

I/30849/2023



भारत सरकार/ Government of India

विद्युत मंत्रालय/ Ministry of Power

केन्द्रीय विद्युत प्राधिकरण/ Central Electricity Authority

आर. ए. प्रभाग/ Regulatory Affairs Division

सेवा में /To

1. Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi- 110001.
2. Secretary, Ministry of New & Renewable Energy, Atal Akshay Urja Bhawan, CGO Complex, Lodhi Road, New Delhi- 110003.
3. Secretary, CERC, Chanderlok Building, Janpath, New Delhi- 110001.

विषय: अगस्त, 2023 माह की मार्केट मॉनिटरिंग रिपोर्ट।

Subject: Monthly Market Monitoring Report for the month of August, 2023.

महोदय/ Sir,

अगस्त, 2023 माह के लिए केंद्रीय विद्युत प्राधिकरण द्वारा तैयार की गई मासिक मार्केट मॉनिटरिंग रिपोर्ट (MMMR) की एक प्रति सूचना और अवलोकन के लिए संलग्न है। A copy of the monthly market monitoring report (MMMR) prepared by central Electricity Authority for the month of August, 2023 is enclosed herewith for kind information and perusal.

अगस्त, 2023 माह के दौरान मार्केट के संचालन की मुख्य विशेषताएं इस प्रकार रही। Key highlights of the market operation during August, 2023 are as under:

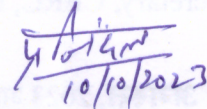
- (i) अगस्त, 2023 माह में देश में कुल 151,028 MU विद्युत का कारोबार किया गया, जिसमें से 75,125 MU का कारोबार अंतर्राज्यीय पारेषण प्रणाली (Inter State Transmission System) के माध्यम से किया गया था और शेष राज्य नियंत्रित उत्पादन स्टेशनों से अंतरराज्यीय पारेषण प्रणाली (Intra State Transmissions System) के माध्यम से किया गया। In the month of August, 2023 a total of 151,028 MU of electricity was transacted in the country out of which 75,125 MU was transacted through ISTS, and the remaining through state controlled generating stations through Intra State Transmissions System.
- (ii) अल्पावधि मार्केट के अंतर्गत कुल 25,898 MU का कारोबार किया गया था, जिसमें से 11,367 MU पावर एक्सचेंजों के माध्यम से कारोबार किया गया और शेष द्विपक्षीय कारोबार और विचलन (deviations) के रूप में हुआ। इस प्रकार अल्पावधि कारोबार, अगस्त, 2023 माह में ट्रेड की गई विद्युत की कुल मात्रा का 17.15 % था और 7.53 % पावर एक्सचेंजों के माध्यम से रहा। A total of 25,898 MU was transacted under Short Term Market, out of

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which 11,367 MU was transacted through Power Exchanges and remaining happened as bilateral transactions & deviations. Thus, the total short term trade in August, 2023 was 17.15 % of total volume of electricity traded in August, 2023 and 7.53 % was through Power Exchanges.

- (iii) यदि हम अंतर्राज्यीय पारेषण प्रणाली (ISTS) के माध्यम से आपूर्ति की गई विद्युत के संबंध में इन कारोबारों की तुलना करते हैं, तो अल्पावधि कारोबार अंतर्राज्यीय पारेषण प्रणाली (ISTS) कारोबार का लगभग 34.47 % रहा, जिसमें से पावर एक्सचेंजों के माध्यम से कारोबार 15.13 % रहा। If we compare these transactions with respect to the electricity supplied through ISTS, the short term transactions constitutes about 34.47 % of ISTS transactions, out of which transaction through the power exchanges constitutes 15.13 %.

भवदीय/ Yours faithfully,



(प्रदीप जिंदल/ Pardeep Jindal)

मुख्य अभियंता (आर.ए.)/ Chief Engineer (RA)

प्रतिलिपि/ Copy for information, through email, to:

1. O/o Chairperson, CEA
2. O/o Member (E&C), CEA
3. Secretary (All SERCs and JERCs)
4. CMD, Grid Controller of India Limited (GRID-INDIA), B-9 (1st Floor), Qutab Institutional Area, Katwaria Sarai, New Delhi -110016.
5. CMD, Indian Energy Exchange (IEX), 9th Floor, Max Towers, Sector 16B, Noida-201301.
6. MD & CEO, Power Exchange India Limited (PXIL), Sumer Plaza, 9th floor, Unit no - 901, Marol Maroshi Road, Andheri (East), Mumbai-400 059.
7. COO, Hindustan Power Exchange Limited (HPX), World Trade Tower, 8th Floor, Sector 16, Noida, Uttar Pradesh - 201301.

CEA website (<https://cea.nic.in/market-monitoring-report/?lang=en>)



मासिक मार्केट मॉनिटरिंग रिपोर्ट - अगस्त, 2023

Monthly Market Monitoring Report August, 2023



भारत सरकार/ Government of India

विद्युत मंत्रालय/ Ministry of Power

केन्द्रीय विद्युत प्राधिकरण/ Central Electricity Authority

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**अगस्त, 2023 की मासिक मार्केट
मॉनिटरिंग रिपोर्ट का सारांश**

**Summary of Market Monitoring Report
For the month of August, 2023**

अगस्त, 2023 माह के लिए सारांश Summary for Month: August, 2023

भारत में विद्युत एक्सचेंजों पर विद्युत के व्यापार का सारांश

Summary of Electricity Transactions on Power Exchanges in India

- अगस्त, 2023 के दौरान विद्युत एक्सचेंजों (यानी आईईएक्स, पीएक्सआईएल और एचपीएक्स) के माध्यम से कुल **11,367 MU** विद्युत का कारोबार किया गया। विद्युत की यह मात्रा डिलीवरी की तारीख के आधार पर है और इसमें DAM, GDAM, HP-DAM, RTM, TAM, HP-TAM, DAC & ID, HP-DAC & ID, GTAM और G-DAC & ID मार्केट खंडों के माध्यम से कारोबार शामिल हैं।

A total volume of **11,367 MU** electricity was transacted through power exchanges i.e. IEX, PXIL & HPX, during the month of August, 2023. This volume of electricity is on delivery date basis and includes transactions through DAM, GDAM, HP-DAM, RTM, TAM, HP-TAM, DAC & ID, HP-DAC & ID, GTAM and G-DAC & ID market segments.

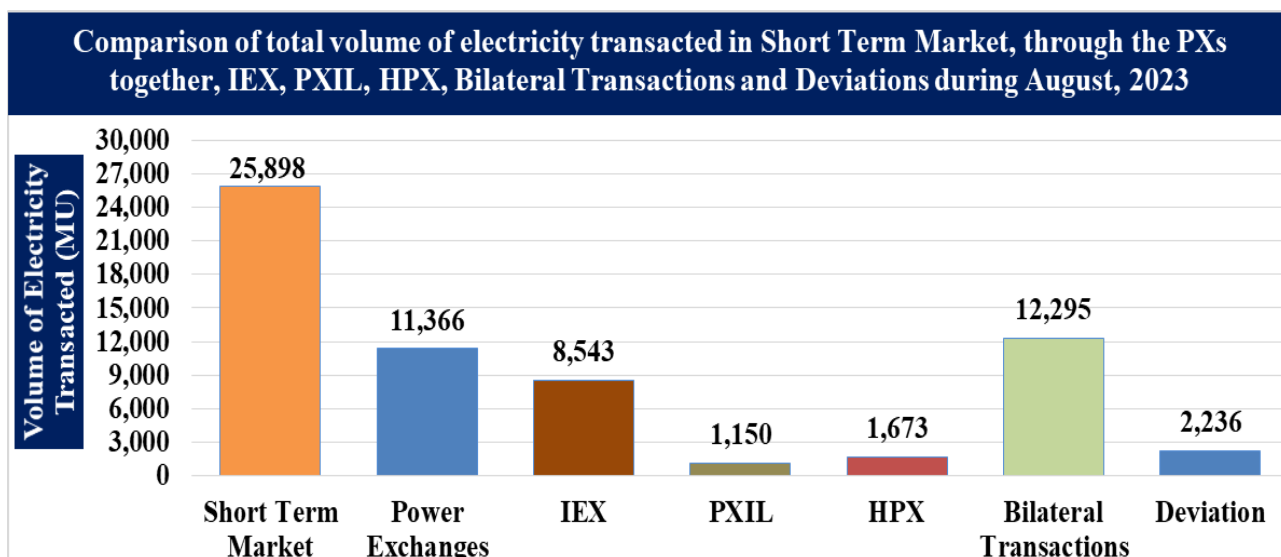
Segment	Transactions happened in the PXs (IEX, PXIL & HPX combined)			
	FSV (MU)	Average MCP (₹/kWh)	Congestion (MU)	Real Time Curtailment (MU)
DAM	3,898	6.44	0.00	0.00
GDAM	163	6.19	0.00	0.00
HP-DAM**	4	15.49	0.00	0.00
RTM	2,740	6.07	0.62	0.00
TAM	1,411	6.83	0.00	44.21
HP-TAM**	64	14.00	0.00	0.00
DAC & ID	2,744	7.77	1.16	12.77
HP-DAC & ID**	152	16.24	0.00	0.00
GTAM	4	6.20	0.00	0.00
G-DAC & ID	187	6.62	0.00	0.00
Total in PXs	11,367	6.90*	1.78	56.98

* The total average is weighted average of all market segments.

** The details of the High Price Segment, namely HP-DAM, HP-TAM, and HP-DAC & ID, have been included in DAM, TAM, and DAC & ID, respectively.

- द्विपक्षीय व्यापार के तहत कुल **12,295 MU** विद्युत का कारोबार किया गया और **2,236 MU** को विचलन के रूप में लेनदेन किया गया। इस प्रकार कुल **25,898 MU** विद्युत का कारोबार अल्पावधि व्यापार के रूप में किया गया था। अगस्त, 2023 के महीने में देश में कुल **151,028 MU** विद्युत की आपूर्ति की गई थी, इस प्रकार अगस्त, 2023 माह में कारोबार की गई विद्युत की कुल मात्रा में अल्पावधि बाजार का हिस्सा **17.15 %** था।

Under the Bilateral trade a total of **12,295 MU** of electricity was transacted **2,236 MU** was transacted as deviation. Thus a total of **25,898 MU** of electricity was transacted as short term trade. In the month of August, 2023 a total of **151,028 MU** of electricity was supplied in the country, thus the share of short term market in the total volume of electricity supplied in August, 2023 was **17.15 %**.



- अगस्त, 2023 के दौरान संचरण जाम की कुल मात्रा **1.78 MU** थी, जो की विद्युत एक्सचेंजों में कारोबार की गई विद्युत की कुल मात्रा का केवल 0.02 % है और अगस्त, 2023 के महीने के दौरान आपूर्ति की गई कुल ऊर्जा का 0.001 % है।

The total volume of transmission congestion that happened during the month of August, 2023 was **1.78 MU** which is only 0.02 % of the total volume of electricity transacted in the power exchanges and 0.001 % of total energy supplied during the month of August, 2023.

RTM में 2 दिन अर्थात् दिनांक 9 एवं 22 अगस्त, 2023 और DAC & ID में 1 दिन अर्थात् दिनांक 4 अगस्त, 2023 को संचरण जाम देखा गया। जबकि DAM, HP-DAM, GDAM, TAM, HP-TAM, HP-DAC & ID, GTAM और G-DAC & ID में कोई संचरण जाम नहीं देखा गया। अगस्त, 2023 माह के महीने में रिपोर्ट की गई वास्तविक समय में विद्युत कटौती की कुल मात्रा केवल **56.98 MU** थी।

Transmission congestion observed in RTM on 2 days i.e. 9th & 22nd August, 2023 and DAC & ID on 1 day i.e. 4th August, 2023. There was no congestion in DAM, HP-DAM, GDAM, TAM, HP-TAM, HP-DAC & ID, GTAM and G-DAC & ID. The total volume of real time curtailment reported in the month of August, 2023 was only **56.98 MU**.

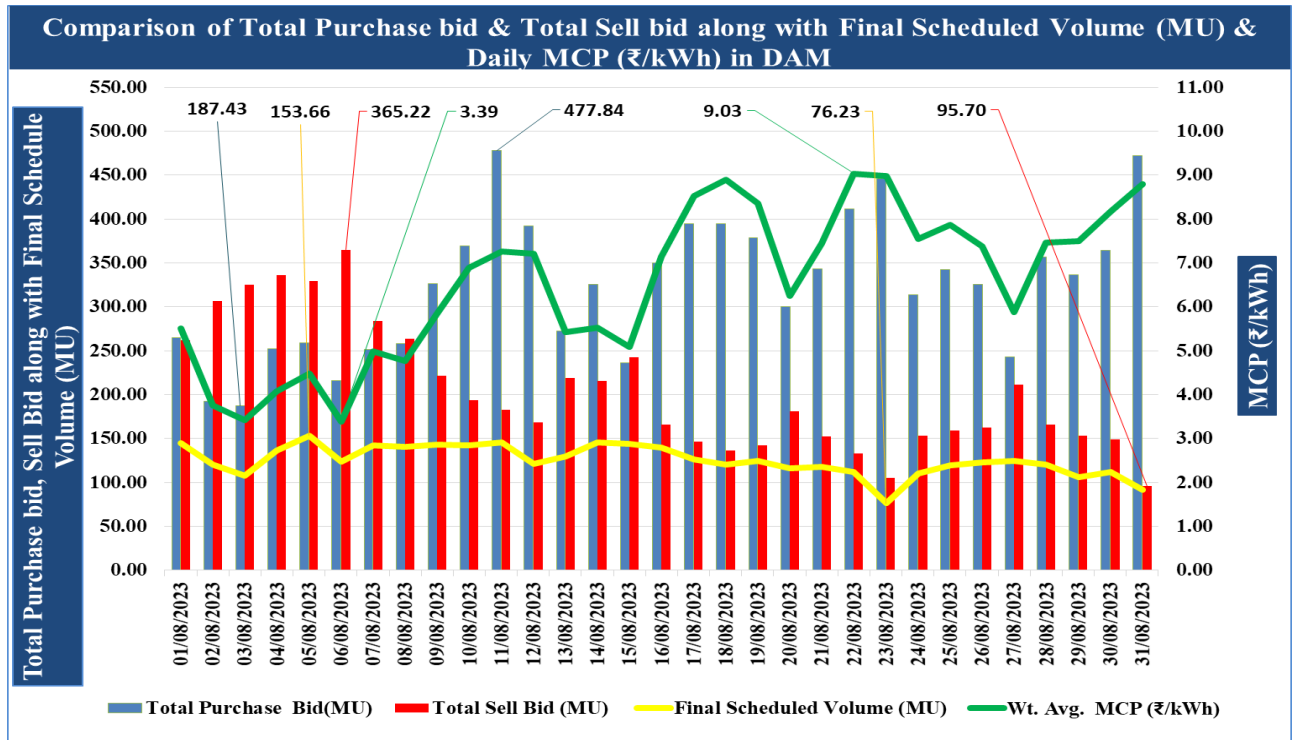
- अगस्त, 2023 माह के दौरान अंतर्राज्यीय पारेषण प्रणाली (ISTS) में निर्धारित अनुसूचित विद्युत की कुल मात्रा **75,125 MU** थी। अगस्त, 2023 के महीने में अल्पावधि बाजार में विद्युत का लेन-देन अंतर्राज्यीय पारेषण प्रणाली (ISTS) के माध्यम से अनुसूचित की गई कुल विद्युत की मात्रा का 34.47 % रहा।

The total volume of electricity scheduled at ISTS during the month of August, 2023 was **75,125 MU**. The total volume of electricity transacted in the short term market was **34.47 %** of total volume schedule at ISTS in the month of August, 2023.

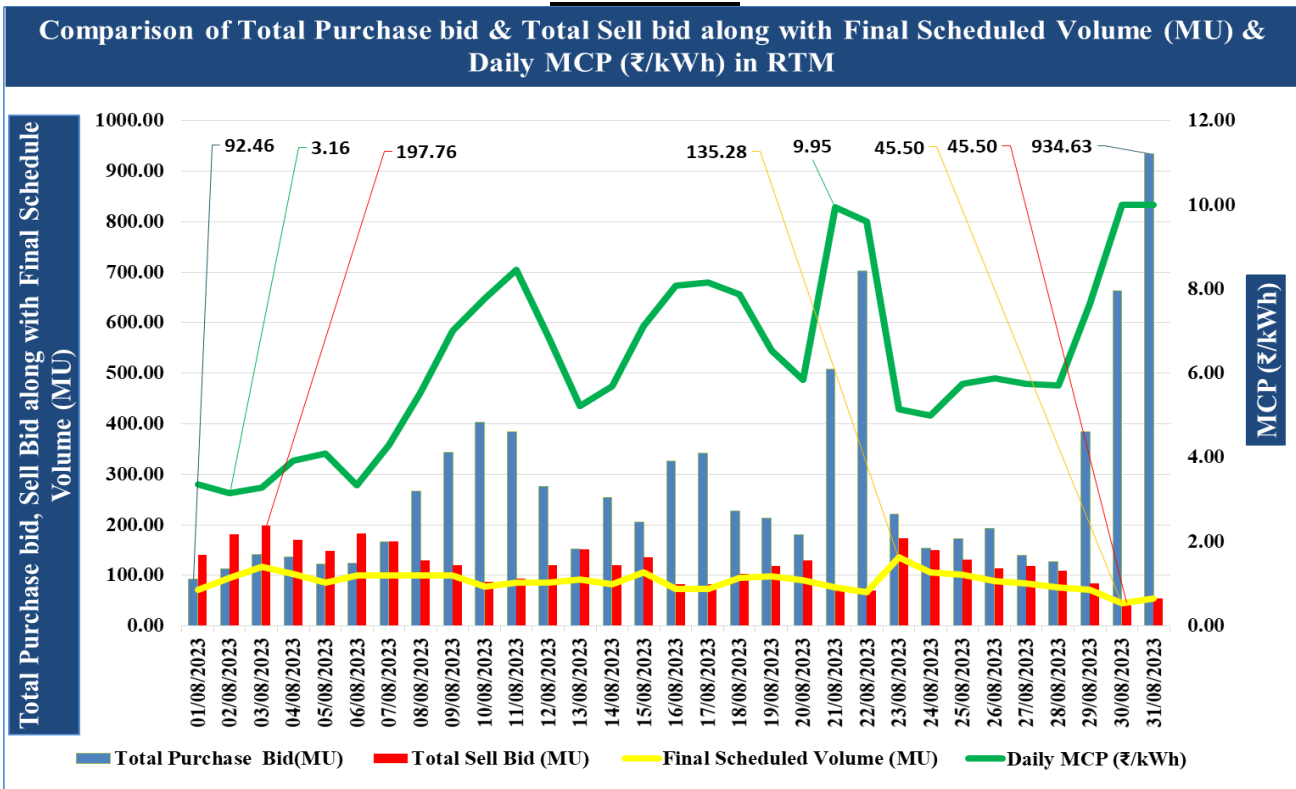
- अगस्त, 2023 माह के दौरान DAM और RTM में विद्युत की खरीद और बिक्री बोलियों, अंतिम अनुसूचित मात्रा और दैनिक औसत MCP की भिन्नता निम्नलिखित चित्रों में दर्शाई गई है:

The variation of Purchase and Sell bids, Final Scheduled Volume and Daily Avg. MCP in DAM and RTM during the month of August, 2023 are shown in following figures:

