IN THIS ISSUE...

REGULATORY NEWS

CERC issues Order on Directions for implementing Shadow Pilot on Power System and Cost Optimisation through Market Coupling

On 6th February 2024, the Central Electricity Regulatory Commission issued an order for implementing a shadow pilot on power system and cost optimisation through market coupling. The CERC directs Grid-India as under:

Develop software for running shadow pilot for coupling of RTM of three power exchanges, coupling of RTM & SCED, and coupling of DAM of three power exchanges within two months from the date of this Order.

Software developed should be scalable for running shadow pilot for coupling of DAM and SCUC, as and when decided by the Commission.

Implement the shadow pilot of coupling (a) RTM of 3 power exchanges (b) RTM & SCED (c) DAM of 3 power exchanges, for four months.

Share operational experience of running a shadow pilot.

Suggest feasibility of coupling of DAM & SCUC within 2 months.

Odisha Electricity Regulatory Commission issues Tariff Order for FY 2024-25

On 13th February 2024, the Odisha Electricity Regulatory Commission (OERC) issued a tariff order for FY'25. The key highlights of the order are:

<table>
<tr><th>State Tariff Order</th><th>Short Term Purchase</th><th>Short Term Sale</th><th>Tariff Change</th><th>Other Updates</th></tr>
<tr><td>Odisha</td><td>Expected RPO shortfall for FY 2024-25: 2019 MUs</td><td></td><td>No change in Industrial Tariff.

Green Energy Tariff reduced from 25 paise/ unit to 20 paise/ unit as premium over and above the normal rate of energy charges.

No change in transmission charges and losses for short-term open access.</td><td>Revised TOD Slabs:
<table>
<tr><th rowspan="2">Period</th><th colspan="2">FY 2023-24</th><th colspan="2">FY 2024-25</th></tr>
<tr><th>Time period</th><th>Rate (Rs./ unit)</th><th>Time period</th><th>Rate (Rs./ unit)</th></tr>
<tr><td>Normal</td><td>2200 - 0000 Hrs</td><td>0.00</td><td>1600 - 1800 Hrs
& 0000 - 0800 Hrs</td><td>0.00</td></tr>
<tr><td>Solar/Off Peak</td><td>2200 - 0600 Hrs</td><td>-0.20</td><td>0800 - 1600 Hrs</td><td>-0.10</td></tr>
<tr><td>Peak</td><td></td><td></td><td>1800 - 2400 Hrs</td><td>+0.20</td></tr>
</table></td></tr>
<tr><td></td><td></td><td></td><td colspan="2">Change in Open Access Charges:
<table>
<tr><th rowspan="2">Discoms</th><th colspan="2">CSS (EHT)</th><th colspan="2">CSS (HT)</th><th colspan="2">Wheeling Charge</th><th colspan="2">Wheeling Loss</th></tr>
<tr><th>2023-24</th><th>2024-25</th><th>2023-24</th><th>2024-25</th><th>2023-24</th><th>2024-25</th><th>2023-24</th><th>2024-25</th></tr>
<tr><td>TPCODL</td><td>170.03</td><td>163.00</td><td>85.12</td><td>76.23</td><td>99.67</td><td>101.46</td><td>8%</td><td>8%</td></tr>
<tr><td>TPNODL</td><td>149.03</td><td>138.50</td><td>33.31</td><td>14.06</td><td>141.09</td><td>152.23</td><td>8%</td><td>8%</td></tr>
<tr><td>TPWODL</td><td>110.53</td><td>117.50</td><td>23.35</td><td>29.69</td><td>95.53</td><td>97.30</td><td>8%</td><td>8%</td></tr>
<tr><td>TPSODL</td><td>236.53</td><td>243.50</td><td>130.78</td><td>124.98</td><td>137.71</td><td>156.82</td><td>8%</td><td>8%</td></tr>
</table></td></tr>
</table>

Ministry of Power implements Uniform Renewable Energy Tariff Mechanism

On 14th February 2024, the Ministry of Power implemented a Uniform Renewable Energy Tariff Mechanism. The features of the mechanism were as follows:

Ministry of Power has considered two pools viz. 'Solar Power Central Pool' and 'Solar-Wind Hybrid Central Pool' for implementation under Uniform Renewable Energy Tariff (URET).

The start date of the 'Solar Power Central Pool' and 'Solar-Wind Hybrid Central Pool' under the URET mechanism shall be 15th February, 2024.

Solar and solar-wind hybrid capacity bidded after 15th February, 2024 in accordance with the bidding guidelines issued by the Government of India shall be considered under their respective pools.

Principle of operation of a pool shall be based on a First in First out (FIFO) approach.

Following Renewable Energy Implementation Agencies (REIAs) of Ministry of New & Renewable Energy shall act as Intermediary Procurers for the purpose of implementation of URET Procedure:-

NTPC Limited

NHPC Limited

SJVN Limited

Solar Energy Corporation of India Limited.

Ministry of Power issues Draft Electricity (Amendment) Rules, 2024

On 16th February, 2024, the Ministry of Power issued draft Electricity (Amendment) Rules 2024. According to the proposed amendment:

The Central Government may notify a distinct central pool for different categories of Renewable Energy Sources. The duration of each central pool shall be three years from the date of commencement as notified by the Central Government.

