



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: जून, 2023 माह की मार्केट मॉनिटरिंग रिपोर्ट।

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

महोदय/ Sir,

जून, 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 June, 2023 is enclosed herewith for kind information and perusal.

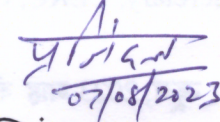
जून, 2023 माह के दौरान मार्केट के संचालन की मुख्य विशेषताएं इस प्रकार रही। Key highlights of the market operation during June, 2023 are as under:

- (i) जून, 2023 माह में देश में कुल 139,232 MU विद्युत का कारोबार किया गया, जिसमें से 67,872 MU का कारोबार अंतर्राज्यीय पारेषण प्रणाली (Inter State Transmission System) के माध्यम से किया गया था और शेष राज्य नियंत्रित उत्पादन स्टेशनों से अंतराज्यीय पारेषण प्रणाली (Intra State Transmissions System) के माध्यम से किया गया। In the month of June, 2023 a total of 139,232 MU of electricity was transacted in the country out of which 67,872 MU was transacted through ISTS, and the remaining through state controlled generating stations through Intra State Transmissions System.
- (ii) अल्पावधि मार्केट के अंतर्गत कुल 22,656 MU का कारोबार किया गया था, जिसमें से 9,821 MU पावर एक्सचेंजों के माध्यम से कारोबार किया गया और शेष द्विपक्षीय कारोबार और विचलन (deviations) के रूप में हुआ। इस प्रकार अल्पावधि कारोबार, जून, 2023 माह में ट्रेड की गई विद्युत की कुल मात्रा का 16.27 % था और 7.05 % पावर एक्सचेंजों के माध्यम से रहा। A total of 22,656 MU was transacted under Short Term

Market, out of which 9,821 MU was transacted through Power Exchanges and remaining happened as bilateral transactions & deviations. Thus, the total short term trade in June, 2023 was 16.27 % of total volume of electricity traded in June, 2023 and 7.05 % 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 33.38 % रहा, जिसमें से पावर एक्सचेंजों के माध्यम से कारोबार 14.47 % रहा। If we compare these transactions with respect to the electricity supplied through ISTS, the short term transactions constitutes about 33.38 % of ISTS transactions, out of which transaction through the power exchanges constitutes 14.47 %.

भवदीय/ Yours faithfully,


07/08/2023

(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)
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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>)



