



IEX BULLETIN



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REGULATORY NEWS

Orissa Electricity Regulatory Commission Issues Draft (Promotion of Renewable Energy through Green Energy Open Access) Regulations, 2023

On 31st July 2023, the Orissa Electricity Regulatory Commission issued the draft (Promotion of Renewable Energy through Green Energy Open Access) Regulations, 2023. According to the draft:

Green Open Access Consumer means any person who has CD or sanctioned load ≥ 100 kW or as specified by OERC, except for captive.

GEOA consumers shall not change the quantum of power consumed through open access for at least twelve-time blocks.

GEOA to be allowed by the nodal agency within a period of 15 days.

Commission may fix a lower CSS in the situation of shortages and load shedding by the distribution licensee.

Payment for unutilised banked energy shall be treated as deemed purchase by GRIDCO and shall be limited to 10% of the banked energy.

Banking charge for solar generation shall be @ 10% of the energy banked. Banking charge for wind or solar & wind hybrid generation shall be 5% of the energy banked.

Central Electricity Regulatory Declares Effective Date of Regulations

On 3rd August 2023, the Central Electricity Regulatory Commission (CERC) declared the effective dates of the following Regulations:

CERC (Sharing of Inter-State Transmission Charges and Losses) (First Amendment) Regulations, 2023 shall come into force with effect from 1st October, 2023

CERC (Indian Electricity Grid Code) Regulations, 2023, shall come into force with effect from 1st October, 2023.

Remaining Regulations of GNA Regulations including First Amendment Regulations shall come into effect from 1st October, 2023.

Maharashtra Electricity Regulatory Commission Issues Draft First Amendment (Renewable Purchase Obligation, its Compliance and Implementation of Renewable Energy Certificate Framework) Regulations, 2023

On 5th August 2023, the Maharashtra Electricity Regulatory Commission (MERC) issued the draft 1st amendment to the (Renewable Purchase Obligation, its Compliance and Implementation of Renewable Energy Certificate Framework) Regulations, 2023. According to the amendment:

Defined RPO trajectory for FY 2024-25 to FY 2029-30 in-line with MoP.

Wind RPO- may be met from Wind Power Projects commissioned after 31st March, 2022 and from wind energy consumed over & above 7% of total energy consumption, from WPPs commissioned till 31st March, 2022

HPO- may be met from hydro power projects (including PSPs or SHPs), commissioned after 8th March, 2019.

Other RPO may be met from any RE power project not mentioned above.

Storage RPO- %age of energy consumed from solar/wind with storage.

Discom with peak demand <10 MW, captive user of captive genco with installed capacity of 1 MW & above, and OA Consumers with CD of 1 MW and above, required to meet only the composite RPO target.

Green energy purchased from Discom or RE sources other than Discom in excess of RPO to be counted towards RPO compliance of Discom.

Any shortfall in meeting the RPO target specified in the regulation, the shortfall may be carried forward from FY 2020-21 and FY 2021-22 to FY 2022-23, from FY 2023-24 to FY 2024-25, from FY 2025-26 and FY 2026-27 to FY 2027-28 and from FY 2028-29 to FY 2029-30 and obligated Entity shall meet such shortfall on cumulative basis by 31st March 2023, 31st March 2025, 31st March 2028 and 31st March 2030, respectively.

Discom ARR shall be reduced at a rate of Rs 0.10 per kWh for cumulative shortfall in total RE procurement target for each year.

Cumulative shortfall in RE procurement as on 31st March 2023 and/or 31st March 2025 and/or 31st March 2028 and/or 31st March 2030 shall not be carried forward for next year and be adjusted by imposing reduction in ARR for distribution licensees and penalty for other obligated entities, at rate of floor price of respective REC as on that date.

Maharashtra Electricity Regulatory Commission Issues Draft Second Amendment (Distribution Open Access) Regulations, 2023

On 5th August 2023, the Maharashtra Electricity Regulatory Commission (MERC) issued the second amendment (Distribution Open Access) Regulations 2023. The amendments were as follows:

Draft regulation incorporated provisions for green energy open access in line with the MoP rules.

Eligibility to GEOA: Consumers having contract demand or sanctioned load of 100 kW or more or entity through multiple connections aggregating 100 kW or more located in same electricity division of a distribution licensee.