CERC issues Order on Directions to Power Exchanges in Interest of Probity and Transparency of Market Operations

On 21st February, 2024, the CERC issued an order draft to Power Exchanges in interest of probity and transparency of market operations. According to the order:

No manual entry of bids by the power exchanges on behalf of their members within or after the trading hours.

No bids to be accepted by the power exchanges after trading hours.

Power exchanges within one month from this order to build a robust system with end-to-end encryption of data from the trading workstation of the respective member/clients and the trading platform of the power exchange to ensure that the entire trail of the bidding session starting from bid submission till the end of bidding session is encrypted.

Process of validation of orders shall be completely automated with no manual intervention, and the need to re-run provisional/final results due to deletion of bids on account of fund shortage not allowed.

Bid cancellation is not allowed post trading hours.

Modification of bids is not allowed after trading hours.

No extension is allowed in the trading hours.

The Ministry of Power notifies Methodology for calculation of Green Credit in respect of Tree Plantations

On 22nd February, 2024, the Ministry of Power notified the methodology for calculation of Green Credit in respect of Tree Plantations. According to the methodology:

Forest Department of every State and UT to identify degraded land parcels, including open forest and scrub land, wasteland and catchment areas which shall be made available for tree plantation to promote activities for increasing green cover and for generation of Green Credit.

Land parcel identified for plantation must be free from all encumbrances and must have size of five hectares or above.

Any person or entity desirous of undertaking tree plantations to generate Green Credit may apply to the Administrator.

On receipt of application, the Administrator will identify land and assign it to the applicant, and require him to submit a proposal for tree plantations.

On receipt of proposal, the Administrator will prepare and issue a demand note to applicant including the cost of tree plantation, and administrative expenses, to be paid to Administrator within a specified period.

On payment, the Administrator shall direct Forest Department to carry out tree plantation in line with management or working plan and shall be completed within a period of 2 years from date of payment.

On completion of tree plantation, Forest Department to submit report to the Administrator and issue certificate of completion of tree plantation to the applicant. The Administrator after evaluation and verification of tree plantation activity may generate and issue Green Credit to the applicant.

Green Credit to be calculated at the rate of 1 Green Credit per tree grown through tree plantation, subject to min density of 1100 trees per hectare.

Green Credit generated, may be exchanged for meeting compliance of compensatory afforestation in case of diversion of forest land for non-forestry purposes.

Green Credit so generated may be used for reporting under environmental, social and governance leadership indicator or under corporate social responsibility.

Ministry of Power notifies Electricity (Rights of Consumers) Amendment Rules, 2024

On 22nd February, 2024, the Ministry of Power an order draft to Power Exchanges in interest of probity and transparency of market operations. According to the order:

Addition of definition of:

Owner means the person who is having absolute right over the property and the expression owner includes the legal heirs.

A resident welfare association means an association comprising all property owners within a co-operative group housing society, multi storied building, residential Colony, or a similar body registered with the State Government.

Within the area covered under an Association:

Discom to provide either single point connection for the Association or individual connections for each and every owner.

Metering, billing, and collection to be done separately for, individual electricity consumption from Discom, individual consumption of backup power supplied by the Association & electricity consumption for common area of such association sourced from Discom.

In case of single point connection, the Association will be responsible for metering, billing, and collection and for individual connections, these responsibilities shall vest with the distribution licensee.

On request of an Association or an owner in an Association or any other consumer, Discom shall provide a separate connection for supply of electricity for Electric Vehicle charging system.

For installation of rooftop solar PV, technical feasibility study shall be completed within a 15 days and outcome of study shall be intimated to the applicant, failing which it shall be presumed that the proposal is technically feasible. Applications for rooftop solar PV up to 10 kW capacity, complete in all respects shall be deemed to have been accepted.

Ministry of Power notifies Electricity (Late Payment Surcharge and Related Matters) (Amendment) Rules, 2024

On 28th February, 2024, the Ministry of Power notified the Electricity (Late Payment Surcharge and Related Matters) (Amendment) Rules, 2024. According to the amendments:

Amendment in Rule **"7. Regulation of access to defaulting entities"**- Words "short term access, medium term open access and long-term open access" have been substituted with "access". The term "access" means the open access to the Inter-State Transmission System.

In case of Power not requisitioned by a Distribution Licensee:

Distribution licensee to intimate schedule for requisitioning power for each day from each generating company two hours before the end of the time for placing proposals or bids in the Day Ahead Market, failing which the generating company, shall offer, the un-requisitioned surplus power including the power available against the declared capacity of the unit under shut down, in the power exchange.

If power so offered by the generating company is not cleared in Day-Ahead Market, it shall be offered in other market segments, including the Real-Time Market, in the power exchange:

Such offer of power, in the market shall be at a price not exceeding 120% of its energy charge, as determined or adopted by the Appropriate Commission or calculated under the directions, issued by the Central Government, under section 11 of the Act, if applicable, plus applicable transmission charges.