DAM Volume



RTM Volume

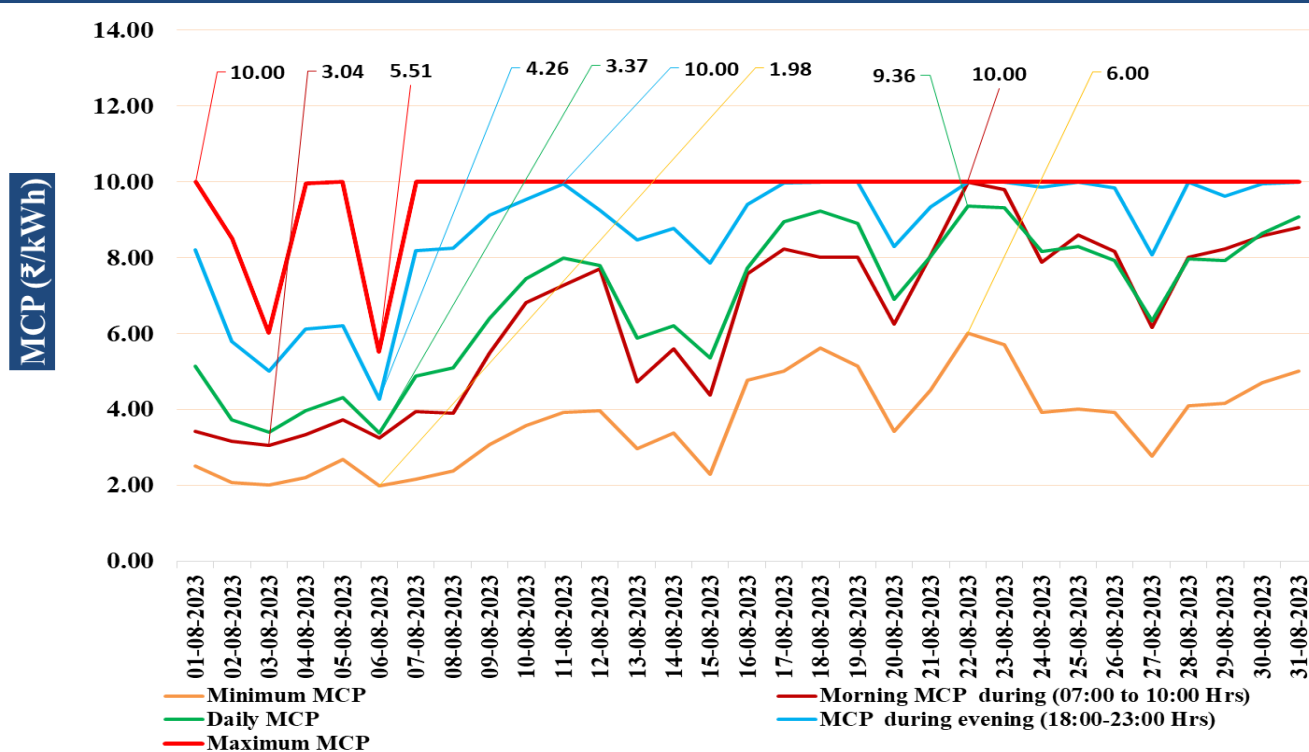


➤ अगस्त, 2023 माह के दौरान DAM और RTM में अधिकतम, न्यूनतम, दैनिक, सुबह और शाम के समय MCP की भिन्नता निम्नलिखित चित्रों में दिखाई गई है:

The variation of Maximum, Minimum, Daily, Morning and Evening time MCPs in DAM and RTM during the month of August, 2023 are shown in following figures:

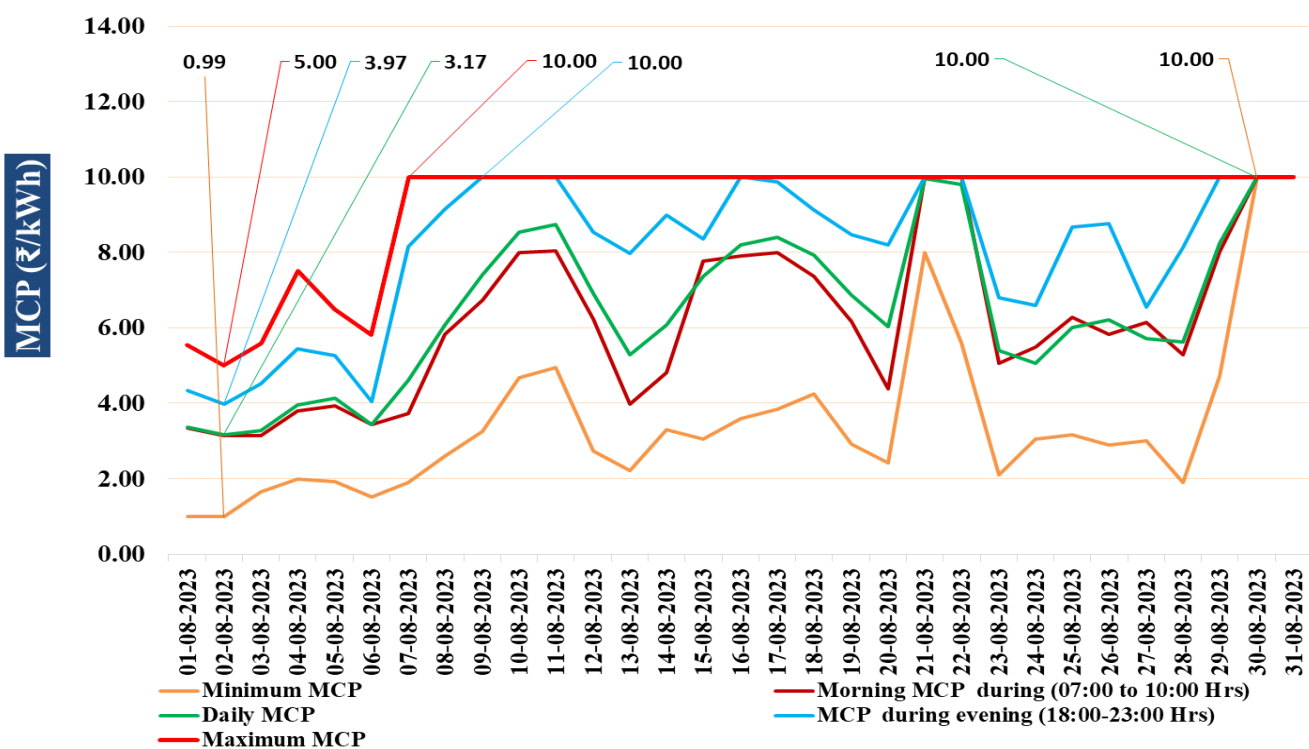
DAM Prices

Comparison of Maximum, Minimum, Daily, Morning time and Evening time MCP (₹/kWh) in DAM



RTM Prices

Comparison of Maximum, Minimum, Daily, Morning time and Evening time MCP (₹/kWh) in RTM



MARKET MONITORING REPORT DETAILS

Electricity Transactions on Power Exchanges in India

1. Day Ahead Market (DAM)

- 1.1.** The total volume of electricity transacted on the power exchanges, viz., IEX, PXIL and HPX in the Day Ahead Market (DAM) in the month of August, 2023 was **3,898.02 MU**. The total energy supplied in the country during the month of August, 2023 was 151,028 MU. Thus, the volume of electricity transacted on the power exchanges in DAM during August, 2023 was 2.58 % of the total energy supplied in the country. Comparing with the total volume of electricity transacted in DAM during last month July, 2023 i.e. **3,966.20 MU** which was 2.75 % of the total energy supplied (144,090 MU) in the country during July, 2023. Similarly, the total volume of electricity transacted in DAM during previous year i.e. August, 2022, was **3,538.82 MU** which was 2.71 % of the total energy supplied (130,390 MU) in the country during August, 2022.
- 1.2.** The volume of electricity transacted on IEX, PXIL and HPX during August, 2023 were **3881.41 MU, 16.34 MU and 0.27 MU**, respectively. The volume of electricity transacted on IEX during July, 2023 was **3,966.20 MU** and no transaction of electricity took place in PXIL & HPX. The volume of electricity transacted on IEX and PXIL during August, 2022 were **3528.70 MU and 10.12 MU**, respectively and no transaction of electricity took place in HPX.
- 1.3.** The DAM volume for August, 2023 in IEX is inclusive of Cross Border Transactions of Electricity with Nepal and Bhutan (details given at **Annexure XII**), which was **269.72 MU** (i.e. 0.11 MU bought by Nepal and 269.61 MU sold by Nepal).
- 1.4.** The Average Market Clearing Price (MCP) on IEX during the month of August, 2023 was ₹ **6.43/kWh**, which shows an increase of 42.26 % & 22.24 % when compared with average MCP's for the month of July, 2023 and August, 2022, which were ₹ **4.52/kWh** and ₹ **5.26/kWh**, respectively. On PXIL, the average MCP during the month of August, 2023 was ₹ **9.33/kWh**, which shows an increase of 45.33 % when compared with average MCP's for the month of August, 2022, which was ₹ **6.42/kWh**. No transaction of electricity took place in PXIL during July, 2023. On HPX, the average MCP during the month of August, 2023 was ₹ **10.00/kWh** and no transaction of electricity took place in HPX during July, 2023 and August, 2022.
- 1.5. Market Clearing Price, Area Clearing Price and Final Scheduled Volume of DAM in the Power Exchanges**

Final Scheduled Volume (FSV), Daily Avg. Market Clearing Prices (MCP), Area Clearing Prices (ACP) in Day Ahead Market during the month of August, 2023 as compared with July, 2023 and August, 2022 is given in Table- 1A & 1B:

(a) Final Scheduled Volume:

Exchange	Period	Final Scheduled Volume (MU)			
		Total	Minimum (on a day)	Maximum (on a day)	Average (per day)
IEX	August, 2023*	3881.41	76.23	153.66	125.21
	July, 2023*	3966.20	106.13	150.08	127.94
	%Change (Month over Month)	-2.14	-28.17	2.39	-2.13
	August, 2022*	3528.70	67.25	157.30	113.83
	%Change (Year over Year)	10.00	13.35	-2.31	10.00
PXIL	August, 2023	16.34	0.04	3.39	0.63
	July, 2023	-	-	-	-
	%Change (Month over Month)	NA	NA	NA	NA
	August, 2022	10.12	0.002	1.88	0.35
	%Change (Year over Year)	61.46	1900.00	80.32	80.00
HPX	August, 2023	0.27	0.27	0.27	0.27
	July, 2023	-	-	-	-
	%Change (Month over Month)	NA	NA	NA	NA
	August, 2022	-	-	-	-
	%Change (Year over Year)	NA	NA	NA	NA

-: No transaction took place

NA: Not Applicable

* DAM Volume in IEX is inclusive of Cross Border Transactions of Electricity with Nepal and Bhutan

Table: 1A

(b) Daily Avg. Market Clearing Price (MCP) and Area Clearing Price (ACP):

Exchange	Period	Prices (₹/kWh)				
		Daily MCP (₹/kWh)		ACP (₹/kWh)		Monthly Avg. MCP (₹/kWh)
		Minimum	Maximum	Minimum	Maximum	Average
IEX	August, 2023	3.39	9.03	1.98	10.00	6.43
	July, 2023	2.52	5.47	1.00	10.00	4.52
	%Change (Month over Month)	34.52	65.08	98.00	0.00	42.26
	August, 2022	3.22	7.43	1.00	12.00	5.26
	%Change (Year over Year)	5.28	21.53	98.00	-16.67	22.24
PXIL	August, 2023	5.96	10.00	5.00	10.00	9.33
	July, 2023	-	-	-	-	-
	%Change (Month over Month)	NA	NA	NA	NA	NA
	August, 2022	3.00	9.12	2.00	12.00	6.42
	%Change (Year over Year)	98.67	9.65	150.00	-16.67	45.33

Exchange	Period	Prices (₹/kWh)				
		Daily MCP (₹/kWh)		ACP (₹/kWh)		Monthly Avg. MCP (₹/kWh)
		Minimum	Maximum	Minimum	Maximum	Average
HPX	August, 2023	10.00	10.00	10.00	10.00	10.00
	July, 2023	-	-	-	-	-
	% Change (Month over Month)	NA	NA	NA	NA	NA
	August, 2022	-	-	-	-	-
	% Change (Year over Year)	NA	NA	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table: 1B

- 1.1. The maximum Area Clearing Price (ACP) of ₹ 10.00/kWh in IEX was observed in all 13 regions during 1247 time blocks on 1st, 5th & 7th to 31st August, 2023. As there was no congestion in transmission system, the MCP for these time blocks was also ₹ 10.00/kWh. Whereas, in PXIL, the maximum ACP of ₹ 10.00/kWh was observed in all 13 regions during 861 time blocks on 5th, 7th to 18th & 20th to 31st August, 2023. As there was no congestion in transmission system, the MCP for these time blocks was also ₹ 10.00/kWh. Further, in HPX, the maximum ACP of ₹ 10.00/kWh was observed in all 13 regions during 24 time blocks on 31st August, 2023. As there was no congestion in transmission system, the MCP for these time blocks was also ₹ 10.00/kWh.
- 1.2. The minimum ACP of ₹ 1.98/kWh in IEX was observed in all 13 regions during the time block 12:00 - 12:15 Hrs on 6th August, 2023. As there was no congestion in transmission system, the MCP for this time-block was also ₹ 1.98/kWh. Whereas, in PXIL, the minimum ACP of ₹ 5.00/kWh was observed in all 13 regions during 8 time blocks 03:00-03:15 to 04:45-05:00 Hrs on 9th August, 2023. As there was no congestion in transmission system, the MCP for these time blocks was also ₹ 5.00/kWh. Further, in HPX, the minimum ACP of ₹ 10.00/kWh was observed in all 13 regions during 24 time blocks 18:00 - 18:15 to 23:45 - 24:00 Hrs on 31st August, 2023. As there was no congestion in transmission system, the MCP for these time blocks was also ₹ 10.00/kWh.
- 1.3. In the month of August, 2023, the transaction of electricity in IEX in **High Price Day Ahead Market (HP-DAM)** was **4.23 MU** at an average MCP of **₹ 15.49/kWh**, whereas, no transaction took place in PXIL & HPX in HP-DAM.

2. Real Time Market (RTM)

The total volume of electricity transacted on the power exchanges in Real Time Market in August, 2023 was **2,739.81 MU**, out of which **2,738.05 MU** (99.94 %) was transacted in IEX, **0.63 MU** (0.02 %) was transacted in PXIL and **1.13 MU** (0.04 %) was transacted in HPX. The Final Scheduled Volume (FSV), Daily Avg. Market Clearing Prices (MCP) and Area Clearing Prices (ACP) in Real Time Market during the month of August, 2023 as compared with July, 2023 and August, 2022 are as given in table 2A & 2B:

(i) Final Scheduled Volume:

Exchange	Period	Final Scheduled Volume (MU)			
		Total	Minimum (on a day)	Maximum (on a day)	Average (per day)
IEX	August, 2023	2738.05	45.50	135.28	88.32
	July, 2023	2540.45	64.86	112.79	81.95
	% Change (Month over Month)	7.78	-29.85	19.94	7.77
	August, 2022	2265.25	52.11	104.18	73.07
	% Change (Year over Year)	20.87	-12.68	29.85	20.87
PXIL	August, 2023	0.63	0.63	0.63	0.63
	July, 2023	-	-	-	-
	% Change (Month over Month)	NA	NA	NA	NA
	August, 2022	0.15	0.004	0.04	0.01
	% Change (Year over Year)	320.00	15650.00	1475.00	6200.00
HPX	August, 2023	1.13	0.08	0.97	0.38
	July, 2023	-	-	-	-
	% Change (Month over Month)	NA	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table-2A

(ii) Daily Avg. Market Clearing Price (MCP) and Area Clearing Price (ACP):

Exchange	Period	Prices (₹/kWh)				
		Daily MCP (₹/kWh)		ACP (₹/kWh)		Monthly Avg. MCP (₹/kWh)
		Minimum	Maximum	Minimum	Maximum	Average
IEX	August, 2023	3.16	10.00	0.50	10.00	6.07
	July, 2023	2.71	6.65	0.49	10.00	4.55
	% Change (Month over Month)	16.61	50.38	2.04	0.00	33.41
	August, 2022	2.39	8.66	0.08	12.00	4.96
	% Change (Year over Year)	32.22	15.47	525.00	-16.67	22.38

Exchange	Period	Prices (₹/kWh)				
		Daily MCP (₹/kWh)		ACP (₹/kWh)		Monthly Avg. MCP (₹/kWh)
		Minimum	Maximum	Minimum	Maximum	Average
PXIL	August, 2023	10.00	10.00	10.00	10.00	10.00
	July, 2023	-	-	-	-	-
	% Change (Month over Month)	NA	NA	NA	NA	NA
	August, 2022	3.20	3.25	2.58	12.00	3.21
	% Change (Year over Year)	212.50	207.69	287.60	-16.67	211.53
HPX	August, 2023	10.00	10.00	10.00	10.00	10.00
	July, 2023	-	-	-	-	-
	% Change (Month over Month)	NA	NA	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table-2B

3. Green Day Ahead Market (GDAM):

The volume of electricity transacted in GDAM in August, 2023 was **162.71 MU** in IEX at an average MCP of **₹ 6.19/kWh** and no transaction took place in PXIL & HPX in GDAM. The Final Scheduled Volume (FSV), Daily Avg. Market Clearing Prices (MCP), Area Clearing Prices (ACP), Real Time Curtailment and details of Transmission Congestion under these 3 segments in Green Day Ahead Market during the month of August, 2023 and its comparison with July, 2023 and August, 2022 are as given in Table 3A and 3B:

i) Final Scheduled Volume :

Exchange	Segment	Period	Final Scheduled Volume (MU)			
			Total	Minimum (on a day)	Maximum (on a day)	Average (per day)
IEX	Solar	August, 2023	36.88	0.48	3.41	1.19
		July, 2023	67.68	0.80	4.73	2.18
		% Change (Month over Month)	-45.51	-40.00	-27.91	-45.41
		August, 2022	151.46	2.11	14.50	4.89
		% Change (Year over Year)	-75.65	-77.25	-76.48	-75.66
	Non Solar	August, 2023	116.08	2.30	7.15	3.74
		July, 2023	128.10	2.47	6.17	4.13
		% Change (Month over Month)	-9.38	-6.88	15.88	-9.44
		August, 2022	169.05	2.83	8.42	5.45
		% Change (Year over Year)	-31.33	-18.73	-15.08	-31.38
	Hydro	August, 2023	9.75	0.23	1.12	0.70
		July, 2023	16.37	0.16	1.13	0.53
		% Change (Month over Month)	-40.44	43.75	-0.88	32.08
		August, 2022	-	-	-	-
		% Change (Year over Year)	NA	NA	NA	NA
PXIL	Solar, Non Solar and Hydro	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		% Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		% Change (Year over Year)	NA	NA	NA	NA
HPX	Solar, Non Solar and Hydro	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		% Change (Month over Month)	NA	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table-3A

ii) Daily Avg. Market Clearing Price (MCP) and Area Clearing Price (ACP):

Exchange	Segment	Period	Prices (₹/kWh)				
			Daily MCP (₹/kWh)		ACP (₹/kWh)		Monthly Avg. MCP (₹/kWh)
			Minimum	Maximum	Minimum	Maximum	Average
IEX	Solar, Non Solar and Hydro	August, 2023	3.76	10.00	1.83	10.00	6.19
		July, 2023	3.01	5.39	1.83	10.00	4.31
		% Change (Month over Month)	24.92	85.53	0.00	0.00	43.62
		August, 2022	3.77	8.16	1.90	12.00	5.49
		% Change (Year over Year)	-0.27	22.55	-3.68	-16.67	12.75
PXIL	Solar, Non Solar and Hydro	August, 2023	-	-	-	-	-
		July, 2023	-	-	-	-	-
		% Change (Month over Month)	NA	NA	NA	NA	NA
		August, 2022	-	-	-	-	-
		% Change (Year over Year)	NA	NA	NA	NA	NA
HPX	Solar, Non Solar and Hydro	August, 2023	-	-	-	-	-
		July, 2023	-	-	-	-	-
		% Change (Month over Month)	NA	NA	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table-3B

- 3.1** There was no transmission congestion in the power exchanges in Green Day Ahead Market during the month of August, 2023, July, 2023 and August, 2022.
- 3.2** There was no real time curtailment in the power exchanges in Green Day Ahead Market during the month of August, 2023, July, 2023 and August, 2022.
- 3.3** The **top 10 sellers** on the power exchanges in **Green Day Ahead Market (GDAM)** in the month of August, 2023 were **Karnataka, J&K, Maharashtra, Andhra Pradesh, SBSR Power Cleantech Eleven Private Limited, Ostro Kannada Power Private Limited, Renew Surya Ravi Private Limited (solar), Singoli Bhagwati, WIND FIVE RENERGY LIMITED and Rajasthan**, which constituted **87.67 %** of the market volume.
- 3.4** The **top 10 buyers** on the power exchanges in **Green Day Ahead Market (GDAM)** in the month of August, 2023 were **ArcelorMittal Nippon steel (ESIL), DVC, Maharashtra, Punjab, Kerala, Tamil Nadu, Uttar Pradesh, Bihar, BHARAT ALUMINIUM COMPANY LTD (Bulk Consumer) and Karnataka**, which constituted **74.22 %** of the market volume.