Green energy open access consumers shall not change the quantum of power consumed through open access for at least twelve-time blocks

Formats and timelines devised by Central Nodal Agency as per provisions of rules shall be followed for seeking green energy open access

Banking charges shall be adjusted in kind @ 8% of the energy banked

Renewable energy generating station shall be entitled to get Renewable Energy Certificates to the extent of the lapsed banked energy

CERC Issues Directions under Clause (2) of Part-7 Miscellaneous of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010, in Special Circumstances

On 15th August 2023, the Central Electricity Regulatory Commission (CERC) issued directions under Clause (2) of Part-7 Miscellaneous of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010, in Special Circumstances. According to the directions:

The SLDCs are directed to advise drawl schedules to the respective RLDC by 10 AM on day-ahead basis for the next day.

Under Clause 7 of Regulation 6.5 of the Grid Code 2010, in addition to conveying an ex-power plant despatch schedule at 6 pm, RLDC shall also convey ex-power plant “despatch schedule” to each of the ISGS, in MW for a different time block, for the ‘D’ day by 10.30 AM on ‘D-1’ day based on drawal schedules advised by SLDCs by 10 AM on ‘D-1’ day.

ISGS allowed to sell the power un-requisitioned by the beneficiaries after drawl schedules are provided by SLDCs at 10 AM. The power sold in DAM market by generating company, shall not be allowed to be scheduled by the original beneficiary(ies). However, any power remaining unsold in a generating station after the DAM market results may be requisitioned by the beneficiary(ies).

The sharing of gains from the sale of un-requisitioned power by the generating station shall be governed in terms of the LPS Rules.

Central Electricity Regulatory Commission Releases Staff Paper on Market Coupling

On 21st August 2023, the Central Electricity Regulatory Commission (CERC) released a staff paper on market coupling seeking public comments till September 30th 2023. According to the paper:

Market Coupling means the process whereby collected bids from all the power exchanges are matched, after taking into account all bid types, to discover the uniform MCP for DAM or RTM or any other market as notified by the Commission, subject to market splitting.

Objectives of Market Coupling: (1) Discovery of uniform MCP for DAM or RTM or any other market as notified by the Commission; (2) Optimal use of transmission infrastructure; (3) Maximisation of economic surplus, after taking into account all bid types and creating simultaneous buyer-seller surplus.

The paper discusses on the international experience of market coupling:

- o Evolution of Market Coupling in the European Market
- o Germany – from Multiple Exchanges to Single Exchange

Market Coupling in the Indian Context: Globally, market coupling has been introduced to integrate two or more electricity markets or different geographies.

Benefits of market coupling as per some stakeholders:

- o Discovery of a uniform market clearing price
- o Optimal use of transmission infrastructure
- o Maximisation of economic surplus
- o Improvement in liquidity and prices

Challenges of market coupling as per some stakeholders:

- o Diminished role of power exchanges
- o Dampen innovation & technology investments
- o Reduce competition
- o Discourage investments
- o No improvement in transmission utilisation

Points of discussion from the Staff Paper:

- o Does the current Indian power market scenario form a compelling case for market coupling?
- o Effect of coupling on technological innovation and competition
- o Who shall be the Market Coupling Operator?- (a) Power exchanges to perform the function of market coupling operator on rotation basis; (b) Third-party market coupling operator/ Super-Exchange
- o Which algorithm should be adopted for a coupled market?
- o How will the clearing & settlement be carried out?
- o Changes in the settlement process
- o In which market segment should the coupling be introduced first?

POWER INSIGHTS: AUGUST 2023

Capacity

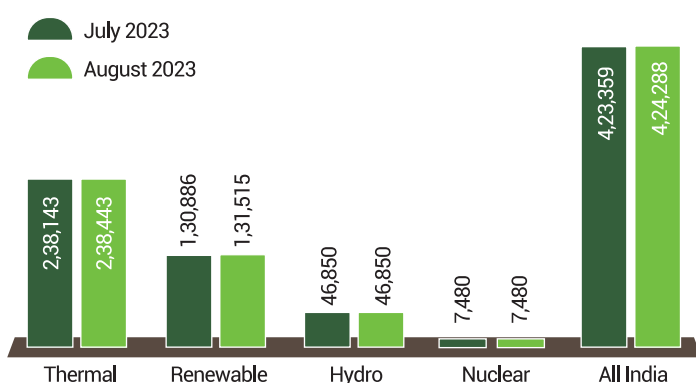
In August 2023, all India installed capacity stood at 4,24,288 MW with capacity addition of 928 MW during the month with break-up as below:

Thermal: 300 MW (Increase) • **Renewable:** 628 MW (Increase) • **Hydro:** No change • **Nuclear:** No change

All India peak demand met printed at 2,36,598 MW during April'23 – August'23 registering a 14.2% YoY increase from 2,07,231 MW during April'22 – August'22.