If the generating company fails to offer such un-requisitioned surplus power in the power exchange, the un-requisitioned surplus power to the extent not offered in the power exchange up to the declared capacity shall not be considered as available for the payment of fixed charges.

NLDC to issue detailed procedure to implement the above provisions within 15 days of commencement of Rules.

Gujarat Electricity Regulatory Commission issues (Terms and Conditions for Green Energy Open Access) Regulations, 2024 (21.02.2024)

On 21st February, 2024, Gujarat Electricity Regulatory Commission Issued (Terms and Conditions for Green Energy Open Access) Regulations, 2024. According to the terms and conditions:

Applicable on Licensee, Green Energy Generator or Consumer who have contracted demand or sanctioned load of 100 KW or more, either through single connection or through multiple connections aggregating 100 kW or more located in same electricity division of a distribution licensee.

Applicants (Seller) seeking GEOA to submit undertaking of not having entered into PPA or any other bilateral agreement with more than one person for the capacity (quantum of power) for which GEOA is sought.

Minimum 12 number of time blocks for which the consumer shall not change the quantum of power consumed through GEOA.

Gujarat SLDC State Nodal Agency for grant of short-term OA.

Verification and decision on GEOA application by SLDC to be taken within 15 days from the date of application. If SLDC fails to intimate grant of GEOA or otherwise, within specified time, the same shall be deemed to have been granted, to be subject to system availability.

Cross subsidy Surcharge-as per MoP Rules

Additional Surcharge-as per MoP Rules.

CSS shall not exceed twenty per cent of the Average Cost of Supply.

ASC levied on GEOA consumer shall not be more than the per unit fixed cost of power purchase of the distribution licensee. ASC not be applicable to GEOA consumers to the extent of CD maintained with Discom.

Banked energy available during off-peak period allowed to be utilised only during off-peak period by the GEOA consumers.

Banking Charge: Rs. 1.5/ unit effective from the date of notification of these Regulations up to 30th September, 2024. and thereafter the banking charges for the period starting from 1st October, 2024 and onwards shall be as decided by GERC through a separate notification of Regulation.

Karnataka Electricity Regulatory Commission issues Tariff Order for FY 2024-25 and Truing Up Order for FY 2022-23

On 28th February, 2024, the Karnataka Electricity Regulatory Commission (KERC) issued the tariff order for FY'25 and the truing up order for FY'23. The key highlights of the orders are:

<table>
<tr><th>State Tariff Order</th><th>Short Term Purchase</th><th>Short Term Sale</th><th>Tariff Change</th><th>Other Updates</th></tr>
<tr><td>Karnataka</td><td>Expected RPO shortfall for FY 2024-25: 2019 MUs</td><td></td><td>Approved surplus of all distribution utilities for FY 2024-25 Rs. 290.76 Cr.

Approved APPC including transmission charges for FY 25 at Rs. 6.30/ unit.

KERC introduced ToD for morning peak between 6 a.m. to 9 a.m. in addition to retaining the existing evening peak between 6 p.m.to.10 p.m.</td><td>Change in Industrial and Commercial Tariff:
<table>
<tr><th rowspan="2">HT Category</th><th colspan="2">FY 2023-24</th><th colspan="2">FY 2024-25</th><th colspan="2">Change in Tariff</th></tr>
<tr><th>Energy Charge (Rs/ unit)</th><th>Demand Charge (Rs/ KVA)</th><th>Energy Charge (Rs/ unit)</th><th>Demand Charge (Rs/ KVA)</th><th>Energy Charge (Rs/ unit)</th><th>Demand Charge (Rs/ KVA)</th></tr>
<tr><td>HT 2a</td><td>7.40</td><td>350</td><td>6.90</td><td>340</td><td>-0.50</td><td>-10</td></tr>
<tr><td>HT 2b</td><td>9.25</td><td>375</td><td>8.00</td><td>365</td><td>-1.25</td><td>-10</td></tr>
</table></td></tr>
<tr><td></td><td></td><td></td><td>KERC decided not to prescribe separate fixed charges to OA consumers.</td><td>Change in Industrial and Commercial Tariff:
<table>
<tr><th>Category</th><th>Sub-Category</th><th>FY 24 (Rs./ kWh)</th><th>FY 25 (Rs./ kWh)</th><th>Change</th></tr>
<tr><td>HT-2 a Industry</td><td>CSS</td><td>2.05</td><td>0.55</td><td>-1.50</td></tr>
<tr><td>HT-2 b Commercial</td><td>CSS</td><td>2.80</td><td>2.46</td><td>-0.34</td></tr>
<tr><td>All Utilities</td><td>Additional Surcharge</td><td>1.48</td><td>1.37</td><td>-0.11</td></tr>
<tr><td>BESCOM</td><td>Wheeling Charge</td><td>0.33</td><td>0.32</td><td>-0.01</td></tr>
<tr><td>BESCOM</td><td>Wheeling Loss</td><td>2.93%</td><td>2.79%</td><td>-0.1%</td></tr>
<tr><td>CESC</td><td>Wheeling Charge</td><td>0.421</td><td>0.37</td><td>-0.05</td></tr>
<tr><td>CESC</td><td>Wheeling Loss</td><td>1.81%</td><td>1.22%</td><td>-0.6%</td></tr>
<tr><td>GESCOM</td><td>Wheeling Charge</td><td>0.402</td><td>0.40</td><td>0.00</td></tr>
<tr><td>GESCOM</td><td>Wheeling Loss</td><td>2.98%</td><td>2.99%</td><td>0.0%</td></tr>
<tr><td>HESCOM</td><td>Wheeling Charge</td><td>0.420</td><td>0.40</td><td>-0.02</td></tr>
<tr><td>HESCOM</td><td>Wheeling Loss</td><td>4.53%</td><td>4.34%</td><td>-0.2%</td></tr>
<tr><td>MESCOM</td><td>Wheeling Charge</td><td>0.409</td><td>0.42</td><td>0.01</td></tr>
<tr><td>MESCOM</td><td>Wheeling Loss</td><td>3.59%</td><td>3.24%</td><td>-0.4%</td></tr>
</table></td></tr>
</table>