सत्यमेव जयते

मासिक मार्केट मॉनिटरिंग रिपोर्ट - जून, 2023

Monthly Market Monitoring Report June, 2023



भारत सरकार/ Government of India

विद्युत मंत्रालय/ Ministry of Power

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

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

जून, 2023 माह के लिए सारांश Summary for Month: June, 2023

भारत में विद्युत एक्सचेंजों पर विद्युत के व्यापार का सारांश

Summary of Electricity Transactions on Power Exchanges in India

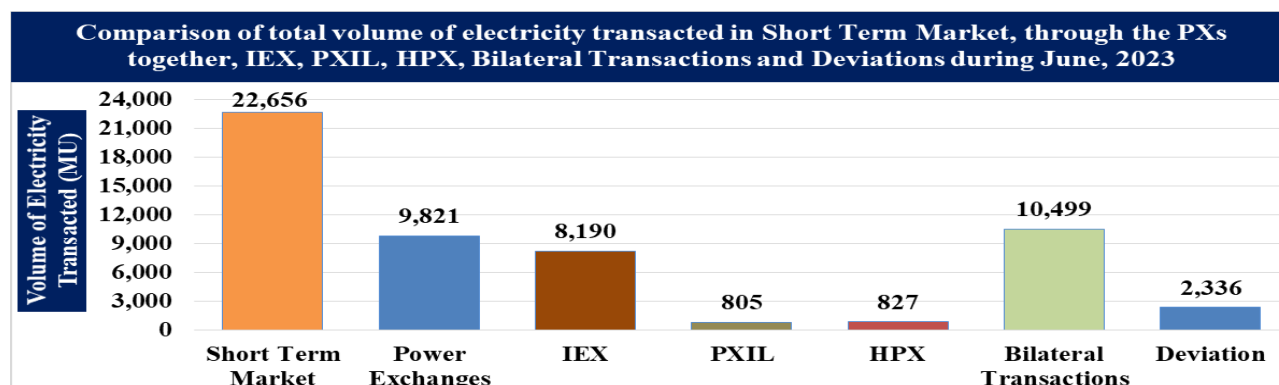
- जून, 2023 के दौरान विद्युत एक्सचेंजों (यानी आईईएक्स, पीएक्सआईएल और एचपीएक्स) के माध्यम से कुल **9,821 MU** विद्युत का कारोबार किया गया। विद्युत की यह मात्रा डिलीवरी की तारीख के आधार पर है और इसमें DAM, GDAM, RTM, TAM, DAC & ID, GTAM और G-DAC & ID मार्केट खंडों के माध्यम से कारोबार शामिल हैं।
A total volume of **9,821 MU** electricity was transacted through power exchanges i.e. IEX, PXIL & HPX, during the month of June, 2023. This volume of electricity is on delivery date basis and includes transactions through DAM, GDAM, RTM, TAM, 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	4,123	5.16	0.64	0.00
GDAM	167	4.95	0.00	0.00
RTM	2,675	4.86	0.70	0.00
TAM	591	6.24	50.40	2.79
DAC & ID	2,064	6.58	0.00	18.24
GTAM	38	6.38	3.52	0.00
G-DAC & ID	163	5.67	0.00	0.00
Total in PXs	9,821	5.45*	55.26	21.03

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

- द्विपक्षीय व्यापार के तहत कुल **10,499 MU** विद्युत का कारोबार किया गया और **2,336 MU** को विचलन के रूप में स्थानांतरित किया गया। इस प्रकार कुल **22,656 MU** विद्युत का कारोबार अल्पावधि व्यापार के रूप में किया गया था। जून, 2023 के महीने में देश में कुल **139,232 MU** विद्युत की आपूर्ति की गई थी, इस प्रकार जून, 2023 माह में कारोबार की गई विद्युत की कुल मात्रा में अल्पावधि बाजार का हिस्सा **16.27 %** था।

Under the Bilateral trade a total of **10,499 MU** of electricity was transacted and **2,336 MU** was transferred as deviation. Thus a total of **22,656 MU** of electricity was transacted as short term trade. In the month of June, 2023 a total of **139,232 MU** of electricity was supplied in the country, thus the share of short term market in the total volume of electricity traded in June, 2023 was **16.27%**.



- जून, 2023 के दौरान संचरण जाम की कुल मात्रा **55.26 MU** थी, जो की विद्युत एक्सचेंजों में कारोबार की गई विद्युत की कुल मात्रा का केवल 0.56 % है और जून, 2023 के महीने के दौरान आपूर्ति की गई कुल ऊर्जा का 0.04 % है।

The total volume of transmission congestion that happened during the month of June, 2023 was **55.26 MU** which is only 0.56 % of the total volume of electricity transacted in the power exchanges and 0.04 % of total energy supplied during the month of June, 2023.

DAM में 1 दिन अर्थात् दिनांक 25 जून, 2023, RTM में 5 दिन अर्थात् दिनांक 2, 8, 17, 22 एवं 23 जून, 2023, TAM में 30 दिन अर्थात् दिनांक 1 से 30 जून, 2023 और GTAM में 1 दिन अर्थात् दिनांक 1 जून, 2023 को संचरण जाम देखा गया। जबकि GDAM, DAC & ID और G-DAC & ID में कोई संचरण जाम नहीं देखा गया। जून, 2023 माह के महीने में रिपोर्ट की गई वास्तविक समय में विद्युत कटौती की कुल मात्रा केवल **21.03 MU** थी।