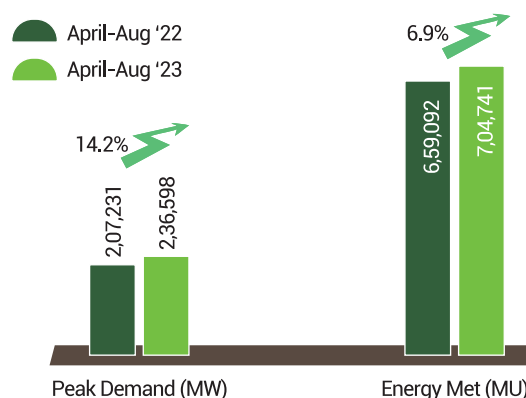
All India energy met was higher by 6.9% at 704.7 BUs during April'23-August'23 compared with 659.1 BUs during April'22 – August'22.

All India Installed Capacity (in MW)



(Source: www.cea.nic.in)

Demand and Supply Position



Peak Demand Met Comparison of Key States

The comparison of the peak demand met in the key states during April – August 2022 and April – August 2023 is as here under:

| State | Apr-Aug '22 | Apr-Aug '23 | YoY (%) |
|------------------|-----------------|-----------------|--------------|
| Maharashtra | 28,846 | 28,584 | -0.9% |
| Gujarat | 21,382 | 22,972 | 7.4% |
| Madhya Pradesh | 12,592 | 13,605 | 8.0% |
| Uttar Pradesh | 25,951 | 28,284 | 9.0% |
| Punjab | 14,311 | 15,293 | 6.9% |
| Andhra Pradesh | 12,293 | 12,900 | 4.9% |
| Haryana | 12,768 | 12,844 | 0.6% |
| Tamil Nadu | 17,248 | 19,045 | 10.4% |
| Karnataka | 14,725 | 16,950 | 15.1% |
| Telangana | 13,636 | 14,816 | 8.7% |
| All India | 2,07,231 | 2,36,598 | 14.2% |

(Source: www.cea.nic.in)

Energy Met Comparison of Key States

The comparison of the energy met in the key states April – August 2022 and April – August 2023 is as here under:

| State | Apr-Aug '22 | Apr-Aug '23 | YoY (%) |
|------------------|-----------------|-----------------|-------------|
| Rajasthan | 40,249 | 42,200 | 4.8% |
| Uttar Pradesh | 71,499 | 70,478 | -1.4% |
| Gujarat | 58,967 | 64,592 | 9.5% |
| Haryana | 30,040 | 29,612 | -1.4% |
| Punjab | 35,646 | 34,367 | -3.6% |
| Maharashtra | 78,572 | 86,192 | 9.7% |
| Telangana | 30,064 | 33,180 | 10.4% |
| Madhya Pradesh | 36,292 | 41,494 | 14.3% |
| Andhra Pradesh | 30,295 | 34,438 | 13.7% |
| Tamil Nadu | 50,474 | 54,764 | 8.5% |
| Karnataka | 29,509 | 37,596 | 27.4% |
| All India | 6,59,092 | 7,04,741 | 6.9% |