Key Software and Technology Infrastructure Trends in India's Power Sector

By Amit Kumar

(Senior VP, Head of Market Operations and New Product Initiatives, IEX).

This article appeared in Dataquest.

The power sector in India is undergoing a significant transformation, driven by a combination of economic growth, focus on clean energy generation, and technological advancements. This transformation is being facilitated by multiple key software and technology infrastructure trends.

These trends, ranging from smart grids, AI, blockchain, advanced metering infrastructure, to the integration of renewable energy sources, can collectively pave the way for a smart and sustainable energy landscape in 2024 and beyond.

Smart grids and advanced metering infrastructure (AMI)

The implementation of smart grids and advanced metering infrastructure (AMI) is enhancing the efficiency and reliability of India's power distribution networks. Smart grids help to achieve real-time monitoring and control of electricity distribution, and improves the overall resilience of the grid. AMI allows the access to real time and detailed information about energy consumption. The adoption of AMI solutions will also help in implementation of effective demand response mechanisms.

Data analytics and AI

The power sector in India generates large amount of data, and AI-based solutions can be leveraged to analyse these data sets to implement effective predictive analytics and decision-making solutions. The implementation of effective AI-based solutions will help in improving predictive maintenance in power plants and will reduce the un-planned downtime. The implementation of machine learning algorithms and advanced data analytics solutions provide the benefit of forecasting energy demand, optimising energy distribution, and enhancing the overall efficiency of the energy grid.

Renewable energy integration

One of the key trends in the Indian energy market is the increasing adoption of renewable energy. This trend creates opportunities for implementation of software solutions for better integration and management of renewable energy sources like solar and wind. Also, the effective integration of renewable energy will drive the demand for Forecasting solutions to predict renewable energy generation and optimise grid operations.

Energy storage management solutions

The intermittent nature of renewable energy sources means that effective energy storage solutions, is a necessity to achieve reliable power supply through the renewable energy sources. The advancements in battery technologies will drive down the cost of energy storage and it will result in wider implementation of grid scale energy storage projects. This will drive the need for Software solutions to optimise the utilisation of energy storage systems and to enhancing grid stability and reliability.

Electric vehicles (EVs) and charging infrastructure

The adoption of electric vehicles is gaining momentum in India driven by the increased focus on environment and sustainability. The increase in adoption of EVs leads to the development of charging infrastructure and battery swapping solutions.

The growth of EVs will result in demand for software solutions to effectively manage the charging infrastructure and to also optimise the integration of electric vehicles into the power grid.

Cyber security solutions

In today's world, where the cyber and the ransomware attacks are on continuous rise, the implementation of robust cyber security solutions is of critical important to ensure the reliable and safe functioning of the power sector.

The implementation of robust technology solutions around key areas such as network security, endpoint protection, encryption, monitoring, etc., will be required to protect critical power infrastructure from cyber threats and attacks.

Also, the implementation of processes and solutions for regular backup of critical data and systems, and establishing a robust disaster recovery plan will be required to minimise the downtime in the event of a cyber attack.

Blockchain for energy trading

Blockchain technology is slowly making inroads into the Power sector by enabling transparent and secure peer-to-peer (P2P) energy trading. Blockchain technology-based P2P energy trading platforms facilitate the direct trade of energy between the producers and the consumers.

The growth of rooftop solar installations in India and finalisation of regulations to support P2P energy trading will result in the growth of blockchain technology-based P2P energy trading platforms.

Regulatory compliance and reporting

The implementation of software tools will help the companies operating in India's power sector to build effective solutions for data collection and reporting, audit trail and documentation, real-time monitoring, and compliance management and monitoring. This will enable the companies to effectively comply with the regulatory requirements and to streamline their reporting processes.

As India continues its journey towards a sustainable and resilient energy future, the convergence of renewable energy, smart grids, EVs, energy storage, AI, and blockchain will drive a significant transformation of the power sector in India.