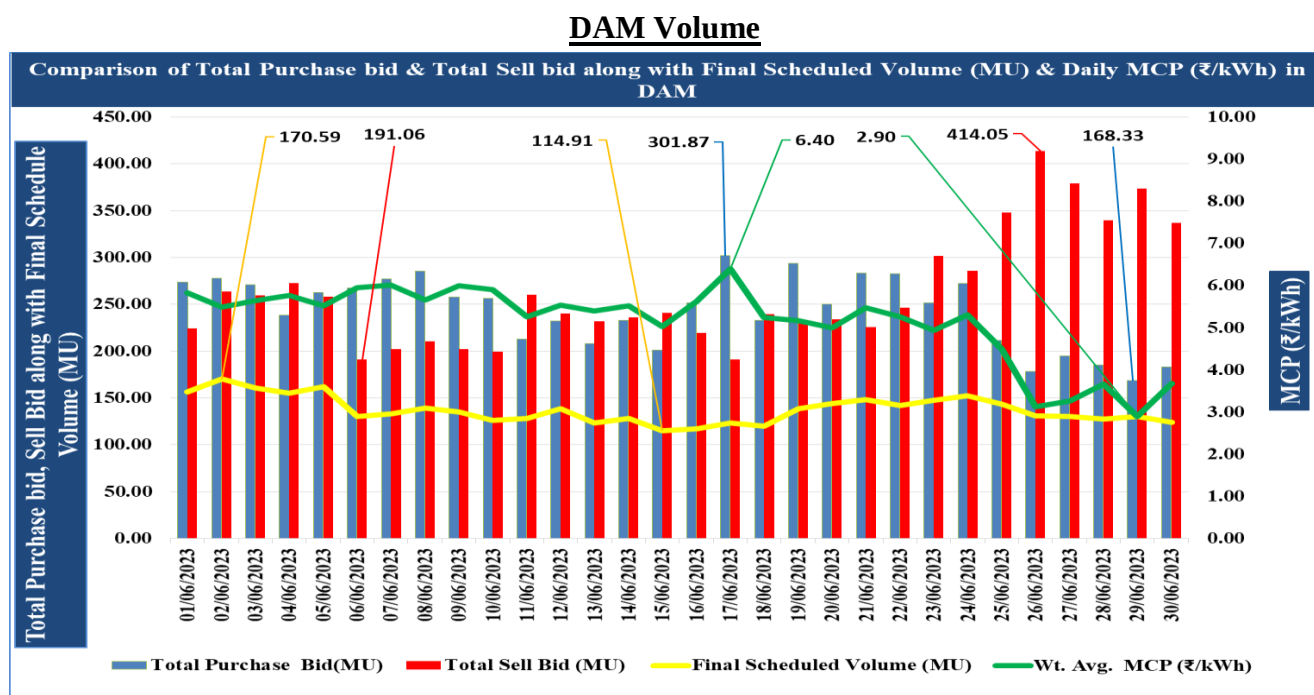
Transmission congestion observed in DAM on 1 day i.e. 25th June, 2023, RTM on 5 days i.e. 2nd, 8th, 17th, 22nd & 23rd June, 2023, TAM on 30 days i.e. 1st to 30th June, 2023 and GTAM on 1 day i.e. 1st June, 2023. Whereas, there was no congestion happened in GDAM, DAC & ID & G-DAC & ID. The total volume of real time curtailment reported in the month of June, 2023 was only **21.03 MU**.

- जून, 2023 माह के दौरान अंतर्राज्यीय पारेषण प्रणाली (ISTS) में निर्धारित अनुसूचित विद्युत की कुल मात्रा **67,872 MU** थी। जून, 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 33.38 % रहा।