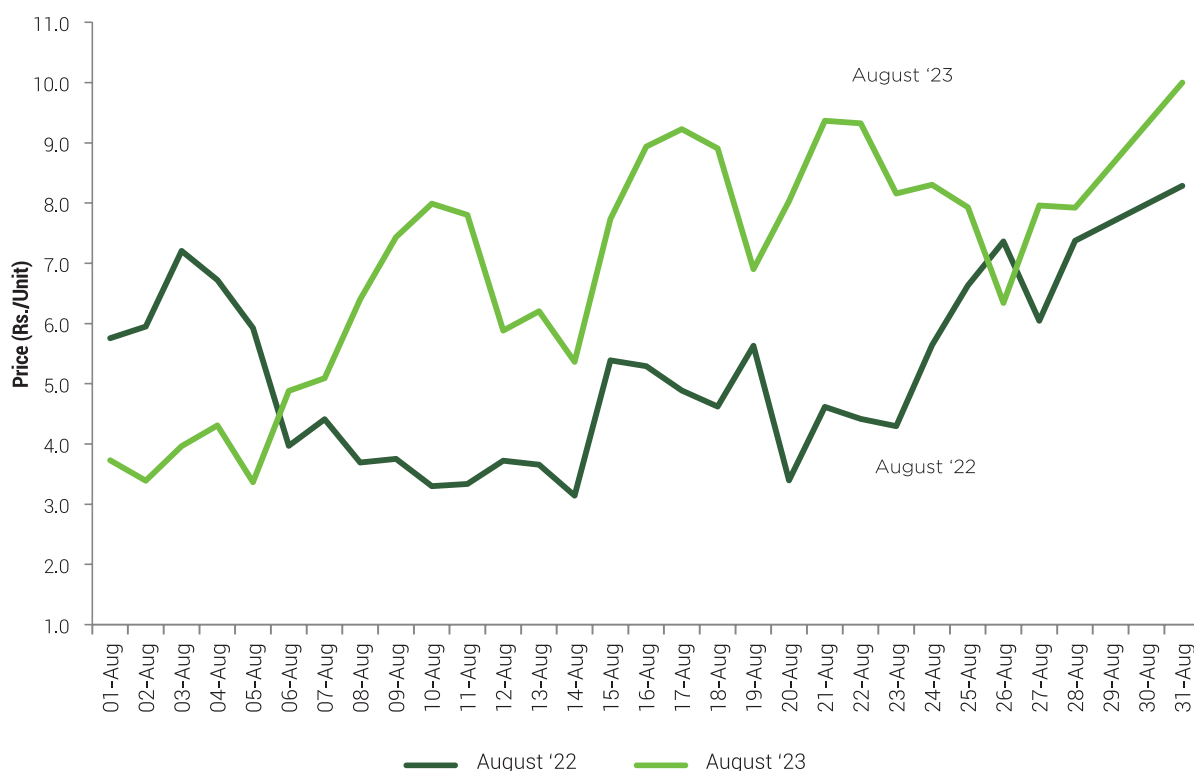
MARKET NEWS

ELECTRICITY MARKET

Indian Energy Exchange, India's premier energy exchange, achieved 8,469 MU total electricity volume in August 2023, registering an increase of 21% on YoY basis. IEX attained 8,865 MU overall volume, including green market trade of 242.3 MU, ancillary market trade of 40MU, 2.53 Lac RECs (equivalent to 253 MU) and 1.03 Lac ESCerts (equivalent to 103 MU). The overall volume traded during the month increased to 13.3% on YoY basis.

In August 2023, the country experienced its lowest August rainfall since 1901, resulting in hot weather conditions. This, in turn, led to an unprecedented surge in electricity demand for the month. According to data published by Grid-India, the country's electricity consumption was recorded at 152 BU in August 2023, an increase of 16% year-on-year. Notably, on August 31, 2023, the country witnessed an all-time high peak demand of 236 GW along with the highest ever single day energy consumption of 5126 MU. Due to the combination of higher demand and supply constraints, prices on the Indian Energy Exchange (IEX) during the month reached Rs. 6.89/unit, marking a 33% year-on-year increase.

MCP FOR AUGUST '22 & AUGUST '23



DAY-AHEAD, TERM-AHEAD & REAL-TIME ELECTRICITY MARKET

The Day-Ahead Market (DAM) volume increased to 3,810 MU in August'23, from 3,551 MU in August'22, growing 7.3% YoY. The average market clearing price was Rs. 6.89/ unit during the month, up by 33% over the corresponding month last year.

The Real-Time Electricity Market (RTM) achieved 2,738 MU in August'23, registering an increase of 21% YoY. It is noteworthy to mention that IEX achieved the highest ever single day volume of 135.28 MUs in RTM on August 24, 2023. The RTM segment enables distribution utilities and industries with greater flexibility and efficient optimisation of portfolios by balancing their power demand-supply on a real-time basis.