Capacity

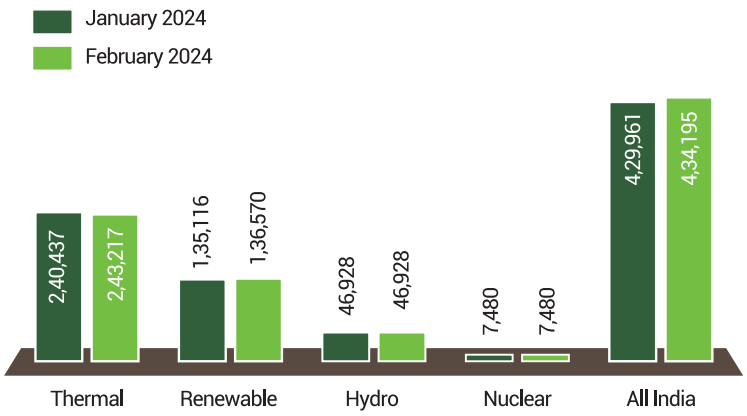
In February 2024, all India installed capacity stood at 4,34,195 MW with capacity addition of 4, 234 MW during the month with break-up as below:

• **Thermal:** 2,780 MW (Increase) • **Renewable:** 1,454 MW (Increase) • **Hydro:** No Change • **Nuclear:** No Change

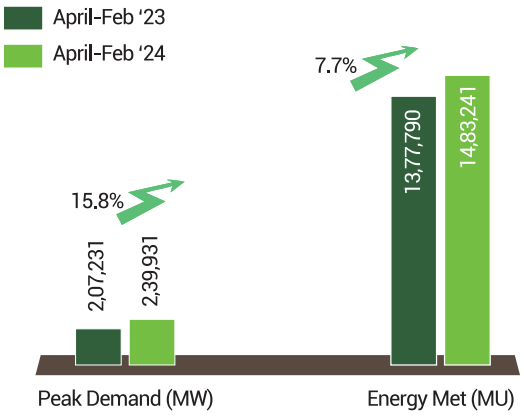
All India peak demand met printed at 2,39,931 MW during April'23 – February'24 registering a 15.8% YoY increase from 2,07,231 MW during April'22 – February'23.

All India energy met was higher by 7.7% at 1,483 BUs during April'23-February'24 compared with 1,378 BUs during April'22 – February'23.

All India Installed Capacity (in MW)



Demand and Supply Position



Peak Demand Met Comparison of Key States

The comparison of the peak demand met in the key states during April 2022 – February 2023 and April 2023 – February 2024 is as here under:

State	Apr-Feb'23	Apr-Feb'24	YoY (%)
Maharashtra	28,846	27,996	-2.9%
Gujarat	21,382	24,544	14.8%
Madhya Pradesh	17,238	17,817	3.4%
Uttar Pradesh	26,589	28,284	6.4%
Punjab	14,311	15,293	6.9%
Andhra Pradesh	12,293	13,084	6.4%
Haryana	12,768	12,844	0.6%
Tamil Nadu	17,248	19,045	10.4%
Karnataka	15,543	16,950	9.1%
Telangana	14,794	15,370	3.9%
All India	**2,07,231**	**2,39,931**	**15.8%**

(Source: www.cea.nic.in)

Energy Met Comparison of Key States

The comparison of the energy met in the key states April 2022 – February 2023 and April 2023 – February 2024 is as here under:

State	Apr-Feb'23	Apr-Feb'24	YoY (%)
Rajasthan	92,548	97,883	5.8%
Uttar Pradesh	1,33,436	1,37,758	3.2%
Gujarat	1,26,878	1,33,194	5.0%
Haryana	57,036	59,301	4.0%
Punjab	64,961	65,049	0.1%
Maharashtra	1,69,610	1,88,164	10.9%
Telangana	68,889	76,091	10.5%
Madhya Pradesh	85,215	90,819	6.6%
Andhra Pradesh	65,181	73,458	12.7%
Tamil Nadu	1,03,922	1,13,816	9.5%
Karnataka	67,060	84,186	25.5%
All India	**13,77,790**	**14,83,241**	**7.7%**