4. Term Ahead Market (TAM)

- 4.1. The total volume of electricity transacted on the power exchanges in Term Ahead Market in August, 2023 on delivery date basis was **1411.30 MU**, out of which **768.73 MU** (54.47 %) was transacted on IEX, **287.36 MU** (20.36 %) was transacted on PXIL and **355.21 MU** (25.17 %) was transacted on HPX.
- 4.2. The total volume of electricity transacted on the power exchanges in Term Ahead Market in July, 2023 on delivery date basis was **462.02 MU**, out of which **287.60 MU** (62.25 %) was transacted on IEX, **20.40 MU** (4.42 %) was transacted on PXIL and **154.02 MU** (33.34 %) was transacted on HPX.
- 4.3. Similarly, the total volume of electricity transacted on the power exchanges in Term Ahead Market in August, 2022 on delivery date basis was **122.40 MU**, out of which, **122.40 MU** (100 %) was transacted on IEX and no transaction took place in PXIL & HPX.
- 4.4. With respect to the total energy supplied during the month of August, 2023 in the country, the volume of electricity traded on the power exchanges in TAM on delivery date basis represents **0.93 %** of the total energy supplied. The same was **0.32 %** in July, 2023 and **0.09 %** in August, 2022.
- 4.5. In the month of August, 2023, there was no transmission congestion in IEX, PXIL and HPX in TAM.
- 4.6. In the month of August, 2023, there was real time curtailment of **44.21 MU** in TAM, Out of which **8.06 MU** happened under Daily-Anyday contract, **2.34 MU** happened under Monthly contract and **14.89 MU** under Anyday Single Sided contract in IEX. Whereas, in PXIL, there was real time curtailment of **11.73 MU** that happened under Weekly contract and **1.48 MU** under Anyday Single Sided contract. Whereas, in HPX, there was real time curtailment of **3.70 MU** that happened under Daily-Anyday contract and **2.01 MU** under Anyday Single Sided contract in TAM.
- 4.7. In the month of August, 2023, the transaction of electricity in HPX in **High Price Term Ahead Market (HP-TAM)** under Daily-Anyday contract was **64.00 MU** at an average MCP of ₹ **14.00/kWh**. HP-TAM segment has not been introduced in IEX & PXIL.
- 4.8. The comparison of total volume of electricity transacted and Average MCP in the power exchanges in Term Ahead Market (TAM) on delivery date basis during August, 2023 with July, 2023 and August, 2022 is given in Table – 4A & 4B:

(a) Final Scheduled Volume (MU), August, 2023 vis- a- vis July, 2023 and August, 2022

Exchange	Period	Final Scheduled Volume (MU)				
		Daily or Any Day	Weekly	Monthly	Anyday Single Side	Total
IEX	August, 2023	229.99	-	72.06	466.68	768.73
	July, 2023	69.60	75.60	-	142.40	287.60
	%Change (Month over Month)	230.45	NA	NA	227.72	167.29

Exchange	Period	Final Scheduled Volume (MU)				
		Daily or Any Day	Weekly	Monthly	Anyday Single Side	Total
	August, 2022	-	122.40	-	-	122.40
	%Change (Year over Year)	NA	NA	NA	NA	528.05
PXIL	August, 2023	0.56	105.87	-	180.93	287.36
	July, 2023	-	-	-	20.40	20.40
	%Change (Month over Month)	NA	NA	NA	786.91	1308.63
	August, 2022	-	-	-	-	-
	%Change (Year over Year)	NA	NA	NA	NA	NA
HPX	August, 2023	113.44	-	-	241.77	355.21
	July, 2023	-	-	-	154.02	154.02
	%Change (Month over Month)	NA	NA	NA	56.97	130.63
	August, 2022	-	-	-	-	-
	%Change (Year over Year)	NA	NA	NA	NA	NA

- : No transaction took place

NA: Not Applicable

Table: 4A

(b) Average MCP, August, 2023 vis- a- vis July, 2023 and August, 2022

Exchange	Period	Average MCP (₹/kWh)			
		Daily or Any Day	Weekly	Monthly	Anyday Single Side
IEX	August, 2023	7.07	-	5.04	7.18
	July, 2023	4.35	4.40	-	5.13
	%Change (Month over Month)	62.53	NA	NA	39.96
	August, 2022	-	5.49	-	-
	%Change Year over Year)	NA	NA	NA	NA
PXIL	August, 2023	10.00	6.45	-	6.53
	July, 2023	-	-	-	4.45
	%Change (Month over Month)	NA	NA	NA	46.74
	August, 2022	-	-	-	-
	%Change (Year over Year)	NA	NA	NA	NA
HPX	August, 2023	6.10	-	-	7.16
	July, 2023	-	-	-	5.81
	%Change (Month over Month)	NA	NA	NA	23.24
	August, 2022	-	-	-	-
	%Change Year over Year)	NA	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table: 4B

5. Day Ahead Contingency & Intra Day (DAC & ID)

The total volume of electricity transacted in the IEX, PXIL & HPX in DAC & ID on delivery date basis during August, 2023 was **2743.52 MU**.

The total volume of electricity transacted in DAC & ID in Day Ahead Contingency & Intra Day contracts during August, 2023 and its comparison with July, 2023 and August, 2022 on delivery date basis have been shown in Tables 5A to 5B.

a) Final Scheduled Volume (MU), August, 2023 vis- a- vis July, 2023 and August, 2022

Exchange	Period	Final Scheduled Volume (MU)		
		Day Ahead Contingency	Intra Day	Total
IEX	August, 2023	896.59	8.82	905.41
	July, 2023	734.64	13.47	748.11
	%Change (Month over Month)	22.04	-34.52	21.03
	August, 2022	598.89	1.60	600.49
	%Change (Year over Year)	49.71	451.25	50.78
PXIL	August, 2023	806.31	9.52	815.83
	July, 2023	368.25	5.12	373.37
	%Change (Month over Month)	118.96	85.94	118.50
	August, 2022	477.76	9.04	486.80
	%Change (Year over Year)	68.77	5.31	67.59
HPX	August, 2023	1012.32	9.96	1022.28
	July, 2023	634.27	4.75	639.02
	%Change (Month over Month)	59.60	109.68	59.98
	August, 2022	253.48	-	253.48
	%Change (Year over Year)	299.37	NA	303.30

- : No transaction took place

NA: Not Applicable

Table: 5A

b) Average MCP, August, 2023 vis- a- vis July, 2023 and August, 2022

Exchange	Period	Average MCP (₹/kWh)	
		Day Ahead Contingency	Intra Day
IEX	August, 2023	7.53	9.89
	July, 2023	5.38	9.42
	%Change (Month over Month)	39.96	4.99
	August, 2022	5.74	9.33
	%Change Year over Year)	31.18	6.00
PXIL	August, 2023	8.03	9.81
	July, 2023	5.71	9.77

Exchange	Period	Average MCP (₹/kWh)	
		Day Ahead Contingency	Intra Day
	%Change (Month over Month)	40.63	0.41
	August, 2022	5.30	11.52
	%Change (Year over Year)	51.51	-14.84
HPX	August, 2023	7.71	9.74
	July, 2023	5.47	9.26
	%Change (Month over Month)	40.95	5.18
	August, 2022	5.37	-
	%Change Year over Year)	43.58	NA

- : No transaction took place

NA: Not Applicable

Table: 5B

- In the month of August, 2023, there was transmission congestion of **1.16 MU** in HPX. Whereas, there was no transmission congestion in IEX and PXIL in DAC & ID.
- In the month of August, 2023, there was real time curtailment of **12.77 MU** in DAC & ID, Out of which **7.38 MU** happened under Day Ahead Contingency contract in IEX, **5.28 MU** happened under Day Ahead Contingency contract in PXIL and **0.10 MU** happened under Day Ahead Contingency contract in HPX in DAC & ID.
- In the month of August, 2023, the transaction of electricity in HPX in **High Price Day Ahead Contingency & Intra Day (HP- DAC & ID)** under Day Ahead Contingency contract was **75.56 MU** at an average MCP of **₹ 15.83/kWh** and Intra Day contract was **76.09 MU** at an average MCP of **₹ 16.65/kWh**. HP- DAC & ID segment has not been introduced in IEX & PXIL.

6. Green Term Ahead Market (GTAM):

The total volume of electricity transacted in the IEX, PXIL & HPX in GTAM on delivery date basis during August, 2023 was **3.72 MU** in Non-Solar only.

The total volume of electricity transacted in GTAM in Daily/ Anyday, Weekly, Monthly and Anyday Single Side contracts during August, 2023 and its comparison with July, 2023 and August, 2022 on delivery date basis have been shown in Tables 6A to 6F.

6.1 Solar Energy Segment in GTAM

The Final Scheduled Volume and the Price of electricity transacted in GTAM (Solar) in Power Exchanges during August, 2023 and its comparison with July, 2023 and August, 2022 have been shown in Table 6A & 6B below.

(i) **Final Scheduled Volume:**

Exchange	Solar Energy Contract	Period	Final Scheduled Volume (MU)			
			Total	Minimum (on a day)	Maximum (on a day)	Average (per day)
IEX	Daily/Anyday	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Weekly	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Monthly	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Anyday Single Side	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
PXIL	Daily/Anyday	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-

Exchange	Solar Energy Contract	Period	Final Scheduled Volume (MU)			
			Total	Minimum (on a day)	Maximum (on a day)	Average (per day)
		%Change (Year over Year)	NA	NA	NA	NA
		August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
		August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
		August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
HPX	Daily/Anyday	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Weekly	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Monthly	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Anyday Single Side	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA

∴ No transaction took place

NA: Not Applicable

Table-6A

(ii) Daily Avg. Market Clearing Price (MCP):

Exchange	Solar Energy Contract	Period	Prices(₹/kWh)		
			Minimum	Maximum	Average
IEX	Daily/Anyday	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-

Exchange	Solar Energy Contract	Period	Prices(₹/kWh)		
			Minimum	Maximum	Average
	Weekly	%Change (Year over Year)	NA	NA	NA
		August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Monthly	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Anyday Single Side	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
PXIL	Daily/Anyday	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Weekly	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Monthly	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Anyday Single Side	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
HPX	Daily/Anyday	August, 2023	-	-	-
		July, 2023	-	-	-

Exchange	Solar Energy Contract	Period	Prices(₹/kWh)		
			Minimum	Maximum	Average
		%Change (Month over Month)	NA	NA	NA
	Weekly	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
	Monthly	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
	Anyday Single Side	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table-6B

- In August, 2023, there was no transaction in GTAM (Solar) in IEX, PXIL & HPX.

6.2 Non-Solar Energy Segment in GTAM

The Final Scheduled Volume and the Price of electricity transacted in GTAM (Non-Solar) in Power Exchanges during August, 2023 and its comparison with July, 2023 and August, 2022 have been shown in Tables 6C & 6D below.

(i) Final Scheduled Volume:

Exchange	Non- Solar Energy Contract	Period	Final Scheduled Volume (MU)			
			Total	Minimum (on a day)	Maximum (on a day)	Average (per day)
IEX	Daily/Anyday	August, 2023	-	-	-	-
		July, 2023	0.96	0.04	0.14	0.06
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Weekly	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	1.93	0.07	0.07	0.07
		%Change (Year over Year)	NA	NA	NA	NA
	Monthly	August, 2023	3.72	0.12	0.12	0.12
		July, 2023	3.72	0.12	0.12	0.12
		%Change (Month over Month)	0.00	0.00	0.00	0.00
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Anyday Single Side	August, 2023	-	-	-	-
		July, 2023	-	-	-	-

Exchange	Non- Solar Energy Contract	Period	Final Scheduled Volume (MU)			
			Total	Minimum (on a day)	Maximum (on a day)	Average (per day)
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
PXIL	Daily/Anyday	%Change (Year over Year)	NA	NA	NA	NA
		August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Weekly	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Monthly	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Anyday Single Side	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
HPX	Daily/Anyday	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Weekly	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Monthly	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Anyday Single Side	August, 2023	-	-	-	-
		July, 2023	1.25	0.21	0.21	0.21
		%Change (Month over Month)	NA	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table - 6C

(ii) Daily Avg. Market Clearing Price (MCP):

Exchange	Non- Solar Energy Contract	Period	Prices(₹/kWh)		
			Minimum	Maximum	Average
IEX	Daily/Anyday	August, 2023	-	-	-
		July, 2023	4.65	5.48	4.77
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Weekly	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	5.80	5.80	5.80
		%Change (Year over Year)	NA	NA	NA
	Monthly	August, 2023	6.20	6.20	6.20
		July, 2023	6.80	6.80	6.80
		%Change (Month over Month)	-8.82	-8.82	-8.82
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Anyday Single Side	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
PXIL	Daily/Anyday	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Weekly	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Monthly	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-

Exchange	Non- Solar Energy Contract	Period	Prices(₹/kWh)		
			Minimum	Maximum	Average
	Anyday Single Side	%Change (Year over Year)	NA	NA	NA
		August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
HPX	Daily/Anyday	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
	Weekly	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
	Monthly	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
	Anyday Single Side	August, 2023	-	-	-
		July, 2023	5.99	5.99	5.99
		%Change (Month over Month)	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table - 6D

- In August, 2023, there was no transmission congestion in IEX. There was no transaction in PXIL and HPX in GTAM (Non Solar).
- In August, 2023, there was no real time curtailment in IEX and HPX. There was no transaction in PXIL and HPX in GTAM (Non Solar).

6.3 Hydro Energy Segment in GTAM

The Final Scheduled Volume and the Price of electricity transacted in GTAM (Hydro) in Power Exchanges during August, 2023 and its comparison with July, 2023 and August, 2022 have been shown in Tables 6E & 6F below.

(i) Final Scheduled Volume:

Exchange	Hydro Energy Contract	Period	Final Scheduled Volume (MU)			
			Total	Minimum (on a day)	Maximum (on a day)	Average (per day)
IEX	Daily/Anyday	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA

Exchange	Hydro Energy Contract	Period	Final Scheduled Volume (MU)			
			Total	Minimum (on a day)	Maximum (on a day)	Average (per day)
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Weekly	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Monthly	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Anyday Single Side	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
PXIL	Daily/Anyday	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Weekly	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Monthly	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Anyday Single Side	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA

Exchange	Hydro Energy Contract	Period	Final Scheduled Volume (MU)			
			Total	Minimum (on a day)	Maximum (on a day)	Average (per day)
HPX		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Daily/Anyday	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Weekly	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Monthly	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Anyday Single Side	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table: 6E

(ii) Daily Avg. Market Clearing Price (MCP):

Exchange	Hydro Energy Contract	Period	Prices(₹/kWh)		
			Minimum	Maximum	Average
IEX	Daily/Anyday	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Weekly	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Monthly	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Anyday Single Side	August, 2023	-	-	-
		July, 2023	-	-	-

Exchange	Hydro Energy Contract	Period	Prices(₹/kWh)		
			Minimum	Maximum	Average
PXIL		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Daily/Anyday	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Weekly	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Monthly	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Anyday Single Side	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
HPX	Daily/Anyday	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
	Weekly	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
	Monthly	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
	Anyday Single Side	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table – 6F

- In August, 2023, there was no transaction in GTAM (Hydro) in IEX, PXIL & HPX.

7. Green Day Ahead Contingency & Intra Day (G-DAC & ID):

The total volume of electricity transacted in the IEX, PXIL & HPX in G-DAC & ID on delivery date basis during August, 2023 was **187.21 MU** (**20.79 MU** in Solar, **145.45 MU** in Non-Solar and **20.97 MU** in Hydro), respectively.

The total volume of electricity transacted in G-DAC & ID in Day Ahead Contingency and Intra Day contracts during August, 2023 and its comparison with July, 2023 and August, 2022 on delivery date basis have been shown in Tables 7A to 7F.

7.1 Solar Energy Segment in G-DAC & ID

The Final Scheduled Volume and the Price of electricity transacted in G-DAC & ID (Solar) in Power Exchanges during August, 2023 and its comparison with July, 2023 and August, 2022 have been shown in Table 7A & 7B below.