The Term-Ahead Market (TAM) and the Day-Ahead Contingency Market (DAC), comprising intra-day, contingency, daily & weekly contracts, and contracts up to 3 months, traded 1,673 MU during August'23, higher by 131.5% on YoY basis.

GREEN MARKET: DAY-AHEAD & TERM-AHEAD

IEX Green Market, comprising the Green Day-Ahead and Green Term-Ahead Market segments, achieved 242.3 MU volume during August'23.

The Green Day-Ahead Market (G-DAM) achieved 159.7 MU volume during the month, with a weighted average price of Rs. 7.16 per unit. The segment saw participation from 193 market participants during the month.

The Green Term-Ahead Market (G-TAM) achieved 82.6 MU volume in August'23, with average monthly price of Solar- Rs. 5.25/unit and for Non-Solar- Rs. 6.96/unit and for Hydro- Rs 8.80/unit.

RENEWABLE ENERGY CERTIFICATE MARKET

A total of 2.53 lac RECs (equivalent to 253 MU) were cleared in the trading session at IEX held on Wednesday, 30th August, at the price of Rs. 575/REC.

The next REC trading session at the Exchange is scheduled on Wednesday, 27th September '23.

ENERGY SAVING CERTIFICATES (ESCerts)

During August'23, 1.03 lac ESCerts (equivalent to 103 MU) were traded on IEX, at the floor price of Rs. 1,840 per ESCert.

TRADE INSIGHTS AUGUST 2023

CONVENTIONAL POWER MARKET

DAY-AHEAD MARKET

Price Snapshot (₹/kWh)

| AREA PRICES | | | |
|-------------|---------|---------|---------|
| Area | Average | Minimum | Maximum |
| All India | 7.05 | 1.98 | 10.00 |

1 MU= 1 Million kWh= 1 GWh

| VOLUME | | | | |
|--------------------|-----------|-----------|----------------------|----------------|
| Volume | Sell Bids | Buy Bids | Unconstrained Volume | Cleared Volume |
| Total Volume (MU) | 6,142.60 | 10,355.10 | 3,810.43 | 3,810.43 |
| Average Daily (MU) | 198.15 | 334.03 | 122.92 | 122.92 |

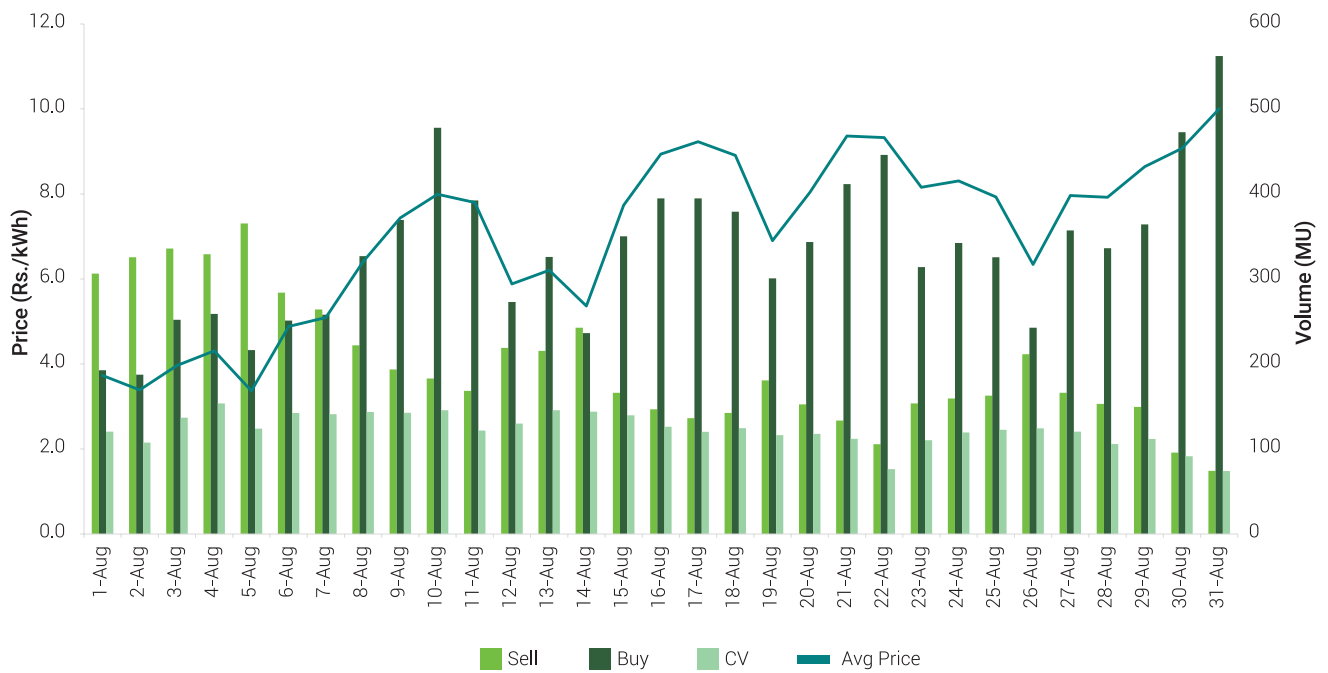
| PARTICIPATION | | |
|-------------------------------|-----------------------|--------------------|
| Total Registered Participants | Open Access Consumers | Private Generators |
| 7,500+ | 4,600+ | 600+ |