MARKET NEWS

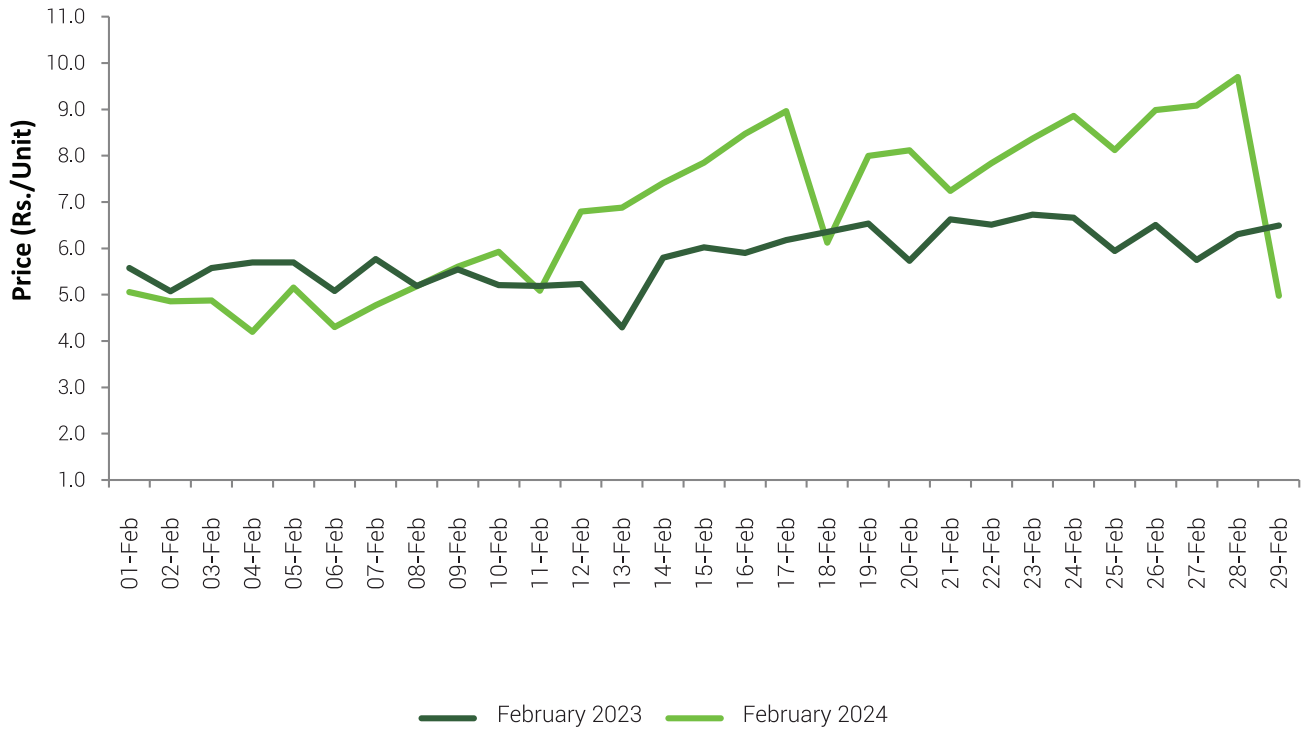
ELECTRICITY MARKET

Indian Energy Exchange, India's premier electricity exchange, achieved 9,462 MU overall volume, in February'24, marking a 15.4% year-over-year increase. The sell bids on the exchange (Day-Ahead Market plus Real-Time Market) during the month increased by 47% on YoY basis.

According to government data published in February'24, the country's energy consumption reached 127.8BUs, representing an 8.5 % increase on a year-on-year basis.

Ministry of Power issued amendments in the electricity late payment surcharge rules, 2024, requiring sale of URS power on exchanges. These rules also provide for penalty in terms of reduced fixed charges to GENCOS if they fail to offer URS power in the market. This will improve sell side liquidity on exchange platform and lead to competitive price discovery.

MCP for February 2023 & February 2024



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

The Day-Ahead Market (DAM) volume was at 4,722 MU in February'24, as compared to 4,664 MU in February'23.

The Real-Time Electricity Market (RTM) volume increased to 2,340 MU in February'24, from 1,714 MU in February'23, registering an increase of 36.5 % YoY.

Day Ahead Contingency and Term-Ahead Market (TAM), comprising of contingency, daily & weekly and monthly contracts up to 3 months, traded 1,487 MU during February'24, higher by 55.9 % on YoY basis.

GREEN MARKET: DAY-AHEAD & TERM-AHEAD

IEX Green Market, comprising the Green Day-Ahead and Green Term-Ahead Market segments, achieved 298 MU volume during February'24.

The Green Day-Ahead Market (G-DAM) achieved 266 MU volume during the month, with a weighted average price of Rs 5.5 per unit. The segment saw participation from 214 market participants during the month.

The Green Term-Ahead Market (G-TAM) achieved 32 MU volume in February '24.

RENEWABLE ENERGY CERTIFICATE MARKET

A total of 6.14 lac RECs (equivalent to 614 MU) were traded in the trading sessions held on 14th February'24 and 28th February'24, at a clearing price of Rs. 360/REC and Rs. 347/REC respectively.

The next REC trading sessions at the Exchange are scheduled on 13th March'24 and 27th March'24.

TRADE INSIGHTS FEBRUARY 2024

CONVENTIONAL POWER MARKET

DAY-AHEAD MARKET

Price Snapshot (₹/kWh)

AREA PRICES			
Area	**Average**	**Minimum**	**Maximum**
All India	4.86	2.09	10.00

1 MU= 1 Million kWh= 1 GWh

VOLUME				
Volume	**Sell Bids**	**Buy Bids**	**Unconstrained Volume**	**Cleared Volume**
Total Volume (MU)	8,801.25	7,647.91	4,722.69	4,722.16
Average Daily (MU)	303.49	263.72	162.85	162.83