(iii) Final Scheduled Volume:

Exchange	Solar Energy Contract	Period	Final Scheduled Volume (MU)			
			Total	Minimum (on a day)	Maximum (on a day)	Average (per day)
IEX	Day Ahead Contingency	August, 2023	8.91	0.11	0.80	0.45
		July, 2023	5.57	0.14	0.83	0.43
		%Change (Month over Month)	59.96	-21.43	-3.61	4.65
		August, 2022	16.66	0.15	3.67	2.08
		%Change (Year over Year)	-46.52	-26.67	-78.20	-78.37
	Intra Day	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	1.16	1.16	1.16	1.16
		%Change (Year over Year)	NA	NA	NA	NA
PXIL	Day Ahead Contingency	August, 2023	5.27	0.18	0.67	0.41
		July, 2023	0.91	0.29	0.32	0.30
		%Change (Month over Month)	479.12	-37.93	109.38	36.67
		August, 2022	20.29	0.06	4.80	1.19
		%Change (Year over Year)	-74.03	200.00	-86.04	-65.55
	Intra Day	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
HPX	Day Ahead Contingency	August, 2023	6.61	0.00	1.04	0.22
		July, 2023	6.53	0.04	1.14	0.21
		%Change (Month over Month)	1.23	-100.00	-8.77	4.76

Exchange	Solar Energy Contract	Period	Final Scheduled Volume (MU)			
			Total	Minimum (on a day)	Maximum (on a day)	Average (per day)
	Intra Day	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table-7A

(iv) Daily Avg. Market Clearing Price (MCP):

Exchange	Solar Energy Contract	Period	Prices(₹/kWh)		
			Minimum	Maximum	Average
IEX	Day Ahead Contingency	August, 2023	2.18	9.90	5.37
		July, 2023	2.14	3.42	3.10
		%Change (Month over Month)	1.87	189.47	73.23
		August, 2022	3.00	4.70	3.43
		%Change (Year over Year)	-27.33	110.64	56.56
	Intra Day	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	3.05	3.05	3.05
		%Change (Year over Year)	NA	NA	NA
PXIL	Day Ahead Contingency	August, 2023	2.18	8.20	5.42
		July, 2023	1.79	3.24	2.54
		%Change (Month over Month)	21.79	153.09	113.39
		August, 2022	3.13	6.00	4.17
		%Change (Year over Year)	-30.35	36.67	29.98
	Intra Day	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
HPX	Day Ahead Contingency	August, 2023	2.71	8.29	5.48
		July, 2023	2.48	4.24	3.63
		%Change (Month over Month)	9.27	95.52	50.96
	Intra Day	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table-7B

- In August, 2023, there was no transmission congestion in G-DAC & ID (Solar) in IEX, PXIL & HPX.
- In August, 2023, there was no real time curtailment in G-DAC & ID (Solar) in IEX, PXIL & HPX.

7.2 Non-Solar Energy Segment in G-DAC & ID

The Final Scheduled Volume and the Price of electricity transacted in G-DAC & ID (Non-Solar) in Power Exchanges during August, 2023 and its comparison with July, 2023 and August, 2022 have been shown in Tables 7C & 7D below.

(iii) Final Scheduled Volume:

Exchange	Non- Solar Energy Contract	Period	Final Scheduled Volume (MU)			
			Total	Minimum (on a day)	Maximum (on a day)	Average (per day)
IEX	Day Ahead Contingency	August, 2023	61.38	0.79	7.35	1.98
		July, 2023	39.45	0.20	6.55	1.27
		%Change (Month over Month)	55.59	295.00	12.21	55.91
		August, 2022	15.23	0.04	2.01	0.51
		%Change (Year over Year)	303.02	1875.00	265.67	288.24
	Intra Day	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
PXIL	Day Ahead Contingency	August, 2023	21.33	0.06	2.52	0.82
		July, 2023	13.95	0.02	3.13	0.82
		%Change (Month over Month)	52.90	200.00	-19.49	0.00
		August, 2022	35.61	0.08	4.40	1.27
		%Change (Year over Year)	-40.10	-25.00	-42.73	-35.43
	Intra Day	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
HPX	Day Ahead Contingency	August, 2023	62.74	0.50	9.46	2.02
		July, 2023	68.00	0.07	5.39	2.19
		%Change (Month over Month)	-7.74	614.29	75.51	-7.76
	Intra Day	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA

∴ No transaction took place

NA: Not Applicable

Table - 7C

(iv) Daily Avg. Market Clearing Price (MCP):

Exchange	Non- Solar Energy Contract	Period	Prices(₹/kWh)		
			Minimum	Maximum	Average
IEX	Day Ahead Contingency	August, 2023	3.79	9.65	6.49
		July, 2023	3.57	5.86	5.21
		%Change (Month over Month)	6.16	64.68	24.57
		August, 2022	3.69	9.77	5.77
		%Change (Year over Year)	2.71	-1.23	12.48
	Intra Day	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
PXIL	Day Ahead Contingency	August, 2023	4.30	9.93	7.02
		July, 2023	3.67	8.61	4.76
		%Change (Month over Month)	17.17	15.33	47.48
		August, 2022	3.68	8.84	5.54
		%Change (Year over Year)	16.85	12.33	26.71
	Intra Day	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
HPX	Day Ahead Contingency	August, 2023	4.75	9.90	6.44
		July, 2023	3.30	6.77	4.92
		%Change (Month over Month)	43.94	46.23	30.89
	Intra Day	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table - 7D

- In August, 2023, there was no transmission congestion in IEX, PXIL & HPX in G-DAC & ID (Non Solar).
- In August, 2023, there was no real time curtailment in G-DAC & ID (Non Solar) in IEX, PXIL & HPX.

6.3 Hydro Energy Segment in G-DAC & ID

The Final Scheduled Volume and the Price of electricity transacted in G-DAC & ID (Hydro) in Power Exchanges during August, 2023 and its comparison with July, 2023 and August, 2022 have been shown in Tables 7E & 7F below.

(i) Final Scheduled Volume:

Exchange	Hydro Energy Contract	Period	Final Scheduled Volume (MU)			
			Total	Minimum (on a day)	Maximum (on a day)	Average (per day)
IEX	Day Ahead Contingency	August, 2023	8.56	0.07	2.11	1.07
		July, 2023	12.76	0.40	2.40	1.28
		%Change (Month over Month)	-32.92	-82.50	-12.08	-16.41
		August, 2022	80.57	1.10	3.85	2.60
		%Change (Year over Year)	-89.38	-93.64	-45.19	-58.85
	Intra Day	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	0.03	0.03	0.03	0.03
		%Change (Year over Year)	NA	NA	NA	NA
PXIL	Day Ahead Contingency	August, 2023	2.85	1.19	1.66	1.42
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	5.45	0.16	0.83	0.45
		%Change (Year over Year)	-47.71	643.75	100.00	215.56
	Intra Day	August, 2023	-	-	-	-
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		August, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
HPX	Day Ahead Contingency	August, 2023	9.52	0.07	2.11	0.79
		July, 2023	0.10	0.10	0.10	0.10
		%Change (Month over Month)	9420.00	-30.00	2010.00	690.00
	Intra Day	August, 2023	0.04	0.04	0.04	0.04
		July, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table: 7E

(ii) Daily Avg. Market Clearing Price (MCP):

Exchange	Hydro Energy Contract	Period	Prices(₹/kWh)		
			Minimum	Maximum	Average
IEX	Day Ahead Contingency	August, 2023	7.40	9.90	8.53
		July, 2023	2.44	6.31	4.06
		%Change (Month over Month)	203.28	56.89	110.10
		August, 2022	3.80	7.95	5.21
		%Change (Year over Year)	94.74	24.53	63.72
	Intra Day	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	3.72	3.72	3.72
		%Change (Year over Year)	NA	NA	NA
PXIL	Day Ahead Contingency	August, 2023	6.55	9.28	7.69
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	2.89	4.78	3.68
		%Change (Year over Year)	126.64	94.14	108.97
	Intra Day	August, 2023	-	-	-
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		August, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
HPX	Day Ahead Contingency	August, 2023	4.04	9.51	8.25
		July, 2023	4.18	4.18	4.18
		%Change (Month over Month)	-3.35	127.51	97.37
	Intra Day	August, 2023	10.00	10.00	10.00
		July, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table – 7F

- In August, 2023, there was no transmission congestion in G-DAC & ID (Hydro) in IEX, PXIL and HPX.
- In August, 2023, there was no real time curtailment in G-DAC & ID (Hydro) in IEX, PXIL and HPX.

8. Bilateral Transactions:

The total volume of electricity transacted through **bilateral transactions** in the month of August, 2023 was **12,295.02 MU**. The total buy volume of electricity transacted in bilateral market through direct transactions and trader in the month of August, 2023 were **3,708.96 MU** and **8,586.06 MU** respectively. The details of bilateral transactions of Electricity during August, 2023 is shown in Table Below:

August, 2023	Direct	Traders	Total Bilateral Transaction (MU)
Total	3,708.96	8,586.06	12,295.02
Minimum	0.66	1.67	-
Maximum	1,241.23	1,220.12	-

Table -8A

The region-wise maximum/ minimum volume of electricity transacted bilaterally during August, 2023 are given in table below:

(i) **Region-wise Volume:**

Region-wise Volume (MU)	ER		WR		NR		SR		NER	
	Direct	Trader	Direct	Trader	Direct	Trader	Direct	Trader	Direct	Trader
Total	264.70	562.45	507.80	1029.25	2301.63	3922.32	634.83	2972.98	-	99.06
Minimum	0.66	12.94	38.15	1.67	6.78	1.74	0.93	4.10	-	5.83
Maximum	139.47	319.94	319.80	424.08	1241.23	1220.12	386.40	1014.06	-	93.22

Table-8B

8.1. The top 5 buyers on bilateral transaction through direct transactions in the month of August, 2023 were **Punjab, Uttar Pradesh, Andhra Pradesh, Haryana** and **Maharashtra**, which constituted **77.11 %** of the market volume. Whereas **top 5 buyers** on bilateral transaction through traders in the month of August, 2023 were **Haryana, Tamil Nadu, Punjab, Delhi** and **Telangana**, which constituted **55.25 %** of the market volume. [Annexure III]

8.2. The top 5 sellers on bilateral transaction through direct transactions in the month of August, 2023 were **MP, Karnataka, SIMHAPURI, Rajasthan** and **Maharashtra**, which constituted **58.78 %** of the market volume. Whereas **top 5 sellers** on bilateral transaction through traders in the month of August, 2023 were **Himachal Pradesh, TEESTA HEP, JINDAL STAGE-II, JINDAL POWER** and **Gujarat**, which constituted **34.56 %** of the market volume. [Annexure III]

8.3. Deviation Volume -The volume of Deviation observed in the month of August, 2023 in import and export were **2,370.26 MU** and **2,102.64 MU** respectively. The total volume of Deviation observed in the month of August, 2023 can be taken as **2,236.45 MU**.

8.4. A comparison of volume of electricity transacted through the Power Exchanges together in DAM, GDAM, HP-DAM, RTM, TAM, HP-TAM, DAC & ID, HP-DAC & ID, GTAM and G-DAC & ID (on delivery date basis) with Bilateral transactions and Deviation in the month of August, 2023 is shown in **Figure 1:**

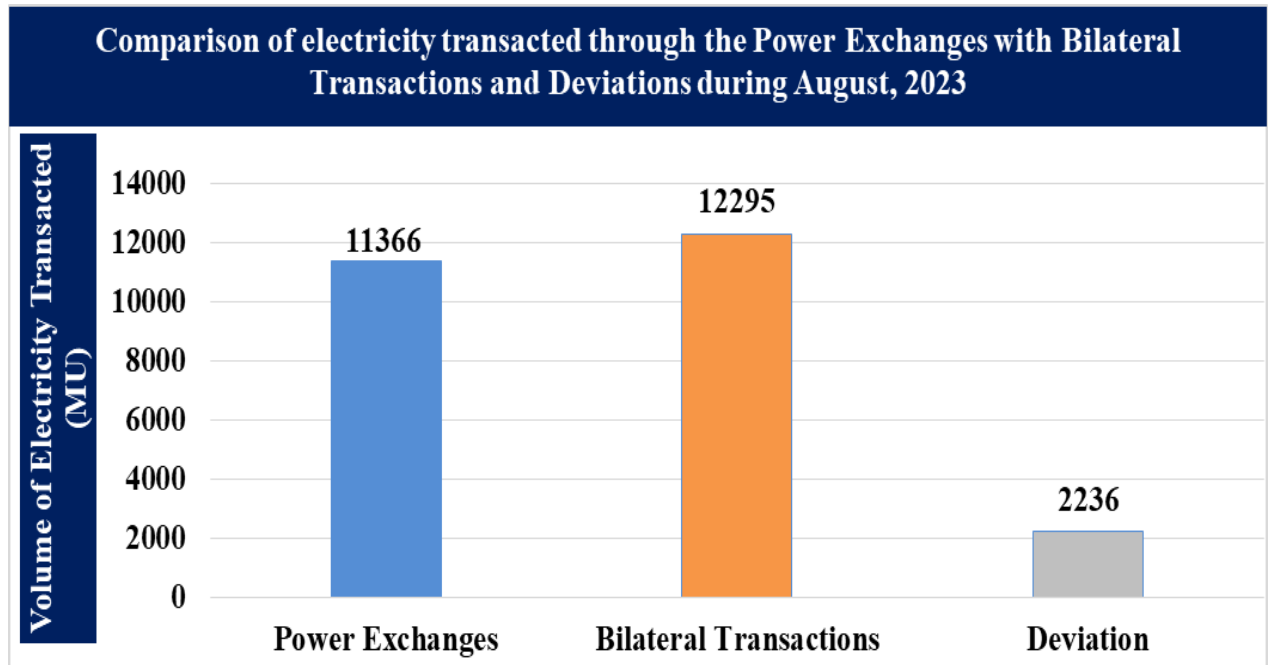
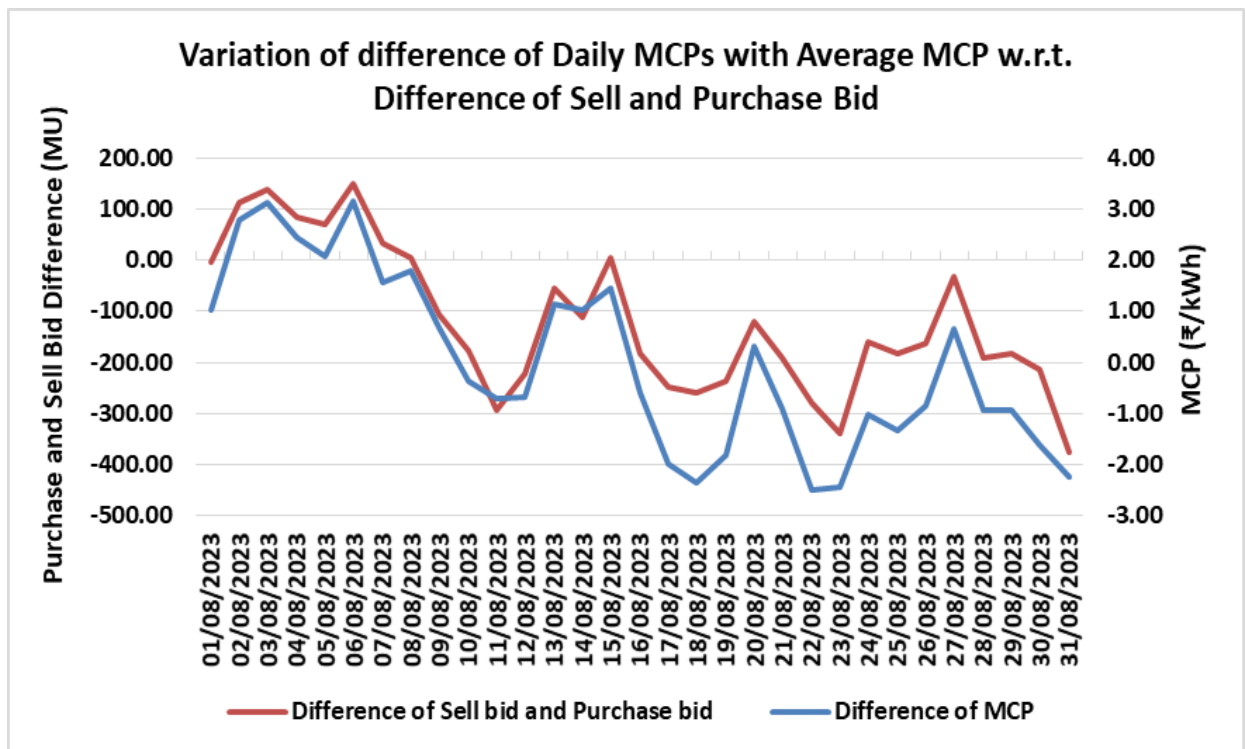


Figure -1

9. Analysis of movement of prices observed in DAM during August, 2023

A regression analysis has been carried out on the Day Ahead Market data taken from IEX website. Also, data was plotted in various graphs to observe patterns for each day of the August, 2023 month. The observations made are as under:

- 9.1. In order to find out the determinants which are responsible for the Daily Avg. MCP, a regression analysis has been carried out where the Daily Avg. MCP is the dependent variable and the independent variables are peak demand, total purchase bid, total sell bid, coal generation, hydro generation, wind generation and solar generation.
- 9.2. A double log function was used so that elasticity of Daily Avg. MCP could be read off from the coefficients of independent variables. The regression analysis revealed that the most significant variable was the Peak Demand. Further, the regression analysis revealed that the elasticity of the Daily Avg. MCP with respect to Peak Demand was 5.17 in the month of August, 2023.
- 9.3. The variation of difference of Daily Avg. MCPs with Average MCP w.r.t Difference of Sell and Purchase bid is Shown below:



- 9.4. The same relationship is visible from the analysis carried out from the plot in **Figure - 2**

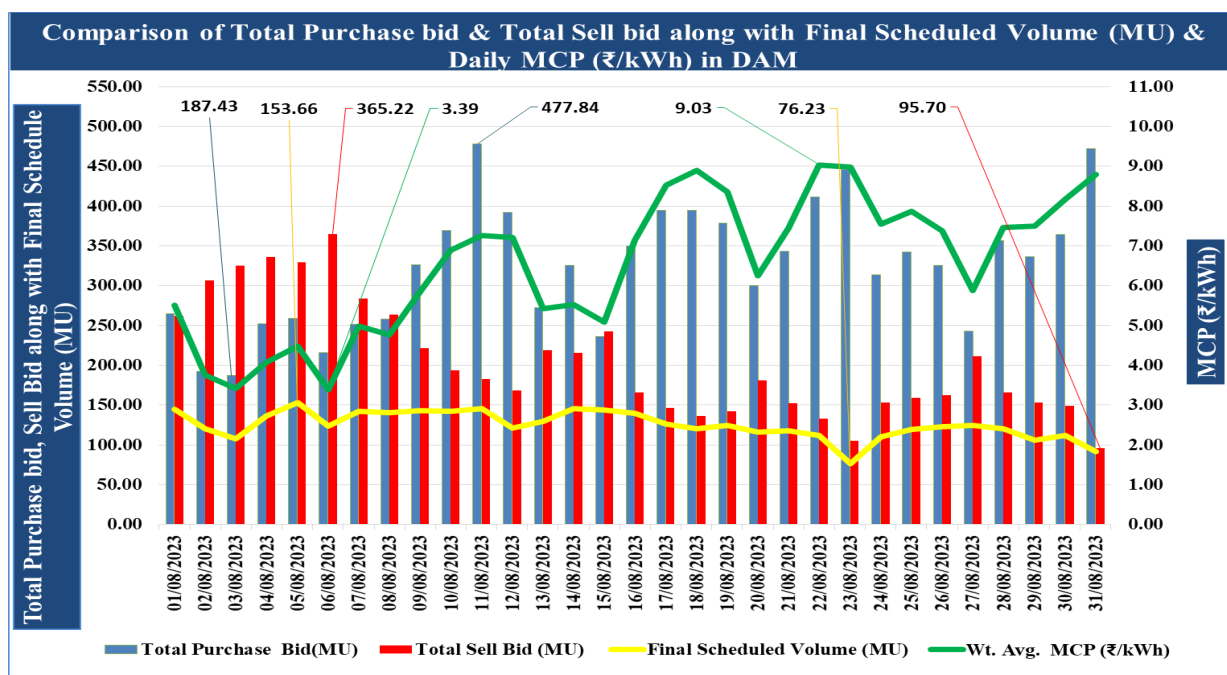


Figure – 2

9.5. Invariably, the Final Scheduled Volume (MU) and the Daily Avg. MCP (₹/kWh) showed decreasing trend on Sundays and increasing trend on Mondays as the demand of electricity in the country was less on Sundays as compared to other days of week. However, during the month of August, 2023, it is observed that on second Sunday (13th August, 2023), FSV showed increasing trend in comparison to second Saturday (12th August, 2023), on fourth Monday (28th August, 2023), FSV showed decreasing trend in comparison to fourth Sunday (27th August, 2023). The detailed analysis on this is given at **Appendix-I**.