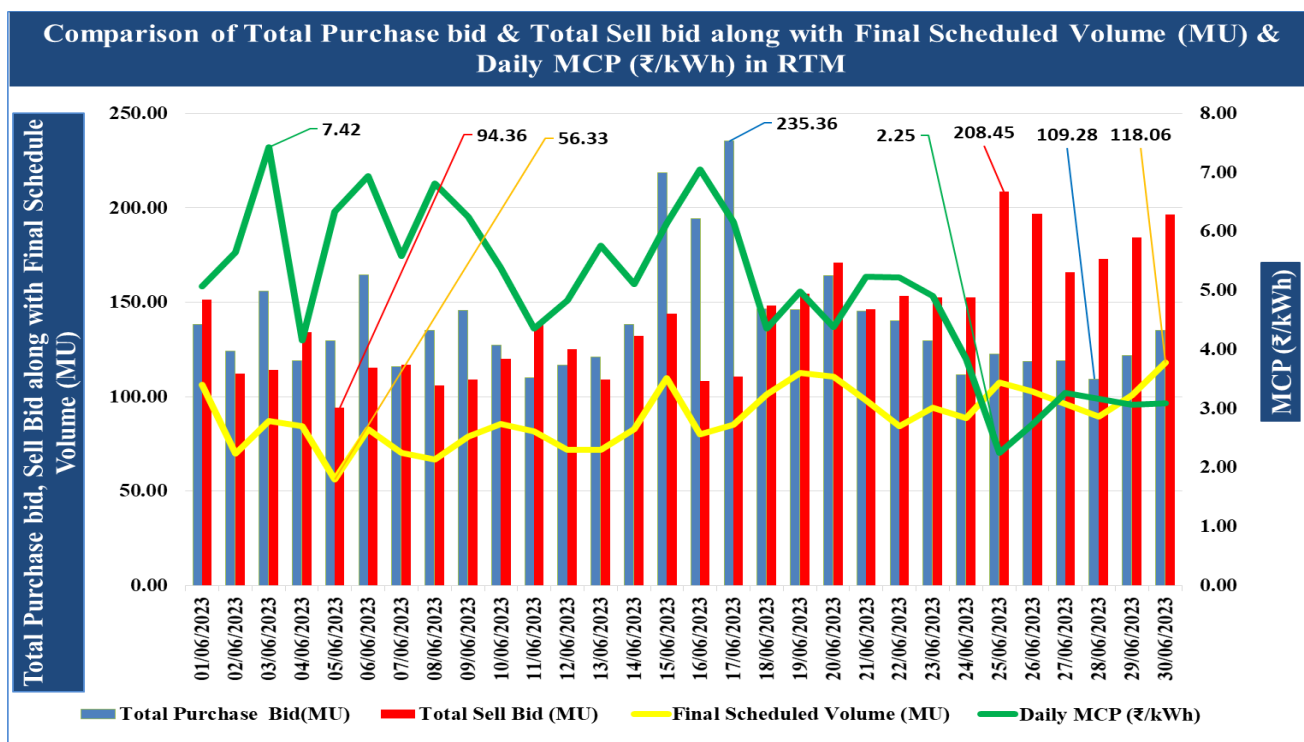
The total volume of electricity scheduled at ISTS during the month of June, 2023 was **67,872 MU**. The total volume of electricity transacted in the short term market was **33.38 %** of total volume schedule at ISTS in the month of June, 2023.

- जून, 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 June, 2023 are shown in following figures:



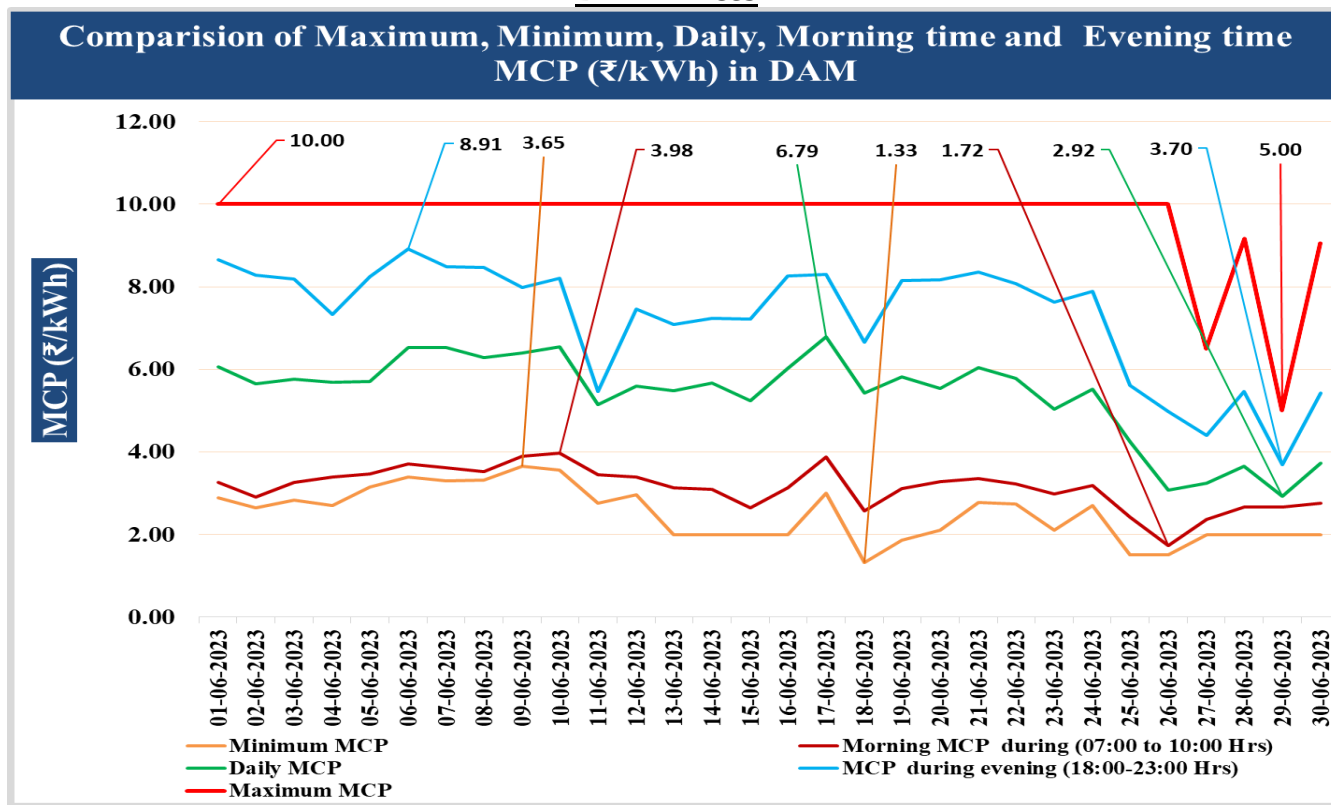
RTM Volume



- जून, 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:

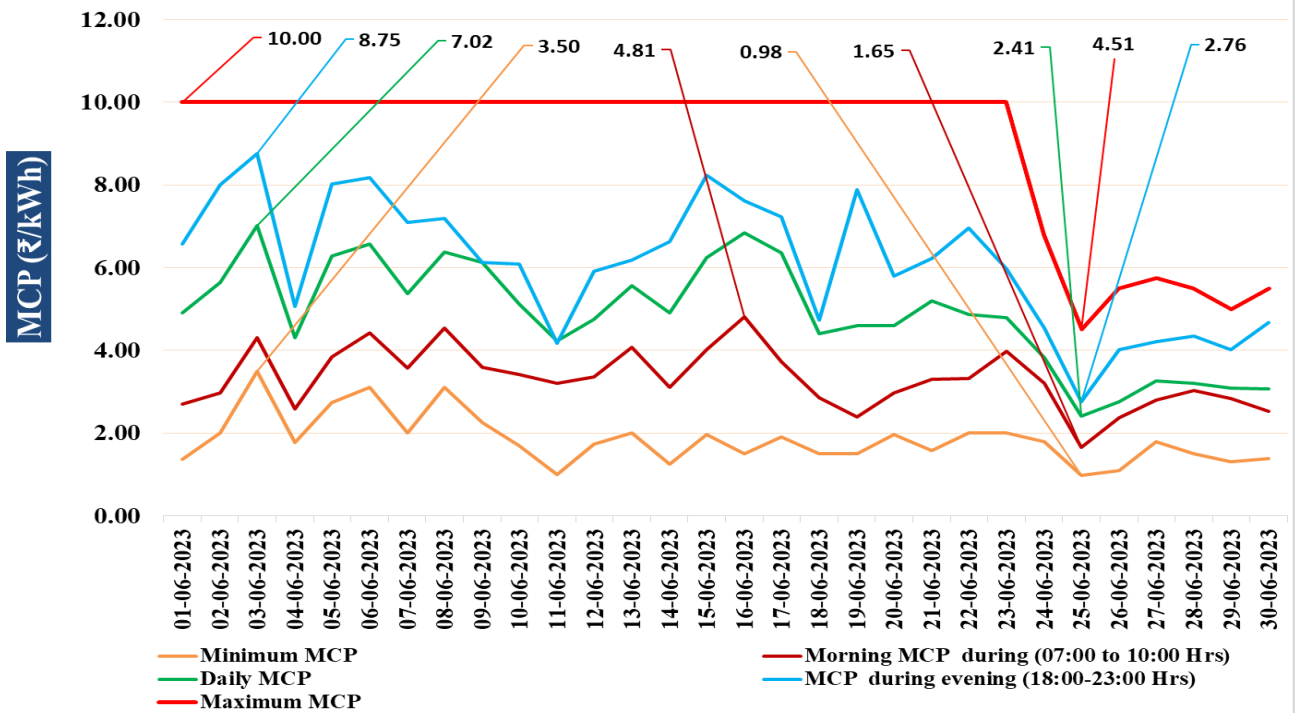
The variation of Maximum, Minimum, Daily, Morning and Evening time MCPs in DAM and RTM during the month of June, 2023 are shown in following figures:

DAM Prices



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 and PXIL in the Day Ahead Market (DAM) in the month of June, 2023 was **4,123.37 MU**. The total energy supplied in the country during the month of June, 2023 was 139,232 MU. Thus, the volume of electricity transacted on the power exchanges in DAM during June, 2023 was 2.96 % of the total energy supplied in the country. Comparing with the total volume of electricity transacted in DAM during the past month i.e. May, 2023, it was **4,001.32 MU** which was 2.93 % of the total energy supplied (136,379 MU) in the country during May, 2023. Similarly, the total volume of electricity transacted in DAM during previous year i.e. June, 2022, was **4,201.19 MU** which was 3.15 % of the total energy supplied (133,263 MU) in the country during June, 2022.
- 1.2.** The volume of electricity transacted on IEX and PXIL during June, 2023 were **4,123.34 MU** and **0.03 MU**, respectively, which means that the total volume transacted on IEX was **99.999 %** of the total volume on power exchanges. No transaction of electricity took place in HPX. The volume of electricity transacted on IEX and PXIL during May, 2023 were **3,999.76 MU** and **1.56 MU**, respectively. No transaction of electricity took place in HPX. The volume of electricity transacted on IEX and PXIL during June, 2022, were **4,084.99 MU** and **116.20 MU** respectively.
- 1.3.** The DAM volume for June, 2023 in IEX is inclusive of Cross Border Transactions of Electricity with Nepal and Bhutan (details given at **Annexure XII**), which was **186.77 MU** (i.e. 68.41 MU buy by Nepal and 118.36 MU sell by Nepal).
- 1.4.** The Average Market Clearing Price (MCP) on IEX during the month of June, 2023 was **₹ 5.16/kWh**, which shows an increase of 8.18 % & a decrease of 20.49 % when compared with average MCP's for the month of May, 2023 and June, 2022, which were **₹ 4.77/kWh** and **₹ 6.49/kWh**, respectively. On PXIL, the average MCP during the month of June, 2023 was **₹ 10.00/kWh**, which shows an increase of 44.09 % & 4.99 % when compared with average MCP's for the month of May, 2023 and June, 2022, which were **₹ 6.94/kWh** and **₹ 6.61/kWh**, respectively. No transaction of electricity took place in HPX during June, 2023 and May, 2023.
- 1.5. DAM 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 June, 2023 as compared with May, 2023 and June, 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	June, 2023*	4123.34	114.91	170.59	137.44
	May, 2023*	3999.76	90.10	151.22	129.02
	%Change (Month over Month)	3.09	27.54	12.81	6.53
	June, 2022*	4084.99	101.28	166.38	136.17
	%Change (Year over Year)	0.94	13.46	2.53	0.93
PXIL	June, 2023	0.03	0.03	0.03	0.03
	May, 2023	1.56	0.45	1.11	0.78
	%Change (Month over Month)	-98.08	-93.33	-97.30	-96.15
	June, 2022	116.20	1.39	8.88	3.87
	%Change (Year over Year)	-99.97	-97.84	-99.66	-99.22
HPX	June, 2023	-	-	-	-
	May, 2023	-	-	-	-
	%Change (Month over Month)	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	June, 2023	2.90	6.40	1.33	10.00	5.16
	May, 2023	2.90	6.34	1.78	10.00	4.77
	%Change (Month over Month)	0.00	0.95	-25.28	0.00	8.18
	June, 2022	3.54	10.14	1.00	12.00	6.49
	%Change (Year over Year)	-18.08	-36.88	33.00	-16.67	-20.49
PXIL	June, 2023	10.00	10.00	10.00	10.00	10.00
	May, 2023	3.89	10.00	3.89	10.00	6.94
	%Change Month over Month)	157.07	0.00	157.07	0.00	44.09
	June, 2022	3.66	10.20	1.99	12.00	6.61
	%Change (Year over Year)	173.22	-1.96	402.51	-16.67	51.29
HPX	June, 2023	-	-	-	-	-
	May, 2023	-	-	-	-	-
	%Change Month over Month)	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 608 time blocks on 1st to 26th June, 2023. As there was no congestion in transmission system, the MCP for these time blocks was also ₹ 10.00/kWh. Further in IEX during 14 time blocks on 25th June, 2023 maximum ACP of ₹ 10.00/kWh was not observed in all 13 regions due to congestion in transmission system. Whereas, in PXIL, the maximum ACP of ₹ 10.00/kWh was observed in all 13 regions during 2 time blocks on 28th June, 2023. As there was no congestion in transmission system, the MCP for these time blocks was also ₹ 10.00/kWh. Whereas, in HPX, no transaction of electricity took place in the month of June, 2023.
- 1.2.** The minimum ACP of ₹ 1.33/kWh in IEX was observed in all 13 regions during the time block 09:00 - 09:15 Hrs on 18th June, 2023. As there was no congestion in transmission system, the MCP for this time-block was also ₹ 1.33/kWh. Whereas, in PXIL, the minimum ACP of ₹ 10.00/kWh was observed in all 13 regions during 2 time blocks on 28th June, 2023. As there was no congestion in transmission system, the MCP for these time blocks was also ₹ 10.00/kWh. Whereas, in HPX, no transaction of electricity took place in the month of June, 2023.

