism for **hedging electricity price risks** faced by generators, discoms, C&I consumers and traders
- **To increase demand elasticity in the electricity market**

Electricity Futures introduces transparency, forward visibility, and a toolset for price discovery and stability

Who all will get the benefits:

Segment	Use Case
Generators	Lock-in merchant power prices, reduce revenue volatility
Discoms	Budget certainty, hedge short-term procurement costs
RE Developers	Support financing by creating predictable cash flows
Industrial Users	Fix input energy cost, enhance export pricing certainty
Traders/FPIs	Hedge based on grid demand, seasonal trends
Retail Customers	All retail including domestic and commercial customers having minimum electricity load up to 70 KW can participate to hedge some price risk.

Contract Specifications

Parameter	Particulars Monthly Contract - Base Load
Commodity Name	ELECTRICITY FUTURES (ELECMBL)
Contract available for Trading	Available for 12 Calendar Months. Contracts are listed for current and next 3 Months
Contract Start Day	1st business day of the launch month
Last Day of Trading	Business day immediately preceding the last calendar day of the contract expiry month
Contract Duration	Four months
Trading Days	Monday to Friday
Trading Session	9:00 a.m. to 11:30 p.m. /11:55 p.m.(As per US Day light savings)
Price Quote Basis	Rs. per MWh (excluding all taxes and levies)
Trading Unit	50 MWh
Tick size	Rs. 1 per MWh
Daily price limit	As per recent SEBI circular no. SEBI/HO/CDMRD/DNPMP/CIR /P/2021/9 dated 11th January 2021 regarding "Revision in Daily Price Limits (DPL) for Commodity Futures Contracts" • Initial Slab: 6% • Enhanced Slab: 3% • Aggregate DPL: 9%
Initial margin	Minimum 10% or based on SPAN, whichever is higher
Additional/Special Margin	In case of additional volatility, an additional margin (on both buy & sell side) and/ or special margin (on either buy or sell side) at such percentage, as deemed fit, will be imposed in respect of all outstanding positions.
Maximum Allowable Open Position	For individual clients: 3 lakh MWh or 5% of the market wide-open position, whichever is higher. For a member collectively for all clients: 30 lakh MWh or 20% of the market-wide position, whichever is higher.
Daily Settlement Price (DSP)	All outstanding positions in Future contracts would be marked to market daily based on the Daily Settlement Price (DSP) as determined by exchanges as prescribed under SEBI's Master Circulars issued time to time
Final Settlement Price	DDR based on volume weighted average of the DAM-UMCPs (Unconstrained Market Clearing Price) of all three exchanges of all the calendar days of the expiry month. With a pre-determined equation as notified by the exchange
Settlement	Cash Settled

Electricity Futures | Trade Metrics (ELECMBL, 11months trade)

NSE's Approach to Transparent and Inclusive Price Discovery

1. **Unified Pricing:** Based on "One Nation, One Grid, One Price"; not limited to a single PX or segment.

2. **Scientific VWAP Methodology:** Uses global best practices across 96 blocks, factoring in price & volume from all 3 PXs.

3. **All-Inclusive Market Segments:** Covers Conventional, Green, and High Price DAM segments (calculated and provided by PXIL).

4. **Green Power Recognition:** NSE integrates green power into its pricing, promoting sustainability.

5. **Holistic Price Discovery:** VWAP formula ensures fair pricing:
Daily Volume-Weighted Average Price(VWAP) of 96 Blocks (Per Exchange)

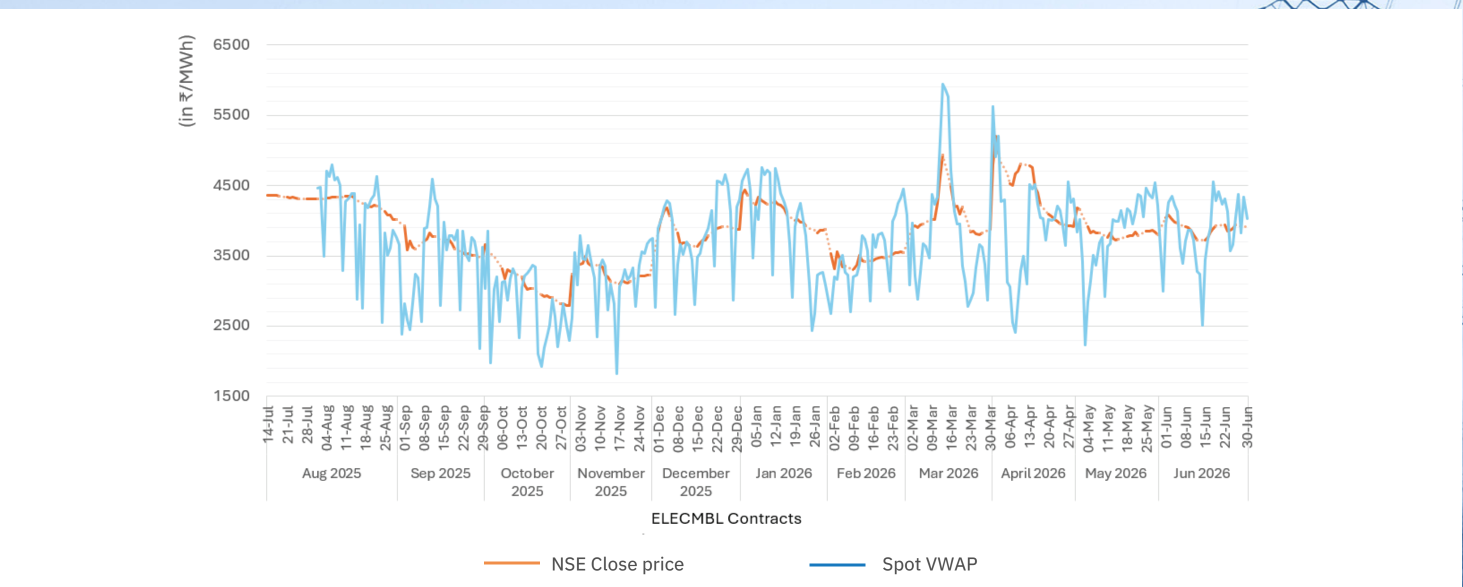
$$\textit{Daily VWAP}=\frac{\sum_{t=1}^{96} MCP_t \, x MCV_t}{MCV_t}$$