9.6. A comparison of maximum, minimum, daily, evening time MCP is shown in **Figure-3**. The same are also tabulated in **Annexure-I**

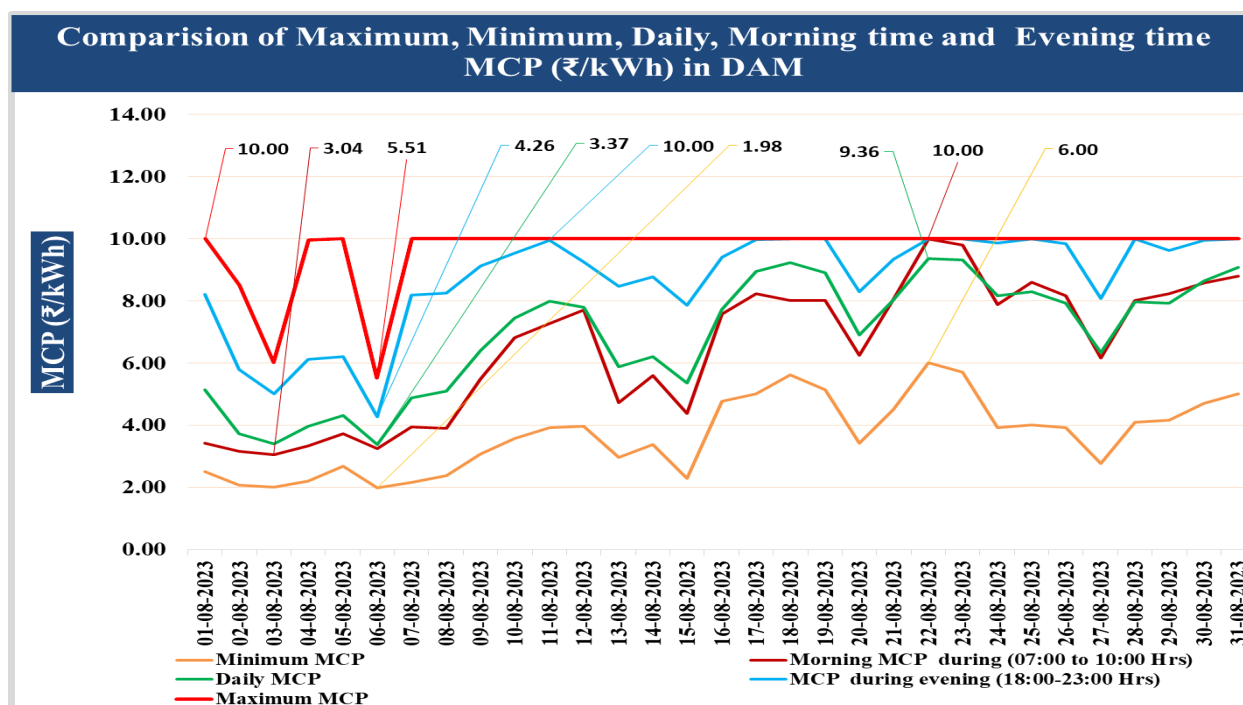


Figure-3

9.7. The Market Clearing Price duration curves for time block wise MCP for the month of August, 2023 is shown in **Figure 4**, whereas the time block wise MCP duration curve for the period 1st April, 2023 to 31st August, 2023 is shown in **Figure 5**.

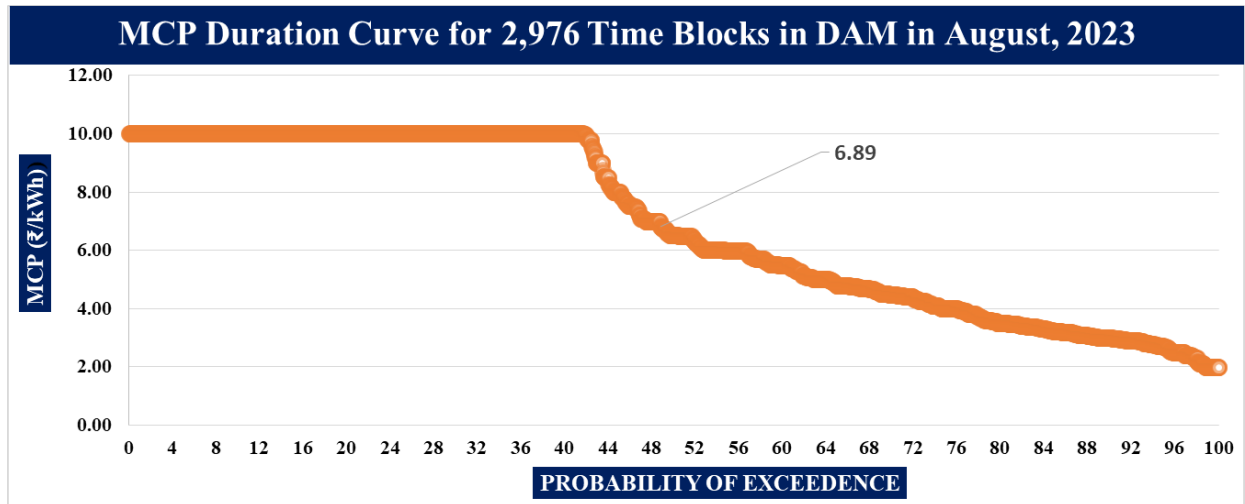


Figure – 4

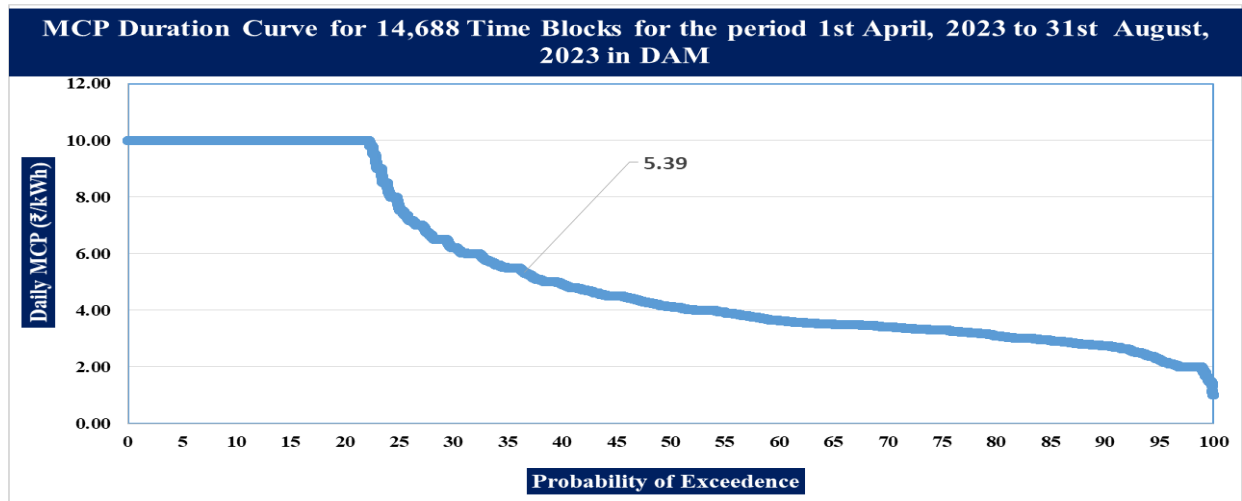


Figure-5

9.8. It can be seen in figure 4 above that in the MCP duration curve of August, 2023, for 49.00 % of the time MCP was above average MCP of the month (i.e. ₹ 6.89/kWh) and almost 51.00 % of the time MCP was below the average MCP of the month. Similarly, it can be seen in the MCP duration curve from 1st April, 2023 to 31st August, 2023 (figure-5), that for 37.00 % of the time the MCP was above the average MCP for the period (i.e. ₹ 5.39/kWh) and for 63.00 % of the time the Daily Avg. MCP was below the average MCP for the period.

9.9. The Purchase Bids and the MCP discovered in each of the 15-minute time block during the month almost followed the same trend [**Annexure V**]. This is also corroborated with the outcome of regression analysis mentioned at **para 7.1 and 7.2 above**.

- 9.10.** In August, 2023, the maximum FSV occurred mostly during the **time period 07-08 Hrs** (on 15 no. of days). Whereas, the maximum MCP occurred mostly during the **time period 00-01 Hrs** (on 24 no. of days). Similarly, the minimum FSV occurred mostly during the **time period 21-23 Hrs** (on 11 no. of days). Whereas, the minimum MCP occurred mostly during the **time period 13-14 Hrs** (on 22 no. of days). **[Annexure VI]**
- 9.11.** In the month of August, 2023, there was no congestion in IEX, PXIL & HPX during August, 2023. Further, in the month of July, 2023, there was no congestion in IEX and no transaction of electricity took place in PXIL & HPX. Further, in the month of August, 2022, there was no congestion in IEX, PXIL and no transaction of electricity took place in HPX.
- 9.12.** In the month of August, 2023, there was **no** real time curtailment in IEX, PXIL & HPX. Further, in the month of July, 2023, there was **no** real time curtailment in IEX and no transaction of electricity took place PXIL & HPX. Further in the month of August, 2022, there was **no** real time curtailment in IEX, PXIL and no transaction of electricity took place in HPX.
- 9.13.** The **top 10 sellers** on the power exchanges in **Day Ahead Market (DAM)** in the month of August, 2023 were **Uttar Pradesh, Delhi, NVVN (SNA) – NEA, Madhya Pradesh, Bihar, Chhattisgarh, Himachal Pradesh, DB Power, Punjab and Jindal Steel**, which constituted **56.84 %** of the market volume. **[Annexure VII].**
- 9.14.** The **top 10 purchasers** on the power exchanges in **Day Ahead Market (DAM)** in the month of August, 2023 were **West Bengal, Andhra Pradesh, Telangana, Gujarat, Maharashtra, Rajasthan, Karnataka, Tamil Nadu, Uttar Pradesh and Kerala**, which constituted **89.25 %** of the market volume. **[Annexure VII]**
- 9.15.** The total volume of electricity purchased by Discoms/Licensees in DAM in the month of August, 2023 was **3,867.96 MU**, which constituted **99.23 %** of total volume of electricity purchased on the power exchanges.
- 9.16.** Similarly, the total volume of electricity sold by Discoms/Licensees in DAM in the month of August, 2023 was **2,478.92 MU**, which constituted **63.59 %** of total volume of electricity sold on the power exchanges.

10. Analysis of movement of prices observed in Real Time Market (RTM) transactions in August, 2023

10.1. Similar to the regression analysis carried out for Day Ahead Market, the regression analysis for Real Time Market was also done. The regression analysis revealed that the significant variable was the Peak Demand. Further, the regression analysis revealed that the elasticity of the Daily Avg. MCP with respect to Peak Demand was **6.43** in the month of August, 2023.

10.2. The Purchase Bids and the MCP discovered in each of the 15-minute time block during the month almost followed the same trend [Annexure IX]. This is also corroborated with the outcome of regression analysis mentioned at **para 8.1 above**.

10.3. The Total Purchase Bid, Total Sell Bid, Daily Avg. MCP and FSV are shown in Figure-6 below:

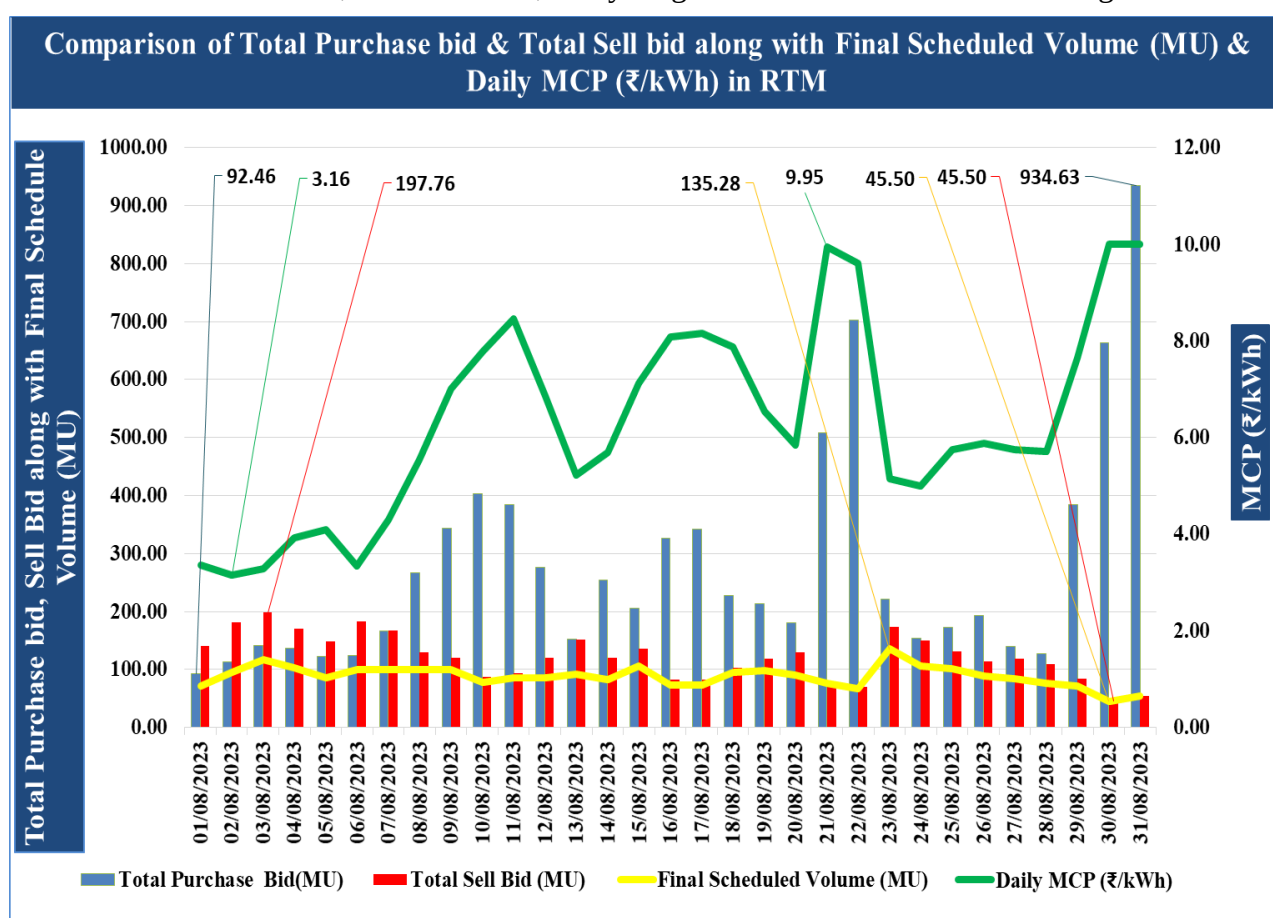
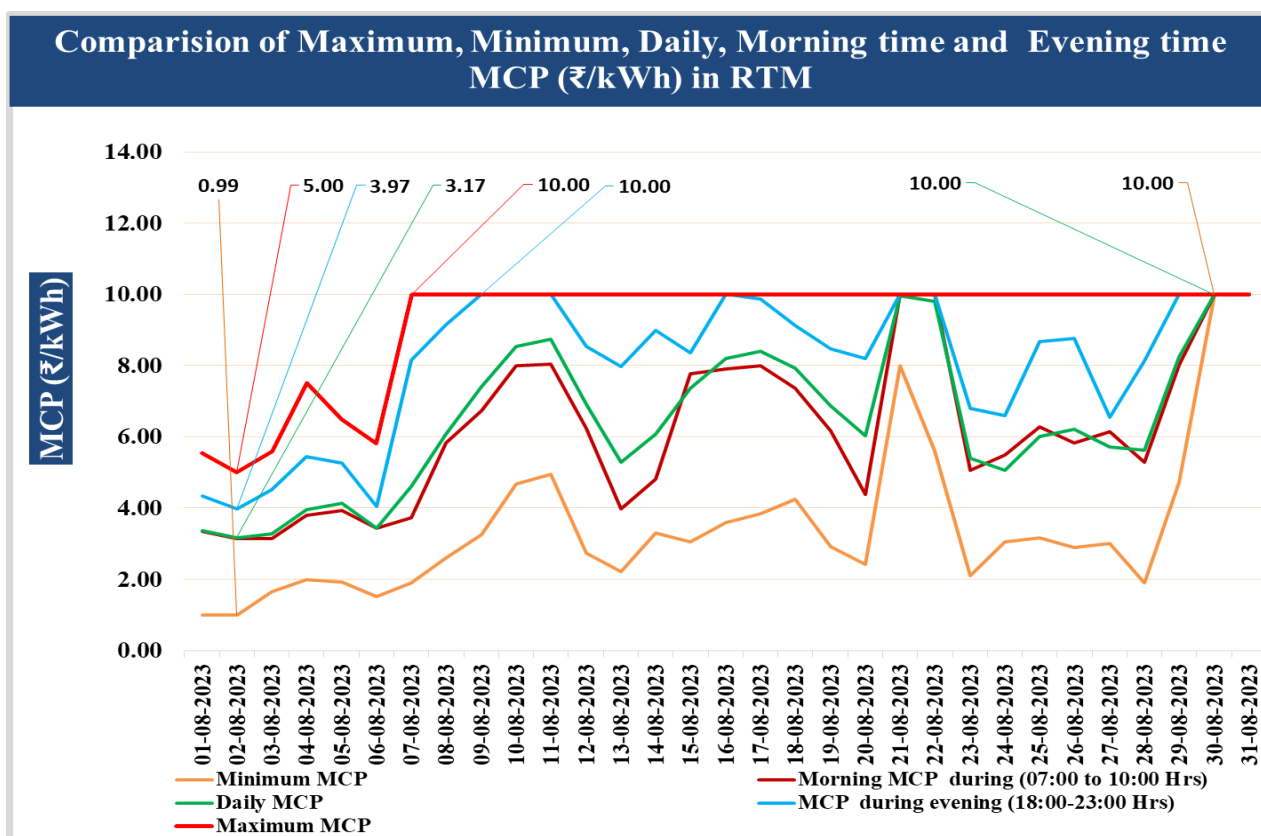
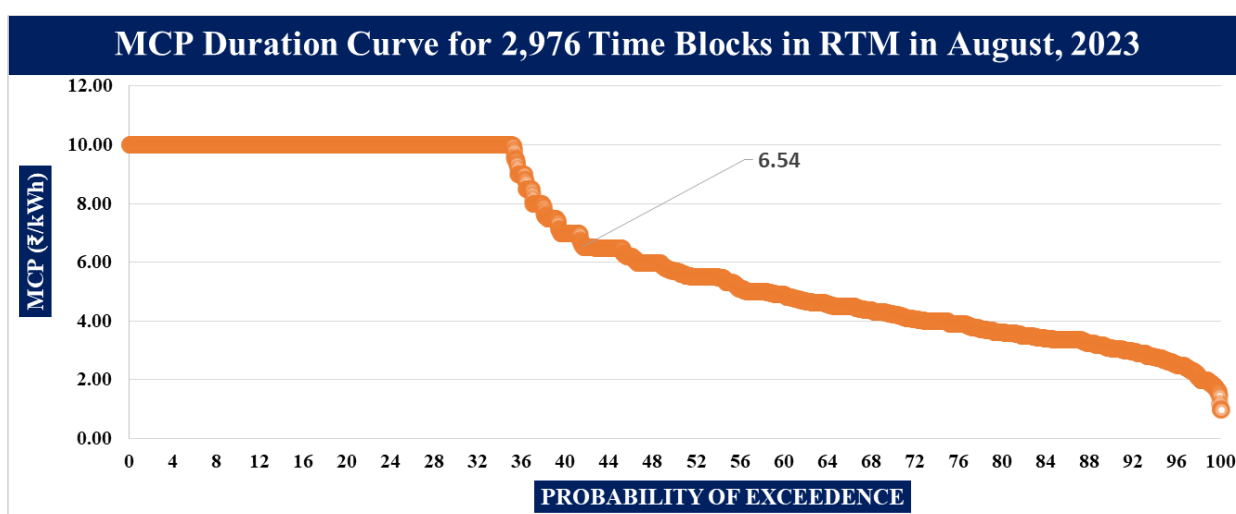


Figure-6

10.4. A comparison of maximum, minimum, daily, evening time MCP is shown in **Figure-7**. The same are also tabulated in **Annexure-VIII**.