TERM-AHEAD POWER MARKET

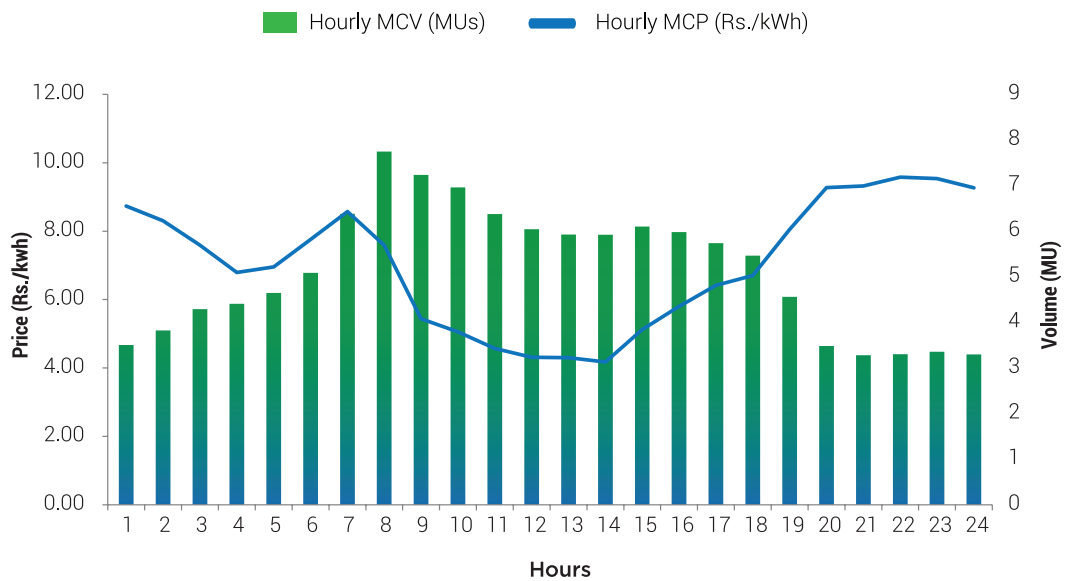
| Contracts | Total Volume (MU) | Max. Price (₹/kWh) | Min. Price (₹/kWh) |
|-------------------------|-------------------|--------------------|--------------------|
| Intraday | 8.82 | 10.00 | 7.13 |
| Day-Ahead Contingency | 896.59 | 10.00 | 1.68 |
| Daily | 230.0 | 10.00 | 2.95 |
| Weekly | 0 | - | - |
| Monthly | 538.94 | 10.00 | 4.91 |
| Total TAM Volume | | 1,035.71 | |

TERM-AHEAD POWER MARKET

Daily Trade Details



Average Hourly Market Clearing Volume and Price



REAL-TIME MARKET



Price Snapshot (₹/kWh)