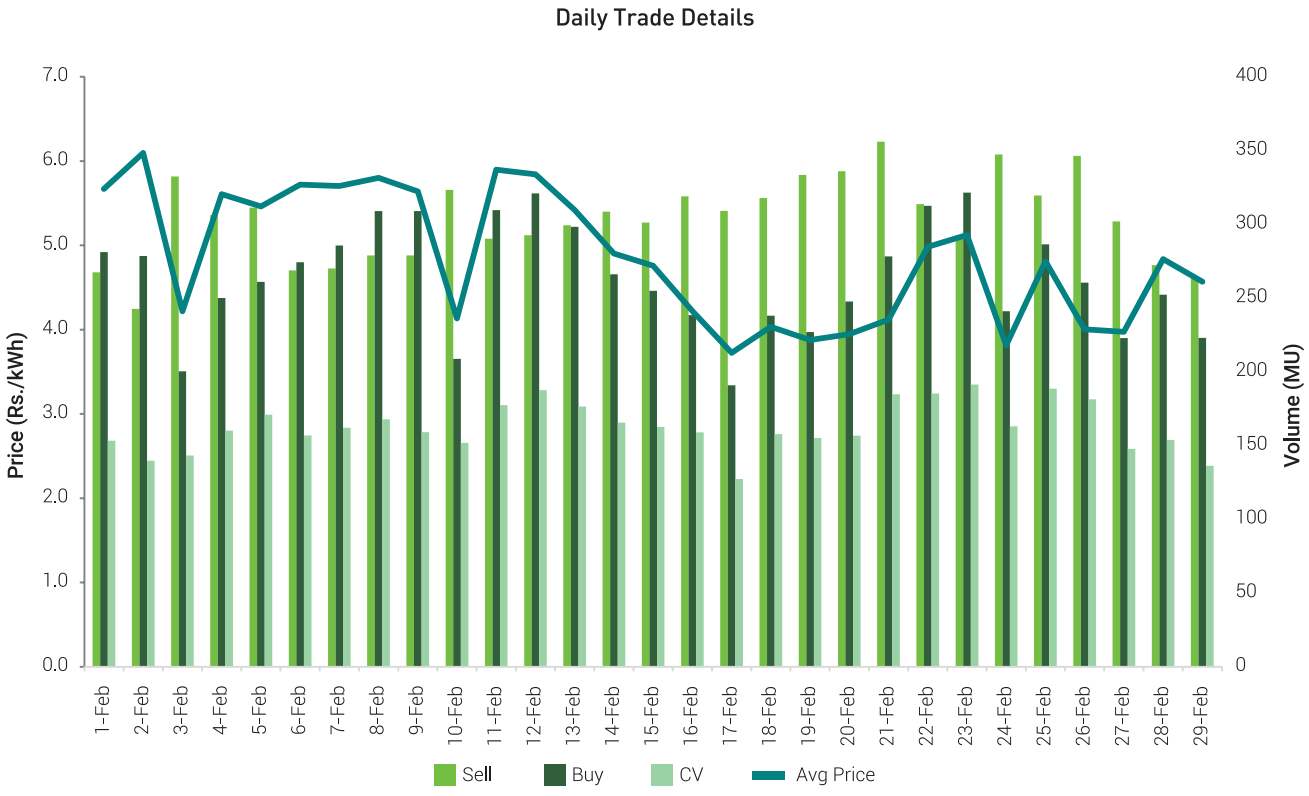
PARTICIPATION		
Total Registered Participants	**Open Access Consumers**	**Private Generators**
7,600+	4,800+	700+