10.5. The Market Clearing Price duration curves for time block wise MCP for the month of August, 2023 is shown in **Figure 8**, whereas the day wise MCP duration curve for the period 1st April, 2023 to 31st August, 2023 is shown in **Figure 9**.



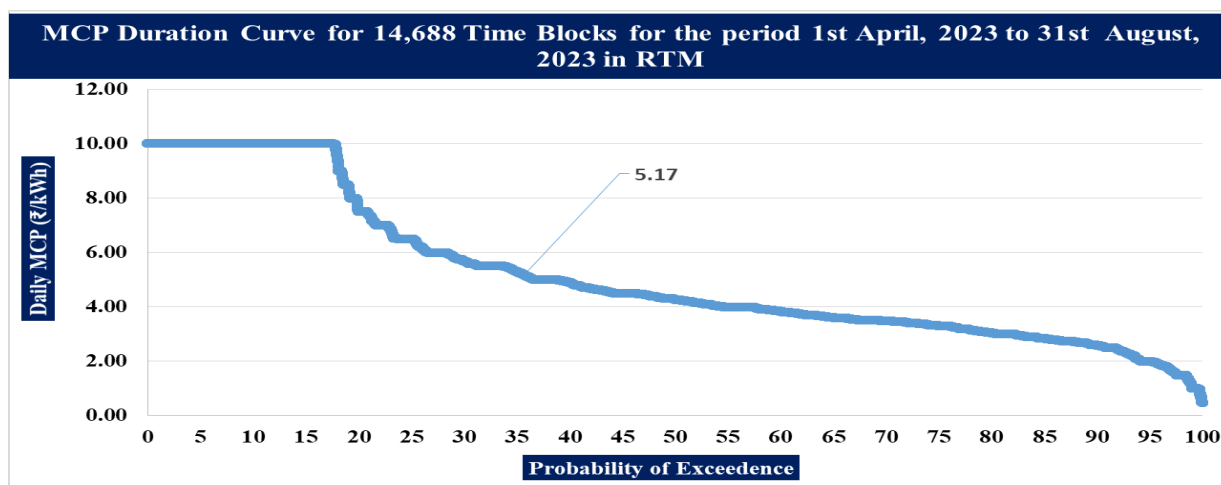


Figure-9

- 10.6.** It can be seen in figure 8 above that in the MCP duration curve of August, 2023, for 42.00 % of the time the MCP was above the average MCP of the month (i.e. ₹ 6.54/kWh) and for 58.00 % of the time the MCP was below the average MCP of the month. Similarly, it can be seen in the cumulative MCP duration curve from 1st April, 2023 to 31st August, 2023 (figure 9) that, for 36.00 % of the time the Daily Avg. MCP was above the average MCP for the period (i.e. ₹ 5.17/kWh) and for 64.00 % of the time the Daily Avg. MCP was below the average MCP for the period.
- 10.7.** In August, 2023, the maximum FSV occurred mostly during the **time period 15-17 Hrs** (on 11 no. of days). Whereas, the maximum MCP also occurred mostly during the **time period 00-01 Hrs** (on 22 no. of days). Similarly, the minimum FSV occurred mostly during the **time period 19-21 Hrs** (on 14 no. of days). Whereas, the minimum MCP occurred mostly during the **time period 13-14 Hrs** (on 14 no. of days).[Annexure X]
- 10.8.** There was **no** real time curtailment in IEX, PXIL and HPX in Real Time Market (RTM) during August, 2023. Further, in July, 2023 **no** real time curtailment occurred in IEX, whereas, no transaction happened in PXIL & HPX. Similarly, in August, 2022, there was no real time curtailment in IEX, PXIL and no transaction happened in HPX.
- 10.9.** In the month of August, 2023 there was congestion of **0.62 MU** in IEX and there was no congestion in PXIL & HPX. Further, in the month of July, 2023, there was congestion of **0.78 MU** in IEX and no transaction happened in PXIL & HPX. Similarly, in the month of August, 2022, there was **0.35 MU** congestion in the transmission system in IEX and there was no congestion in PXIL & no transaction took place in HPX.

10.10. The **top 10 sellers** on the power exchanges in **Real Time Market (RTM)** in the month of August, 2023 were **Madhya Pradesh, Bihar, Odisha, Delhi, Rajasthan, Chhattisgarh, J&K, Himachal Pradesh, Uttar Pradesh** and **Maharashtra**, which constituted **69.88 %** of the market volume. **[Annexure XI]**

10.11. The **top 10 buyers** on the power exchanges in **Telangana, Karnataka, Andhra Pradesh, Kerala, Rajasthan, Maharashtra, West Bengal, Uttar Pradesh, Tamil Nadu** and **Odisha**, which constituted **80.63 %** of the market volume. **[Annexure XI]**

10.12. The total volume of electricity purchased by Discoms/Licensees in RTM in the month of August, 2023 was **2,693.81 MU**, which constituted **98.32 %** of total volume of electricity purchased on the power exchanges.

10.13. Similarly, the total volume of electricity sold by Discoms/Licensees in RTM in the month of August, 2023 was **2,423.12 MU**, which constituted **88.44 %** of total volume of electricity sold on the power exchanges.

-
- Source DAM, GDAM, TAM, GTAM and RTM data: IEX, PXIL and HPX
 - Source Entity wise sale and purchase on PXs data: NLDC
 - Source Total Energy supplied: CEA
 - Source Generation & other data for Regression: NLDC and IEX

Final Scheduled Volume, Average MCP and Real-Time Curtailment in Day Ahead Market (DAM) for the months of April, 2023 to August, 2023 of IEX and PXIL							
Quarter	Months	Final Scheduled Volume (MU)		Market Clearing Price (₹/kWh)		Real Time Curtailment (MU)	
		IEX	PXIL	IEX	PXIL	IEX	PXIL
Quarter -I	April, 2023	4,408.93	0	5.08	0	0	0
	May, 2023	3,999.76	1.56	4.77	6.94	0	1.55
	June, 2023	4,123.34	0.03	5.16	10.00	0	0
Total Quarter -I	April - June , 2023	12,532.03	1.59	5.01	7.00	0	1.55
Quarter -II	July, 2023	3,966.20	0	4.52	0	0	0
	August, 2023	3,881.41	16.34	6.43	9.33	0	0
	September, 2023						
Total Quarter -II	July - September ,	7,847.61	16.34	5.46	9.33	0	0
Total April, 2023 – August, 2023		20,379.64	17.93	5.19	9.12	0	1.55

Annexure-II

Final Scheduled Volume in Term Ahead Market (TAM) for the months of April, 2023 to August, 2023 of IEX, PXIL and HPX (Delivery date basis)					
Quarter	Months	Final Scheduled Volume (MU)			
		IEX	PXIL	HPX	Total
Quarter -I	April, 2023	317.91	111.30	321.83	751.04
	May, 2023	607.72	133.80	198.75	940.27
	June, 2023	322.49	172.80	95.24	590.53
Total Quarter – I	April - June, 2023	1,248.12	417.90	615.82	2,281.84
Quarter -II	July, 2023	287.60	20.40	154.02	462.02
	August, 2023	768.73	287.36	355.21	1,411.30
	September, 2023				
Total Quarter – II	July - September , 2023	1,056.33	307.76	509.23	1,873.32
Total April, 2023 – August, 2023		2,304.45	725.66	1,125.05	4,155.16

Top Five Entities (Buyers and Sellers) in Bilateral transactions in the month of August, 2023

(i) Top five Buyers in Bilateral transactions

Entity Name	Direct		Entity Name	Through Traders	
	(MU)	Percent		(MU)	Percent
Punjab	1241.23	33.47%	Haryana	1220.12	14.21%
Uttar Pradesh	528.16	14.24%	Tamil Nadu	1014.06	11.81%
Andhra Pradesh	386.40	10.42%	Punjab	943.30	10.99%
Haryana	384.34	10.36%	Delhi	862.28	10.04%
Maharashtra	319.80	8.62%	Telangana	704.40	8.20%
Total Volume	2,859.93	77.11%	Total Volume	4,744.17	55.25%
Total Volume in Bilateral	3,708.96		Total Volume in Bilateral	8,586.06	

(ii) Top five Sellers in Bilateral transactions

Entity Name	Direct		Entity Name	Through Traders	
	(MU)	Percent		(MU)	Percent
MP	614.84	16.58%	Himachal Pradesh	913.52	10.64%
Karnataka	545.90	14.72%	TEESTA HEP	721.45	8.40%
SIMHAPURI	436.76	11.78%	JINDAL STAGE-II	502.85	5.86%
Rajasthan	399.88	10.78%	JINDAL POWER	437.94	5.10%
Maharashtra	182.82	4.93%	Gujarat	391.43	4.56%
Total Volume	2,180.21	58.78%	Total Volume	2,967.20	34.56%
Total Volume in Bilateral	3,708.96		Total Volume in Bilateral	8,586.06	

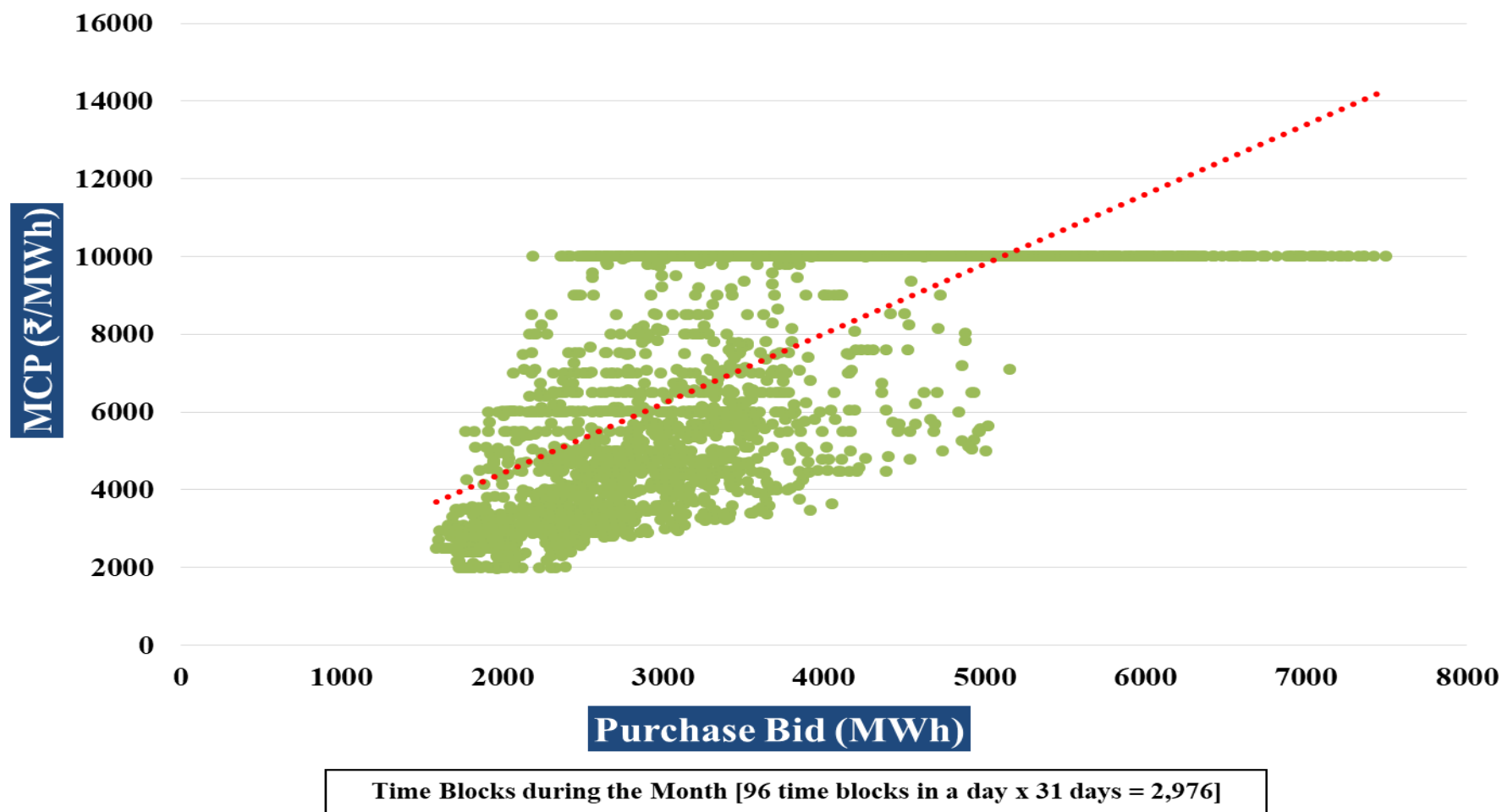
Evening, Day, Night, Morning, Maximum, Minimum, Average MCP (₹/kWh) and Final Scheduled Volume (MU) in DAM

Date	Morning MCP (07:00-10:00)	Day MCP (11:00-17:00)	Evening MCP (18:00- 23:00)	Night MCP (01:00- 06:00, 23:00-24:00)	Maximum MCP	Minimum MCP	Average MCP	Final Scheduled Volume (MU)
01-08-2023	3.42	3.08	8.20	5.54	10.00	2.50	5.14	145.05
02-08-2023	3.16	2.43	5.78	3.59	8.50	2.08	3.73	120.40
03-08-2023	3.04	2.30	5.00	3.29	6.03	2.00	3.39	107.47
04-08-2023	3.32	2.76	6.11	3.69	9.95	2.19	3.96	136.69
05-08-2023	3.74	2.83	6.21	4.48	10.00	2.67	4.31	153.66
06-08-2023	3.25	2.01	4.26	4.02	5.51	1.98	3.37	123.90
07-08-2023	3.93	2.62	8.19	4.84	10.00	2.15	4.88	142.37
08-08-2023	3.90	2.69	8.24	5.47	10.00	2.38	5.09	140.95
09-08-2023	5.48	3.37	9.12	7.65	10.00	3.07	6.40	143.56
10-08-2023	6.82	4.29	9.53	9.15	10.00	3.58	7.44	142.53
11-08-2023	7.27	5.07	9.96	9.64	10.00	3.91	7.99	145.61
12-08-2023	7.70	4.41	9.26	10.00	10.00	3.97	7.80	121.57
13-08-2023	4.71	3.23	8.47	6.98	10.00	2.97	5.88	129.88
14-08-2023	5.60	3.79	8.78	6.76	10.00	3.37	6.21	145.46
15-08-2023	4.38	2.69	7.86	6.46	10.00	2.29	5.36	143.90
16-08-2023	7.57	5.63	9.40	8.51	10.00	4.77	7.73	139.49
17-08-2023	8.22	7.48	9.97	9.93	10.00	5.00	8.94	126.13
18-08-2023	8.00	8.50	10.00	10.00	10.00	5.62	9.23	120.21
19-08-2023	8.02	7.38	10.00	10.00	10.00	5.14	8.91	124.46
20-08-2023	6.26	4.14	8.29	8.84	10.00	3.42	6.90	116.24
21-08-2023	8.05	5.68	9.33	9.26	10.00	4.50	8.03	117.68
22-08-2023	10.00	7.82	10.00	10.00	10.00	6.00	9.36	112.01
23-08-2023	9.79	7.81	10.00	10.00	10.00	5.72	9.33	76.23
24-08-2023	7.88	5.02	9.85	10.00	10.00	3.93	8.16	110.35
25-08-2023	8.59	5.61	10.00	9.38	10.00	4.00	8.31	119.50
26-08-2023	8.17	5.25	9.84	8.84	10.00	3.93	7.93	122.63
27-08-2023	6.15	3.13	8.07	8.18	10.00	2.77	6.34	124.19
28-08-2023	8.01	5.60	10.00	8.55	10.00	4.10	7.96	120.28
29-08-2023	8.22	5.61	9.63	8.61	10.00	4.16	7.92	105.87
30-08-2023	8.58	6.19	9.96	10.00	10.00	4.71	8.64	111.71
31-08-2023	8.79	8.31	10.00	9.20	10.00	5.00	9.07	91.39
Maximum	10.00	8.50	10.00	10.00	10.00	6.00	9.36	153.66
Minimum	3.04	2.01	4.26	3.29	5.51	1.98	3.37	76.23
Average	6.45	4.73	8.69	7.77	9.68	3.67	6.89	125.21

MCP: Market Clearing Price (₹/kWh)

FSV: Final Scheduled Volume (MU)

Comparison of MCP w.r.t. Purchase Bid for 2,976 Time Blocks during the month of August, 2023 in DAM



Annexure-VI**Maximum Final Schedule Volume (FSV), Minimum FSV, Maximum Market Clearing Price (MCP) and Minimum MCP in DAM**