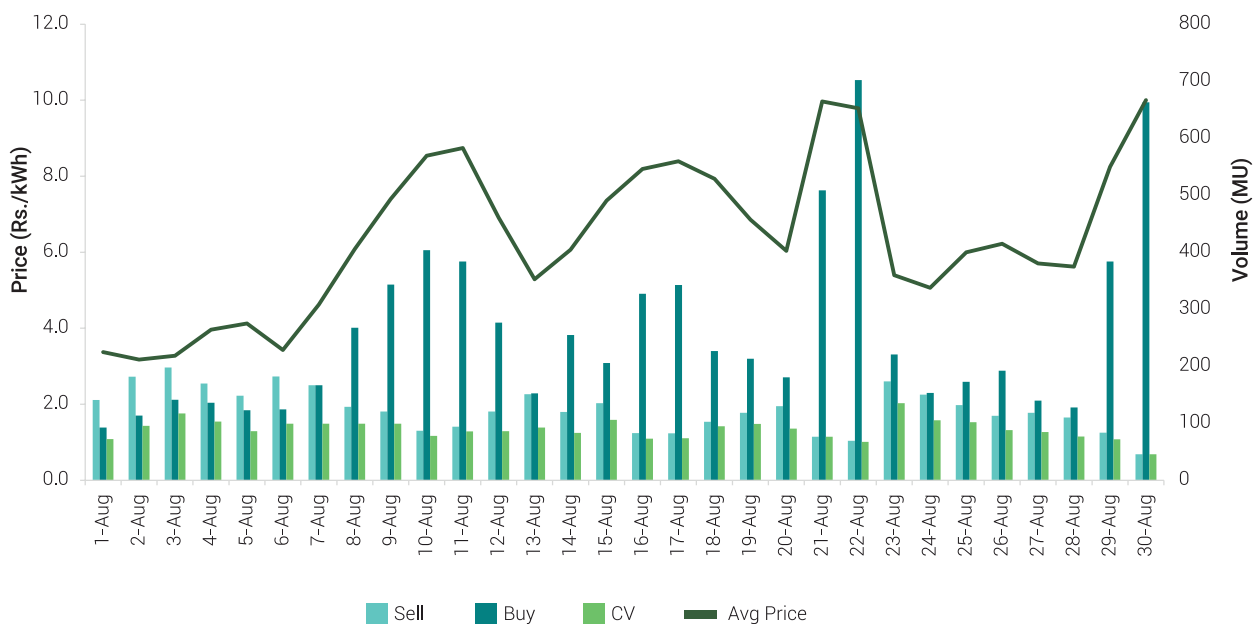
| AREA PRICES | | | |
|-------------|---------|---------|---------|
| Area | Average | Minimum | Maximum |
| All India | 6.51 | 1.37 | 10.00 |

Minimum Area Price for this month refers to the average minimum price

1 MU= 1 Million kWh= 1 GWh

| VOLUME | | | |
|-------------------|-----------|----------|----------------------|
| Volume | Sell Bids | Buy Bids | Unconstrained Volume |
| Total Volume (MU) | 3,783.97 | 8,671.57 | 2,738.17 |

Daily Trade Details



GREEN DAY-AHEAD MARKET

Price Snapshot (₹/ kWh)

| AREA PRICES | | | |
|-------------|---------|---------|---------|
| Area | Average | Minimum | Maximum |
| All India | 6.72 | 1.96 | 10.00 |

Minimum Area Price for this month refers to the average minimum price

1 MU= 1 Million kWh= 1 GWh

| VOLUME | | | | |
|--------------------|-----------|----------|----------------------|----------------|
| Volume | Sell Bids | Buy Bids | Unconstrained Volume | Cleared Volume |
| Total Volume (MU) | 3,689.69 | 9,609.03 | 2,713.21 | 2,712.59 |
| Average Daily (MU) | 119.02 | 309.97 | 87.52 | 87.50 |

GREEN TERM-AHEAD MARKET

| | Intraday (Solar) | Intra-day (Non Solar) | Intra-day (Hydro) | Day-Ahead Contingency (Solar) | Day-Ahead Contingency (Non-Solar) | Day-Ahead Contingency (Hydro) | Weekly (Solar) | Weekly (Non-Solar) | Daily (Solar) | Daily (Non-Solar) |
|--------------------|------------------|-----------------------|-------------------|-------------------------------|-----------------------------------|-------------------------------|----------------|--------------------|---------------|-------------------|
| Volume (MU) | - | - | - | 8.91 | 60.61 | 9.53 | - | - | - | - |
| Price (Rs/kWh) | - | - | - | 5.25 | 6.96 | 8.80 | - | - | - | - |
| Total Volume (MU)* | 79.05 | | | | | | | | | |

*Does not include Green LDCs

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Daily SMS

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