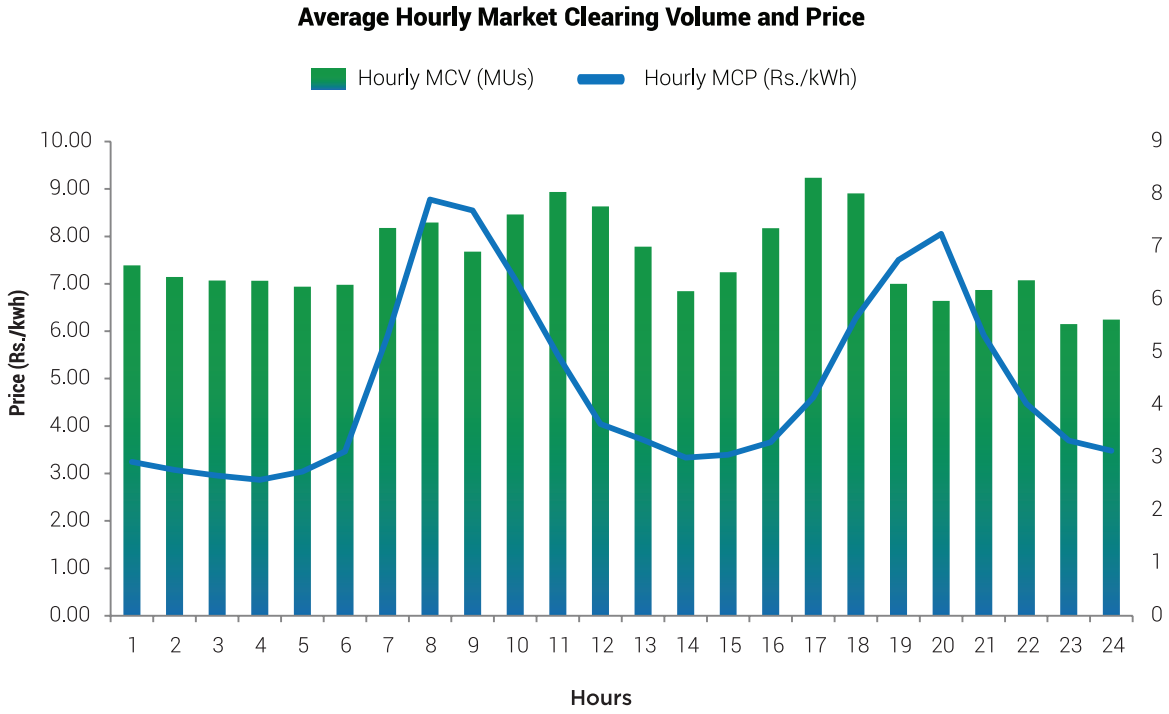
TERM-AHEAD MARKET

Contracts	Total Volume (MU)	Max. Price (₹/kWh)	Min. Price (₹/kWh)
Intraday	1.00	10.00	6.35
Day-Ahead Contingency	116.84	10.00	2.15
Daily	15.45	9.96	9.80
Weekly	0	-	-
Monthly	1,354.10	10.0	5.60
Total TAM Volume	**1,487.40**		

Scheduled Volume in the month based on Delivery Date

TERM-AHEAD MARKET





REAL-TIME MARKET

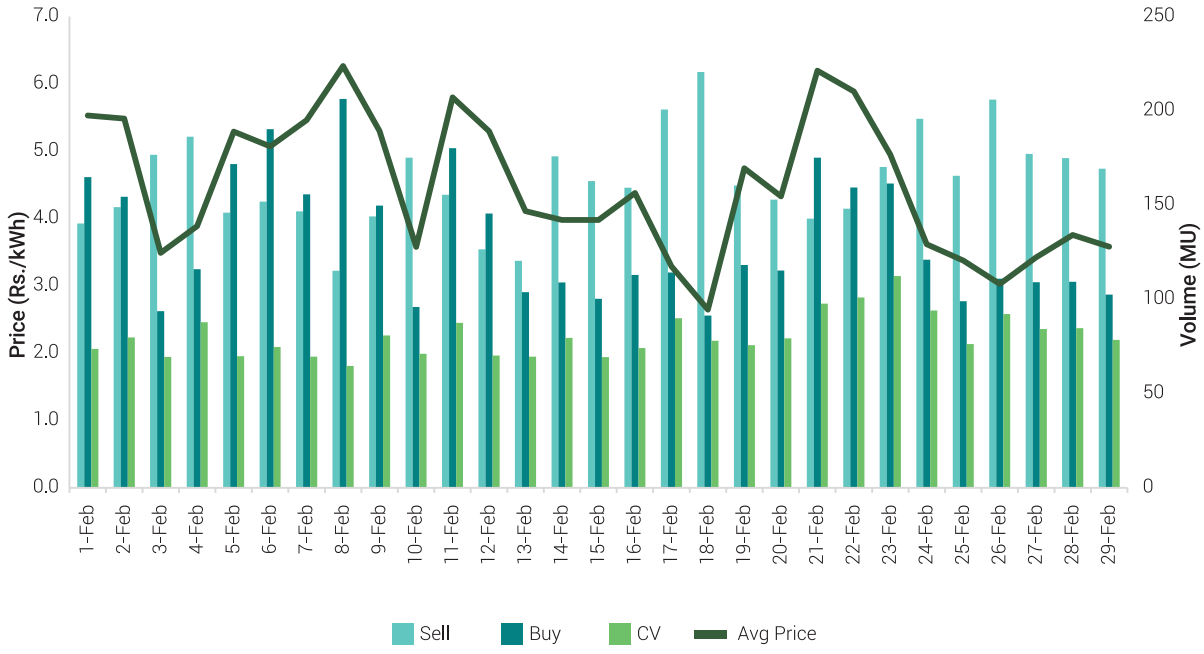
Price Snapshot (₹/kWh)

AREA PRICES			
Area	**Average**	**Minimum**	**Maximum**
All India	4.53	0.99	10.00

1 MU= 1 Million kWh= 1 GWh

VOLUME			
Volume	**Sell Bids**	**Buy Bids**	**Unconstrained Volume**
Total Volume (MU)	4,707.86	3,878.90	2,339.93

Daily Trade Details



GREEN DAY-AHEAD MARKET

Price Snapshot (₹/ kWh)

AREA PRICES			
Area	**Average**	**Minimum**	**Maximum**
All India	5.50	2.50	10.00

1 MU= 1 Million kWh= 1 GWh

VOLUME				
Volume	**Sell Bids**	**Buy Bids**	**Unconstrained Volume**	**Cleared Volume**
Total Volume (MU)	465.60	1,239.16	266.15	266.15
Average Daily (MU)	16.06	42.73	9.18	9.18

GREEN TERM-AHEAD MARKET

	Intra-day (Solar)	Intra-day (Non Solar)	Intra-day (Hydro)	Day-Ahead Contin-gency (Solar)	Day-Ahead Contingen-cy (Non-So-lar)	Day-Ahead Contin-gency (Hydro)	Weekly (Solar)	Weekly (Non-Solar)	Daily (Solar)	Daily (Non-Solar)
Total Volume (MU)*	**32**									

** Does not include Green LDCs*

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