Date	Max. FSV (MU)		Max. MCP (₹/kWh)		Min FSV (MU)		Min. MCP (₹/kWh)	
	Time Block	Value	Time Block	Value	Time Block	Value	Time Block	Value
01-08-2023	07:00 - 07:15	2.12	00:00 - 00:15	10.00	03:45 - 04:00	0.94	13:00 - 13:15	2.50
02-08-2023	07:00 - 07:15	1.70	22:15 - 22:30	8.50	01:45 - 02:00	0.94	13:00 - 13:15	2.08
03-08-2023	07:00 - 07:15	1.82	22:15 - 22:30	6.03	02:15 - 02:30	0.74	13:15 - 13:30	2.00
04-08-2023	07:15 - 07:30	2.26	21:15 - 21:30	9.95	04:00 - 04:15	0.85	13:00 - 13:15	2.19
05-08-2023	07:00 - 07:15	2.66	21:30 - 21:45	10.00	03:30 - 03:45	1.19	13:15 - 13:30	2.67
06-08-2023	07:00 - 07:15	2.33	21:45 - 22:00	5.51	17:30 - 17:45	0.87	12:00 - 12:15	1.98
07-08-2023	07:15 - 07:30	2.60	19:00 - 19:15	10.00	00:45 - 01:00	1.12	13:00 - 13:15	2.15
08-08-2023	07:00 - 07:15	2.74	18:45 - 19:00	10.00	21:00 - 21:15	0.97	13:15 - 13:30	2.38
09-08-2023	07:30 - 07:45	2.66	00:00 - 00:15	10.00	20:00 - 20:15	0.78	13:30 - 13:45	3.07
10-08-2023	07:30 - 07:45	2.59	00:00 - 00:15	10.00	20:00 - 20:15	0.78	13:15 - 13:30	3.58
11-08-2023	08:15 - 08:30	2.60	00:00 - 00:15	10.00	20:00 - 20:15	0.67	13:15 - 13:30	3.91
12-08-2023	08:00 - 08:15	2.06	00:00 - 00:15	10.00	22:15 - 22:30	0.65	10:45 - 11:00	3.97
13-08-2023	07:15 - 07:30	2.16	00:00 - 00:15	10.00	00:00 - 00:15	0.81	09:00 - 09:15	2.97
14-08-2023	07:00 - 07:15	2.59	00:00 - 00:15	10.00	23:00 - 23:15	0.65	09:00 - 09:15	3.37
15-08-2023	07:00 - 07:15	2.45	00:00 - 00:15	10.00	00:45 - 01:00	0.95	11:15 - 11:30	2.29
16-08-2023	09:00 - 09:15	2.45	00:00 - 00:15	10.00	22:15 - 22:30	0.60	13:15 - 13:30	4.77
17-08-2023	08:00 - 08:15	2.09	00:00 - 00:15	10.00	22:15 - 22:30	0.55	08:45 - 09:00	5.00
18-08-2023	09:00 - 09:15	2.00	00:00 - 00:15	10.00	20:00 - 20:15	0.50	08:45 - 09:00	5.62
19-08-2023	09:15 - 09:30	2.26	00:00 - 00:15	10.00	20:00 - 20:15	0.52	13:15 - 13:30	5.14
20-08-2023	06:00 - 06:15	1.95	00:00 - 00:15	10.00	22:00 - 22:15	0.59	13:15 - 13:30	3.42
21-08-2023	09:15 - 09:30	1.98	00:00 - 00:15	10.00	21:15 - 21:30	0.52	13:15 - 13:30	4.50
22-08-2023	13:15 - 13:30	1.84	00:00 - 00:15	10.00	20:00 - 20:15	0.53	13:00 - 13:15	6.00
23-08-2023	14:15 - 14:30	1.28	00:00 - 00:15	10.00	20:00 - 20:15	0.42	10:30 - 10:45	5.72
24-08-2023	10:30 - 10:45	1.66	00:00 - 00:15	10.00	21:45 - 22:00	0.58	13:15 - 13:30	3.93
25-08-2023	09:15 - 09:30	1.98	00:00 - 00:15	10.00	22:45 - 23:00	0.73	13:15 - 13:30	4.00
26-08-2023	09:45 - 10:00	1.93	00:00 - 00:15	10.00	23:15 - 23:30	0.73	13:15 - 13:30	3.93
27-08-2023	07:15 - 07:30	2.41	00:00 - 00:15	10.00	23:00 - 23:15	0.76	13:15 - 13:30	2.77
28-08-2023	09:00 - 09:15	2.24	00:00 - 00:15	10.00	21:30 - 21:45	0.60	13:15 - 13:30	4.10
29-08-2023	09:15 - 09:30	1.72	00:00 - 00:15	10.00	19:30 - 19:45	0.62	13:00 - 13:15	4.16
30-08-2023	07:45 - 08:00	1.90	00:00 - 00:15	10.00	21:45 - 22:00	0.60	13:30 - 13:45	4.71
31-08-2023	08:00 - 08:15	1.46	00:00 - 00:15	10.00	21:00 - 21:15	0.45	05:00 - 05:15	5.00

MCP: Market Clearing Price (₹/kWh)**FSV: Final Scheduled Volume (MU)**

Sellers and Buyers in Day Ahead Market (DAM) in the month of August, 2023						
S. No.	Entity Name	Sell		Entity Name	Purchase	
		(MU)	Percent (%)		(MU)	Percent (%)
1	Uttar Pradesh	447.11	11.47%	West Bengal	729.58	18.72%
2	Delhi	312.37	8.01%	Andhra Pradesh	491.51	12.61%
3	NVVN (SNA) -	269.61	6.92%	Telangana	485.91	12.47%
4	Madhya Pradesh	262.41	6.73%	Gujarat	452.57	11.61%
5	Bihar	224.13	5.75%	Maharashtra	370.76	9.51%
6	Chhattisgarh	212.99	5.46%	Rajasthan	302.72	7.77%
7	Himachal Pradesh	130.98	3.36%	Karnataka	220.64	5.66%
8	DB Power	122.00	3.13%	Tamil Nadu	172.84	4.43%
9	Punjab	117.72	3.02%	Uttar Pradesh	155.05	3.98%
10	Jindal Steel	116.46	2.99%	Kerala	97.51	2.50%
11	MB Power	111.67	2.86%	Haryana	66.77	1.71%
12	Maharashtra	108.58	2.79%	Assam	53.41	1.37%
13	ADANI WIND	80.55	2.07%	Daman & Diu - Dadra	50.08	1.28%
14	Tamil Nadu	71.92	1.84%	Madhya Pradesh	49.37	1.27%
15	Haryana	62.59	1.61%	Odisha	38.57	0.99%
16	Karnataka	62.48	1.60%	Chhattisgarh	25.80	0.66%
17	Gujarat	62.11	1.59%	Delhi	22.53	0.58%
18	Karcham Wangtoo	61.17	1.57%	Punjab	19.78	0.51%
19	Chandigarh	54.71	1.40%	Jharkhand	18.59	0.48%
20	Telangana	48.06	1.23%	ArcelorMittal Nippon	16.24	0.42%
21	Jaypee Nigrie	41.17	1.06%	Meghalaya	13.95	0.36%
22	Sainj HEP	40.38	1.04%	Railways	12.74	0.33%
23	Sembcorp Gayatri	39.35	1.01%	DVC	8.98	0.23%
24	Andhra Pradesh	36.17	0.93%	Uttarakhand	7.56	0.19%
25	Pondicherry	35.49	0.91%	Bihar	5.38	0.14%
26	Sikkim Urja	35.11	0.90%	Himachal Pradesh	2.84	0.07%
27	Jindal Power Ltd.	34.95	0.90%	Goa WR	2.30	0.06%
28	JITPL	34.06	0.87%	Goa SR	1.97	0.05%
29	AD Hydro	33.52	0.86%	BHARAT	0.96	0.02%
30	Raigarh Energy	30.63	0.79%	Tripura	0.92	0.02%
31	ACBIL	30.44	0.78%	NEA-NR	0.11	0.00%
32	Jindal Power	28.44	0.73%	Chandigarh	0.06	0.00%
33	Mahan Energy	25.64	0.66%			
34	Odisha	25.24	0.65%			
35	Shree Cement	23.63	0.61%			
36	Jharkhand	23.29	0.60%			
37	Uttarakhand	23.23	0.60%			
38	Rajasthan	22.66	0.58%			
39	Meghalaya	21.56	0.55%			
40	SKS Power	21.15	0.54%			
41	Assam	21.05	0.54%			
42	West Bengal	18.65	0.48%			
43	Arunachal Pradesh	18.45	0.47%			
44	DVC	16.03	0.41%			
45	Renew Surya Ravi	15.30	0.39%			
46	Sembcorp Energy	15.20	0.39%			
47	Adani Power	15.16	0.39%			
48	GMR Warora	14.33	0.37%			
49	Rihand-I	12.98	0.33%			
50	Rihand-III	12.58	0.32%			

51	J&K	12.37	0.32%			
52	Mizoram	12.11	0.31%			
53	Chuzachen	11.98	0.31%			
54	Adani Green	11.61	0.30%			
55	Simhapuri Energy	10.84	0.28%			
56	Rihand-II	10.19	0.26%			
57	IL&FS	10.03	0.26%			
58	Palatana	8.55	0.22%			
59	Maruti Clean Coal	8.54	0.22%			
60	Jhabua Power	8.38	0.21%			
61	RKM Power	7.61	0.20%			
62	NTPC Kudgi	7.01	0.18%			
63	Nagaland	6.92	0.18%			
64	Ramagundam	6.71	0.17%			
65	MASAYA SOLAR	6.67	0.17%			
66	Lanco Budhil	6.27	0.16%			
67	Bongaigaon	6.08	0.16%			
68	Dikchu	4.68	0.12%			
69	DHARIWAL STU	4.22	0.11%			
70	Kameng HEP	4.10	0.11%			
71	Singoli Bhagwati	3.75	0.10%			
72	Goa WR	3.68	0.09%			
73	Ostro Kannada	2.73	0.07%			
74	Kerala	2.33	0.06%			
75	Kahalgaon	1.86	0.05%			
76	NTPC SOLAPUR	1.76	0.05%			
77	Dadri Stg-2	1.45	0.04%			
78	Manipur	1.14	0.03%			
79	IGSTPS JHAJJAR	0.97	0.02%			
80	Tanda Stg-2	0.96	0.02%			
81	GMR Kamalanga	0.96	0.02%			
82	Unchahar-IV	0.92	0.02%			
83	Unchahar-II	0.91	0.02%			
84	DHARIWAL STU	0.79	0.02%			
85	Dhariwal ISTS	0.69	0.02%			
86	Singrauli	0.47	0.01%			
87	Sikkim	0.36	0.01%			
88	Unchahar-III	0.34	0.01%			
89	Adhunik Power	0.33	0.01%			
90	NTPC Kawas Solar	0.28	0.01%			
91	Unchahar-I	0.27	0.01%			
92	WIND FIVE	0.20	0.01%			
93	Dadri TPS	0.14	0.00%			
94	SBSR Power	0.12	0.00%			
95	Farakka	0.07	0.00%			
96	Barh STPS Stg - I	0.06	0.00%			
97	Kahalgaon-II	0.04	0.00%			
98	Vindhyachal stg-1	0.04	0.00%			
99	Mouda Stg-2	0.04	0.00%			
100	NTPC	0.02	0.00%			
101	Ramagundam Stg-	0.01	0.00%			
Total Volume of top 10		2,215.77	56.84%	Total Volume of top 10	3,479.08	89.25%
Total Volume in PXs		3,898.01		Total Volume in PXs	3,898.01	

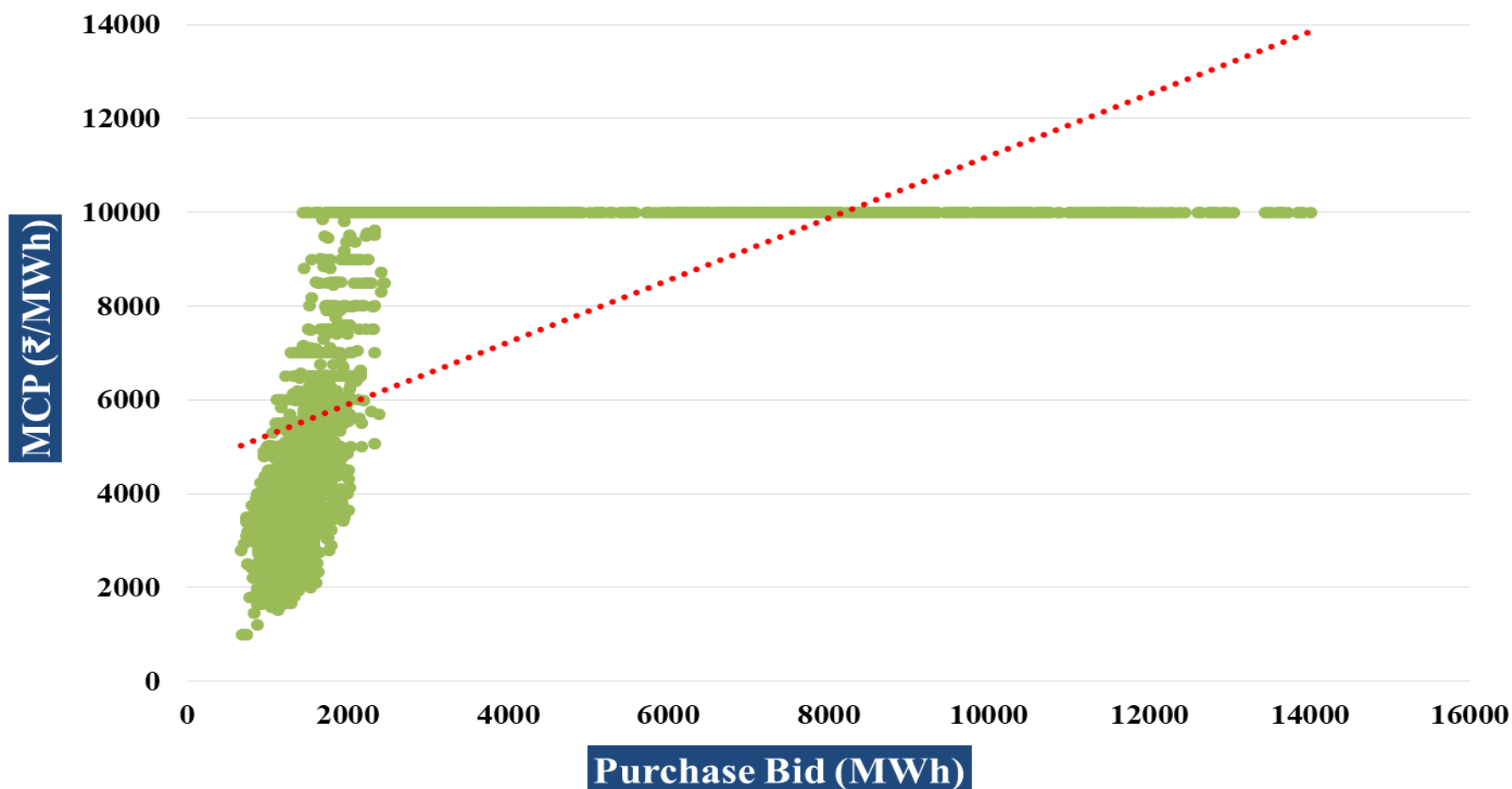
Annexure-VIII**Evening, Day, Night, Morning, Maximum, Minimum, Average MCP (₹/kWh) and Final Scheduled Volume (MU) in RTM**

Date	Morning MCP (07:00-10:00)	Day MCP (11:00-17:00)	Evening MCP (18:00- 23:00)	Night MCP (01:00- 06:00, 23:00-24:00)	Maximum MCP	Minimum MCP	Average MCP	Final Scheduled Volume (MU)
01-08-2023	3.33	2.32	4.34	3.61	5.55	1.00	3.37	72.17
02-08-2023	3.14	2.26	3.97	3.43	5.00	0.99	3.17	95.31
03-08-2023	3.14	2.68	4.51	2.90	5.60	1.66	3.28	117.15
04-08-2023	3.79	3.00	5.44	3.76	7.50	2.00	3.96	102.93
05-08-2023	3.93	2.98	5.26	4.43	6.50	1.92	4.13	85.89
06-08-2023	3.43	2.04	4.05	4.29	5.82	1.52	3.43	99.20
07-08-2023	3.74	2.75	8.15	3.97	10.00	1.90	4.62	99.07
08-08-2023	5.82	4.20	9.15	5.50	10.00	2.60	6.09	99.30
09-08-2023	6.73	6.06	10.00	6.91	10.00	3.25	7.40	99.14
10-08-2023	7.99	6.96	10.00	9.18	10.00	4.68	8.54	77.77
11-08-2023	8.04	7.68	10.00	9.13	10.00	4.95	8.74	85.73
12-08-2023	6.23	4.17	8.54	8.64	10.00	2.73	6.91	85.97
13-08-2023	3.97	3.52	7.98	5.51	10.00	2.22	5.29	92.45
14-08-2023	4.81	5.22	8.99	5.12	10.00	3.29	6.06	82.92
15-08-2023	7.78	4.70	8.36	8.93	10.00	3.06	7.36	105.95
16-08-2023	7.90	8.65	10.00	6.35	10.00	3.60	8.19	72.84
17-08-2023	7.99	5.74	9.88	10.00	10.00	3.84	8.39	73.66
18-08-2023	7.36	6.84	9.12	8.34	10.00	4.25	7.93	94.77
19-08-2023	6.15	3.89	8.47	8.85	10.00	2.92	6.86	98.85
20-08-2023	4.39	4.13	8.20	7.02	10.00	2.42	6.04	90.47
21-08-2023	10.00	10.00	10.00	9.89	10.00	8.00	9.97	76.13
22-08-2023	10.00	9.28	10.00	10.00	10.00	5.60	9.79	67.18
23-08-2023	5.05	3.39	6.80	6.40	10.00	2.10	5.40	135.28
24-08-2023	5.50	3.62	6.60	4.95	10.00	3.06	5.06	105.32
25-08-2023	6.27	4.13	8.67	5.42	10.00	3.16	6.00	101.95
26-08-2023	5.83	4.08	8.77	6.40	10.00	2.90	6.22	88.08
27-08-2023	6.15	3.93	6.56	6.49	10.00	3.00	5.70	84.61
28-08-2023	5.28	3.70	8.13	5.58	10.00	1.90	5.62	76.71
29-08-2023	8.01	7.42	10.00	7.71	10.00	4.73	8.25	71.89
30-08-2023	10.00	10.00	10.00	10.00	10.00	10.00	10.00	45.50
31-08-2023	10.00	10.00	10.00	10.00	10.00	10.00	10.00	53.98
Maximum	10.00	10.00	10.00	10.00	10.00	10.00	10.00	135.28
Minimum	3.14	2.04	3.97	2.90	5.00	0.99	3.17	45.50
Average	6.19	5.14	8.06	6.73	9.22	3.52	6.51	88.33

MCP: Market Clearing Price (₹/kWh)

FSV: Final Scheduled Volume (MU)

Comparison of MCP w.r.t. Purchase Bid for 2,976 Time Blocks during the month of August, 2023 in RTM



Maximum Final Schedule Volume (FSV), Minimum FSV, Maximum Market Clearing Price (MCP) and Minimum MCP in RTM