MCP_t: Market Clearing Price for 15 min Blocks
MCV_t: Market Clearing Volume for 15 min Blocks

Due Date Rate= Average of VWAP of all days in the month
Daily VWAP is calculated using 15-minute block-wise MCP and MCV across 3 exchanges (PXIL, IEX, HPX) and 3 market segments (DAM, GDAM, HPDAM)

Aug 2025 Contract to June 2026 Contract ELECMBL Trade Metrics

7,00,956 Total Lots Traded	**35,048 MUs** NSE Volume	**67,943 MUs** DAM Volume	**₹ 13,468 Cr.** NSE Turnover	**~70%** Market Share



Source: NSE, till 30th June 2026

NSE's Certificate Course- Fundamentals of Electricity Derivatives

- **Build a Strong Foundation**
  Master the structure and functioning of electricity futures in India's power markets.
- **Enhance Strategic Skills**
  Learn risk management, hedging techniques, and price discovery mechanisms.
- **Stay Ahead in a Dynamic Sector**
  Deepen your understanding of India's evolving power landscape.
- **Earn an NSE Certificate**
  Complete the course and final quiz to receive a prestigious certification.
- **Enroll Today!**
  Boost your professional credentials and industry knowledge.

We value your feedback and look forward to your testimonial!

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Fundamentals of Electricity Derivatives

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Physical Market Insights on NSE's Product Information Page

The Physical Supply Position:

- **Strategic Importance:** This tracks the real-time balance between electricity demand and available generation across the grid. Any mismatch — whether due to generation shortfall, fuel supply issues, or load surge — affects how the system operates. Monitoring this helps identify stress points early and allows stakeholders to plan short-term supply or adjust load accordingly
- Impact on Spot Prices: When demand consistently exceeds generation, it results in higher clearing prices on power exchanges. Conversely, surplus generation leads to lower prices. Participants who track supply position trends can anticipate these price movements, allowing them to optimize short-term procurement or enter hedging positions in futures more effectively.

Source Wise Generation

- **Strategic Importance:** This tracks how much electricity is being generated from different sources — coal, gas, hydro, nuclear, and renewables. Each source has a different cost structure and availability pattern. Understanding this mix helps market participants assess cost pressure and forecast short-term price trends.
- Impact on Spot Prices: A higher share of renewables usually brings down the average market price but increases volatility due to weather-related variability. On the other hand, thermal generation (coal/gas) offers more stable supply but at higher cost, which can lift prices when renewables fall short.

Type	Apr-25 to May-25 (BU)	Apr-26 to May-26 (BU)	% Change w.r.t Apr-25 to May-25
Thermal	233.17	245.09	5.11%
Nuclear	10.09	10.86	7.67%
Hydro (Large)	22.88	23.52	2.77%
RES including SHP	50.45	63.94	26.74%
Bhutan Import	0.73	0.53	-27.14%
All India	317.32	343.94	8.39%

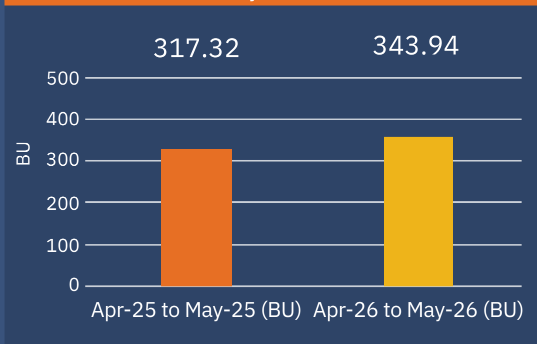
Source: CEA, till 31st May 2026

All India Generation Renewables in BU

Renewables	Apr-25 to May-25	Apr-26 to May-26
Wind	17.00	18.31
Solar	30.12	42.48
Biomass	0.69	0.74
Bagasse	0.68	0.66
Small Hydro	1.47	1.21
Others	0.50	0.54
Total :	50.45	63.94

Source: CEA, till 31st May 2026

Electricity Generation



Source: CEA, till 31st May 2026

Week Ahead All India Demand Forecast

- **Strategic Importance:** Released by Grid-India, this forecast estimates national and regional electricity demand for the upcoming 7 days. It supports generators, discoms, and traders in planning short-term procurement, generation scheduling, and hedging through near-term electricity futures.
- **Impact on Spot Prices:** When demand is forecasted to rise, participants often anticipate tighter supply conditions. This expectation can lead to early price movements on spot exchanges as buyers secure power in advance, pushing prices upward.