Date	Max. FSV (MU)		Max. MCP (₹/kWh)		Min FSV (MU)		Min. MCP (₹/kWh)	
	Time Block	Value	Time Block	Value	Time Block	Value	Time Block	Value
01-08-2023	22:30 - 22:45	0.99	21:30 - 21:45	5.55	05:00 - 05:15	0.46	13:00 - 13:15	1.00
02-08-2023	09:30 - 09:45	1.20	00:00 - 00:15	5.00	01:30 - 01:45	0.73	13:15 - 13:30	0.99
03-08-2023	10:45 - 11:00	1.52	21:15 - 21:30	5.60	00:30 - 00:45	0.89	13:15 - 13:30	1.66
04-08-2023	11:30 - 11:45	1.28	21:15 - 21:30	7.50	18:15 - 18:30	0.83	13:00 - 13:15	2.00
05-08-2023	15:30 - 15:45	1.18	21:15 - 21:30	6.50	07:45 - 08:00	0.67	13:15 - 13:30	1.92
06-08-2023	17:30 - 17:45	1.41	00:00 - 00:15	5.82	21:00 - 21:15	0.76	12:30 - 12:45	1.52
07-08-2023	15:00 - 15:15	1.50	19:00 - 19:15	10.00	19:30 - 19:45	0.63	13:00 - 13:15	1.90
08-08-2023	17:00 - 17:15	1.70	06:45 - 07:00	10.00	20:15 - 20:30	0.35	13:00 - 13:15	2.60
09-08-2023	15:00 - 15:15	1.85	00:00 - 00:15	10.00	19:30 - 19:45	0.15	13:00 - 13:15	3.25
10-08-2023	11:30 - 11:45	1.52	00:00 - 00:15	10.00	19:00 - 19:15	0.16	13:00 - 13:15	4.68
11-08-2023	13:00 - 13:15	1.55	00:00 - 00:15	10.00	19:15 - 19:30	0.24	10:00 - 10:15	4.95
12-08-2023	07:15 - 07:30	1.64	00:00 - 00:15	10.00	20:15 - 20:30	0.34	09:00 - 09:15	2.73
13-08-2023	05:45 - 06:00	1.26	00:00 - 00:15	10.00	01:15 - 01:30	0.58	08:30 - 08:45	2.22
14-08-2023	16:00 - 16:15	1.43	18:30 - 18:45	10.00	19:15 - 19:30	0.21	05:00 - 05:15	3.29
15-08-2023	15:30 - 15:45	1.56	00:00 - 00:15	10.00	00:15 - 00:30	0.73	11:30 - 11:45	3.06
16-08-2023	15:15 - 15:30	1.37	00:00 - 00:15	10.00	21:00 - 21:15	0.19	02:15 - 02:30	3.60
17-08-2023	15:00 - 15:15	1.24	00:00 - 00:15	10.00	01:00 - 01:15	0.31	13:15 - 13:30	3.84
18-08-2023	16:00 - 16:15	1.36	00:00 - 00:15	10.00	19:30 - 19:45	0.60	04:00 - 04:15	4.25
19-08-2023	16:30 - 16:45	1.39	00:00 - 00:15	10.00	21:15 - 21:30	0.51	13:00 - 13:15	2.92
20-08-2023	16:15 - 16:30	1.26	00:00 - 00:15	10.00	19:15 - 19:30	0.56	10:30 - 10:45	2.42
21-08-2023	13:00 - 13:15	1.49	00:00 - 00:15	10.00	19:15 - 19:30	0.23	04:00 - 04:15	8.00
22-08-2023	12:30 - 12:45	1.48	00:00 - 00:15	10.00	20:00 - 20:15	0.19	13:00 - 13:15	5.60
23-08-2023	07:00 - 07:15	1.85	00:00 - 00:15	10.00	00:15 - 00:30	0.73	13:00 - 13:15	2.10
24-08-2023	16:30 - 16:45	1.54	19:15 - 19:30	10.00	09:15 - 09:30	0.68	12:45 - 13:00	3.06
25-08-2023	07:30 - 07:45	1.49	06:30 - 06:45	10.00	19:45 - 20:00	0.54	03:45 - 04:00	3.16
26-08-2023	07:00 - 07:15	1.31	00:00 - 00:15	10.00	20:15 - 20:30	0.35	13:00 - 13:15	2.90
27-08-2023	23:45 - 24:00	1.24	00:00 - 00:15	10.00	09:00 - 09:15	0.52	11:00 - 11:15	3.00
28-08-2023	00:00 - 00:15	1.15	00:00 - 00:15	10.00	08:45 - 09:00	0.51	10:45 - 11:00	1.90
29-08-2023	11:00 - 11:15	1.35	00:00 - 00:15	10.00	19:15 - 19:30	0.21	04:00 - 04:15	4.73
30-08-2023	13:15 - 13:30	0.92	00:00 - 00:15	10.00	00:45 - 01:00	0.21	00:00 - 00:15	10.00
31-08-2023	13:00 - 13:15	1.09	00:00 - 00:15	10.00	23:15 - 23:30	0.26	00:00 - 00:15	10.00

MCP: Market Clearing Price (₹/kWh)

FSV: Final Scheduled Volume (MU)

Sellers and Buyers in Real Time Market (RTM) in the month of August, 2023						
S. No.	Entity Name	Sell		Entity Name	Purchase	
		(MU)	Percent (%)		(MU)	Percent (%)
1	Madhya Pradesh	812.85	29.67%	Telangana	571.65	20.86%
2	Bihar	239.38	8.74%	Karnataka	290.09	10.59%
3	Odisha	135.09	4.93%	Andhra Pradesh	263.14	9.60%
4	Delhi	124.40	4.54%	Kerala	236.70	8.64%
5	Rajasthan	118.52	4.33%	Rajasthan	173.51	6.33%
6	Chhattisgarh	116.46	4.25%	Maharashtra	173.50	6.33%
7	J&K	97.05	3.54%	West Bengal	153.09	5.59%
8	Himachal	95.45	3.48%	Uttar Pradesh	152.30	5.56%
9	Uttar Pradesh	94.97	3.47%	Tamil Nadu	105.99	3.87%
10	Maharashtra	80.42	2.94%	Odisha	89.14	3.25%
11	West Bengal	66.80	2.44%	Haryana	87.63	3.20%
12	Andhra Pradesh	54.10	1.97%	Punjab	82.37	3.01%
13	Punjab	48.70	1.78%	Gujarat	73.02	2.67%
14	Tamil Nadu	46.43	1.69%	DVC	40.07	1.46%
15	Jharkhand	43.63	1.59%	Delhi	33.93	1.24%
16	Assam	34.65	1.26%	Assam	31.92	1.16%
17	Gujarat	30.25	1.10%	Jharkhand	26.08	0.95%
18	Karnataka	23.67	0.86%	Chhattisgarh	21.67	0.79%
19	Telangana	23.39	0.85%	Uttarakhand	19.72	0.72%
20	Uttarakhand	23.02	0.84%	Daman & Diu - Dadra	18.19	0.66%
21	Manipur	22.34	0.82%	ArcelorMittal Nippon	17.41	0.64%
22	Haryana	22.32	0.81%	Bihar	15.04	0.55%
23	MB Power	18.86	0.69%	Madhya Pradesh	14.32	0.52%
24	Nabinagar Power	16.46	0.60%	BHARAT	10.91	0.40%
25	Tripura	16.36	0.60%	Railways	9.15	0.33%
26	Sembcorp	12.42	0.45%	Himachal Pradesh	8.06	0.29%
27	Pondicherry	11.40	0.42%	Meghalaya	4.37	0.16%
28	Simhapuri	11.39	0.42%	Jindal Power	3.11	0.11%
29	RKM Power	10.84	0.40%	Arunachal Pradesh	2.95	0.11%
30	TRN Energy	10.81	0.39%	Tripura	1.96	0.07%
31	Mahan Energy	9.57	0.35%	Jindal Steel	1.85	0.07%
32	DVC	9.18	0.34%	Goa SR	1.16	0.04%
33	Daman & Diu -	9.13	0.33%	Manipur	1.01	0.04%
34	Rihand-II	8.77	0.32%	Sikkim	0.82	0.03%
35	Palatana	8.71	0.32%	SKS Power	0.75	0.03%
36	ACBIL	8.49	0.31%	Saini HEP	0.60	0.02%
37	Dadri Stg-2	8.38	0.31%	Gandhar	0.56	0.02%
38	NTPC	7.63	0.28%	Ratnagiri Gas & Power	0.49	0.02%
39	Jindal Power	7.40	0.27%	Kawas	0.32	0.01%
40	IGSTPS	7.33	0.27%	Singoli Bhagwati	0.29	0.01%
41	Bongaigaon	6.44	0.24%	Raigarh Energy Ltd.	0.29	0.01%
42	Goa WR	6.26	0.23%	Goa WR	0.24	0.01%
43	Sembcorp	6.20	0.23%	Jhabua Power	0.18	0.01%
44	Sasan UMPP	6.14	0.22%	Chandigarh	0.15	0.01%
45	Arunachal	6.06	0.22%	Maruti Clean Coal	0.06	0.00%

46	Khargone STPP	5.67	0.21%	ACBIL	0.04	0.00%
47	AD Hydro	5.57	0.20%	Pondicherry	0.03	0.00%
48	Shree Cement	5.49	0.20%	Jindal Power Ltd. Stg-II	0.01	0.00%
49	Kahalgaoon-II	5.19	0.19%			
50	Singrauli	4.83	0.18%			
51	Barh Stg-2	4.65	0.17%			
52	Jhabua Power	4.54	0.17%			
53	Dadri TPS	4.41	0.16%			
54	Tanda Stg-2	4.33	0.16%			
55	Singoli Bhagwati	4.33	0.16%			
56	Barh STPS Stg -	4.21	0.15%			
57	NTPC Kudgi	4.10	0.15%			
58	Rihand-III	4.05	0.15%			
59	NTPC Sholapur	4.03	0.15%			
60	Jindal Power	4.02	0.15%			
61	Rihand-I	3.96	0.14%			
62	Mouda Stg-2	3.81	0.14%			
63	Sikkim	3.78	0.14%			
64	Tashiding HEP	3.75	0.14%			
65	Unchahar-IV	3.65	0.13%			
66	SKS Power	3.33	0.12%			
67	IL&FS	3.32	0.12%			
68	Ostro Kannada	2.95	0.11%			
69	Nagaland	2.94	0.11%			
70	The Tata Power	2.92	0.11%			
71	Jindal Steel	2.68	0.10%			
72	Kameng HEP	2.58	0.09%			
73	Maruti Clean	2.54	0.09%			
74	Kerala	2.53	0.09%			
75	Farakka	2.43	0.09%			
76	Kahalgaoon	2.30	0.08%			
77	Unchahar-II	2.23	0.08%			
78	JITPL	2.14	0.08%			
79	Adani Power	2.03	0.07%			
80	Ramagundam	1.87	0.07%			
81	Unchahar-I	1.87	0.07%			
82	Mouda Stg-1	1.66	0.06%			
83	Adhunik Power	1.62	0.06%			
84	Sorang HEP,	1.48	0.05%			
85	GMR Warora	1.44	0.05%			
86	Unchahar-III	1.39	0.05%			
87	NTPL	1.38	0.05%			
88	Simhadri Stg-2	1.34	0.05%			
89	DB Power	1.32	0.05%			
90	Karcham	1.28	0.05%			
91	MASAYA	1.27	0.05%			
92	Raigarh Energy	1.26	0.05%			
93	Neyveli New	1.22	0.04%			
94	Vindhyachal stg-	1.07	0.04%			

95	Vindhyachal stg-	0.92	0.03%			
96	Farakka Stg 3	0.83	0.03%			
97	Jorethang	0.79	0.03%			
98	Darlipalli	0.74	0.03%			
99	Talcher Stg-2	0.70	0.03%			
100	Meghalaya	0.69	0.03%			
101	Korba	0.68	0.02%			
102	Vindhyachal stg-	0.63	0.02%			
103	Vindhyachal stg-	0.62	0.02%			
104	NLC	0.62	0.02%			
105	Sainj HEP	0.58	0.02%			
106	Chandigarh	0.57	0.02%			
107	Sipat Stg-1	0.56	0.02%			
108	BALCO 2	0.55	0.02%			
109	Sipat Stg-2	0.53	0.02%			
110	Talcher	0.53	0.02%			
111	KBUNL(MTPS-	0.50	0.02%			
112	Ramagundam	0.46	0.02%			
113	Vindhyachal stg-	0.44	0.02%			
114	Simhadri Stg-1	0.32	0.01%			
115	DHARIWAL	0.32	0.01%			
116	NTPC	0.29	0.01%			
117	NTPC Lara	0.28	0.01%			
118	Goa SR	0.28	0.01%			
119	Renew Surya	0.26	0.01%			
120	Korba Stg 3	0.22	0.01%			
121	AGTPP	0.17	0.01%			
122	NTPC	0.15	0.01%			
123	Jaypee Nigrie	0.15	0.01%			
124	Dhariwal ISTS	0.14	0.01%			
125	AGBPP	0.12	0.00%			
126	DHARIWAL	0.12	0.00%			
127	Mizoram	0.07	0.00%			
128	GMR	0.07	0.00%			
129	Lanco Budhil	0.06	0.00%			
130	Sikkim Urja	0.02	0.00%			
131	NTPC Kawas	0.02	0.00%			
Total Volume of top 10		1,914.58	69.88%	Total Volume of top 10	2,209.11	80.63%
Total Volume in PXs		2,739.81		Total Volume in PXs	2,739.81	

Cross Border Electricity Transactions in Day Ahead Market (DAM) in IEX with Nepal and Bhutan during the month of August, 2023			
S. No	Delivery Date	Buy Volume By Nepal (MU)	Sell Volume By Nepal (MU)
1	01-08-2023	0.11	7.03
2	02-08-2023	0.00	6.93
3	03-08-2023	0.00	7.01
4	04-08-2023	0.00	7.17
5	05-08-2023	0.00	8.24
6	06-08-2023	0.00	7.47
7	07-08-2023	0.00	7.95
8	08-08-2023	0.00	8.80
9	09-08-2023	0.00	10.65
10	10-08-2023	0.00	10.13
11	11-08-2023	0.00	10.00
12	12-08-2023	0.00	10.15
13	13-08-2023	0.00	9.44
14	14-08-2023	0.00	10.65
15	15-08-2023	0.00	8.42
16	16-08-2023	0.00	7.75
17	17-08-2023	0.00	6.59
18	18-08-2023	0.00	6.78
19	19-08-2023	0.00	9.07
20	20-08-2023	0.00	7.85
21	21-08-2023	0.00	7.40
22	22-08-2023	0.00	8.30
23	23-08-2023	0.00	8.56
24	24-08-2023	0.00	10.03
25	25-08-2023	0.00	10.35
26	26-08-2023	0.00	10.47
27	27-08-2023	0.00	9.48
28	28-08-2023	0.00	8.83
29	29-08-2023	0.00	9.22
30	30-08-2023	0.00	9.46
31	31-08-2023	0.00	9.43
Total		0.11	269.61
Grand Total		269.72	

-: No transaction took place

Note: Cross Border Transactions of Electricity of 269.72 MU (i.e. 0.11 MU bought by Nepal and 269.61 MU sold by Nepal) happened during August, 2023 in IEX, which is included in DAM Volume of August, 2023 in IEX.

Analysis for change in trend of Final Scheduled Volume in DAM on 2nd Sunday, 4th Monday of August, 2023 (i.e. 13th & 28th August, 2023)

Final Scheduled Volume (MU) and the Daily Avg. MCP (₹/kWh) invariably shows decreasing trend on Sundays and increasing trend on Mondays as the demand of electricity in the country is less on Sundays as compared to other days of week. However, during the month of August, 2023, it is observed that on second Sunday (13th August, 2023), FSV showed increasing trend in comparison to second Saturday (12th August, 2023), on fourth Monday (28th August, 2023), FSV showed decreasing trend in comparison to fourth Sunday (27th August, 2023).

- (i) On second Sunday (13th August, 2023), although there was decrease in purchase on power exchange by some of the States in comparison to second Saturday (12th August, 2023) by **15.80 MU** [i.e. West Bengal (7.68 MU), Maharashtra (3.21 MU), Tamil Nadu (2.37 MU), Haryana (1.66 MU) and Rajasthan (0.43 MU), etc.], there was also increase in purchase on power exchange by some of the States by **24.04 MU** [i.e. Uttar Pradesh (4.88 MU), Chhattisgarh (3.81 MU), Karnataka (3.41 MU), Assam (2.38 MU) and Kerala (1.86 MU), etc.]. This resulted in an overall increase in FSV by **8.24 MU** on Sunday (13th August, 2023) as compared to Saturday (12th August, 2023).
- (ii) On fourth Monday (28th August, 2023), although there was increase in purchase on power exchange by some of the States in comparison to fourth Sunday (27th August, 2023) by **35.46 MU** [i.e. West Bengal (15.93 MU), Telangana (12.50 MU), Karnataka (5.75 MU), Chhattisgarh (0.64 MU) and Odisha (0.44 MU), etc.], there was also decrease in purchase on power exchange by some of the States by **39.69 MU** [i.e. Gujarat (16.34 MU), Tamil Nadu (8.90 MU), Uttar Pradesh (3.44 MU), Kerala (3.23 MU) and Rajasthan (1.93 MU), etc.]. This resulted in an overall decrease in FSV by **4.23 MU** on Monday (28th August, 2023) as compared to Sunday (27th August, 2023).

Definitions/ Terminologies used in the Report

1. **Area Clearing Price (ACP)** is price discovered in each time block of concerned bid area. The country has been divided into 13 bid areas for the purpose of calculating prices in Power Exchanges.
The 13 Bid areas are as under:
N1: Jammu and Kashmir, Himachal Pradesh, Chandigarh, Haryana; **N2:** Uttar Pradesh, Uttaranchal, Rajasthan, Delhi; **N3:** Punjab; **E1:** West Bengal, Sikkim, Bihar, Jharkhand; **E2:** Odisha; **W1:** Madhya Pradesh; **W2:** Maharashtra, Gujarat, Daman and Diu, Dadar and Nagar Haveli, North Goa; **W3:** Chhattisgarh; **S1:** Andhra Pradesh, Telangana, Karnataka, Pondicherry (Yanam), South Goa; **S2:** Tamil Nadu, Pondicherry (Puducherry), Pondicherry (Karaikal), Pondicherry (Mahe); **S3:** Kerala; **A1:** Tripura, Manipur, Mizoram, Nagaland; **A2:** Assam, Arunachal Pradesh, Meghalaya.
2. **Average MCP** is the average of Daily Avg. MCP of the days during the month on which transaction happened.
3. **Bilateral Transaction** means a transaction for exchange of electrical energy (MWh) between a specified buyer and a specified seller, from a specified point of injection to a specified point of drawal for a fixed or varying quantum of power (MW) for any time block during a month.
4. **Daily Average MCP** is the average of MCP of all 96 Time Blocks of the day during which transaction happened.
5. **Day-Ahead Market (DAM)** means a market where Day Ahead Contracts are transacted on the Power Exchanges, wherein Collective Transactions occur on day (T) and delivery of electricity is on the next day (T+1).
6. **Elasticity** is percentage of change in MCP with respect to change in independent variable viz. peak demand, average purchase bid, average sell bid, generation from coal based plants, generation from hydro based plants, generation from wind based plants and generation from solar plants.
7. **Energy Supplied** is the total energy (MU) available at the States' periphery.
8. **Final Scheduled Volume** is the total of scheduled volume of all 96 time blocks in a day during the month in which transaction happened.
9. **Green Term Ahead Market (GTAM)** is based on the principles of current Term Ahead Market (TAM) and will offer trade for Solar, Non-Solar and Hydro Renewable Energy (RE) generation.

- 10. Green Day Ahead Market (GDAM)** is based on the principles of current Day Ahead Market (DAM), where market participants purchase and sell electricity generated from renewable sources.
- 11. Long Duration Contracts** on the power exchanges is a product segment under which the participants are allowed to trade for delivery of power upto 90 Days (Delivery Starting from T+2 to T+90 Days).
- 12. MCP** is the price discovered in each of the 15 Minute Time Block. The day is divided in 96-time blocks of 15 minutes each.
- 13. Real Time Market (RTM)** means a market where Real-Time Contracts are transacted on the Power Exchange(s), i.e. a contract other than Day Ahead Contract or Intraday Contract or Contingency Contract. In RTM collective transactions occur on day (T) or day (T-1) and delivery of electricity is on day (T) for a specified delivery period.
- 14. Term Ahead Market (TAM)** means a market where Term Ahead Contracts are transacted on the Power Exchange(s), i.e. a contract wherein transactions occur on day (T) and physical delivery of electricity is on a day more than one day ahead (T + 2 or more).