Region wise transmission flow in Real time

- **Strategic Importance:** India's unified grid connects five major regions — North, South, East, West, and North-East. Real-time transmission flow data shows inter-regional transfers, congestion, and whether a region is in surplus or deficit. This helps stakeholders assess grid stress and plan short-term dispatch or drawal accordingly.
- **Impact on Spot Prices:** Transmission congestion restricts flow between regions, causing market splitting and price differences across bid areas. For Electricity Futures participants, this data helps assess regional risk, anticipate localized volatility, and understand how price signals may diverge from the national average.

Projected range of reserve requirement: TRAS-Up & TRAS-Down

- **Strategic Importance:** TRAS (Tertiary Reserve Ancillary Services), projected by NLDC, indicates expected balancing needs in the grid. A higher TRAS-Up signals possible shortfall in supply or surge in demand. TRAS-Down suggests excess generation. This acts as a forward signal of system stress or surplus and supports pre-emptive market planning.
- **Impact on Spot Prices:** Elevated TRAS-Up projections often precede price increases in spot markets, especially during peak demand or supply shortages. On the other hand, high TRAS-Down projections — typically during strong renewable generation or weak demand — are associated with lower clearing prices on exchanges.

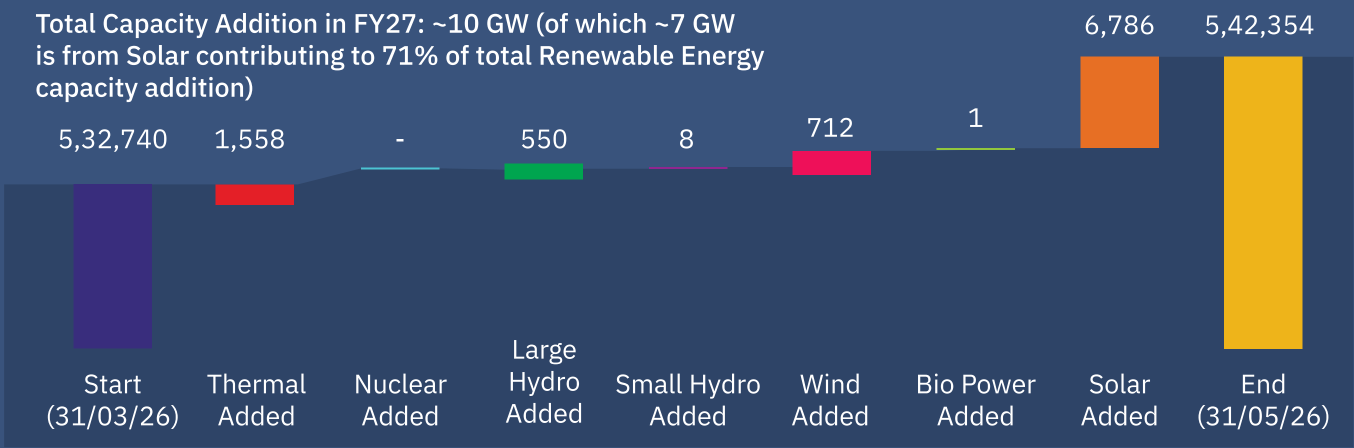
Weather Forecast Rain, wind direction & temperature

- **Strategic Importance:** Weather conditions directly influence electricity demand and supply. High temperatures drive cooling demand, while rain affects irrigation load. Wind and solar output depend on seasonal patterns. Monitoring these factors helps anticipate shifts in grid balance.
- **Impact on Spot Prices:** Sudden changes in weather can reduce renewable generation or increase demand sharply, leading to spot price volatility. Accurate weather forecasts allow participants to prepare for such shifts and manage their exposure through short-term trades or electricity futures.

Monthly report on short term Transaction of Electricity in India

- **Strategic Importance:** This report tracks traded volumes across bilateral contracts, day-ahead markets, and other short-term segments. It offers insight into how actively market participants are procuring power outside long-term PPAs and reflects liquidity in the physical market.
- **Impact on Spot Prices:** By observing transaction patterns, the report helps identify seasonal trends and the relationship between traded volumes and prices. For hedgers, it serves as a tool to understand spot price risk and align futures positions accordingly.

Total Capacity Addition in FY27: ~10 GW (of which ~7 GW is from Solar contributing to 71% of total Renewable Energy capacity addition)



Source: CEA, till 31st May 2026

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