2. Real Time Market (RTM)

The total volume of electricity transacted on the power exchanges in Real Time Market in June, 2023 was **2,675.25 MU**, out of which **2,675.25 MU** (100 %) was transacted in IEX and no transaction took place in PXIL and 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 June, 2023 as compared with May, 2023 and June, 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	June, 2023	2675.25	56.33	118.06	89.18
	May, 2023	2424.26	58.28	105.53	78.20
	% Change (Month over Month)	10.35	-3.35	11.87	14.04
	June, 2022	2214.24	57.36	96.43	73.81
	% Change (Year over Year)	20.82	-1.80	22.43	20.82
PXIL	June, 2023	-	-	-	-
	May, 2023	-	-	-	-
	% Change (Month over Month)	NA	NA	NA	NA
	June, 2022	1.03	0.08	0.45	0.26
	% Change (Year over Year)	NA	NA	NA	NA
HPX	June, 2023	-	-	-	-
	May, 2023	1.72	0.22	1.50	0.86
	% 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	June, 2023	2.25	7.42	0.98	10.00	4.86
	May, 2023	2.24	8.00	0.48	10.00	5.03
	% Change (Month over Month)	0.45	-7.25	104.17	0.00	-3.38
	June, 2022	2.96	10.40	0.50	12.00	6.56

Exchange	Period	Prices (₹/kWh)				
		Daily MCP (₹/kWh)		ACP (₹/kWh)		Monthly Avg. MCP (₹/kWh)
		Minimum	Maximum	Minimum	Maximum	Average
	% Change (Year over Year)	-23.99	-28.65	96.00	-16.67	-25.91
PXIL	June, 2023	-	-	-	-	-
	May, 2023	-	-	-	-	-
	% Change (Month over Month)	NA	NA	NA	NA	NA
	June, 2022	4.92	12.00	2.82	12.00	8.49
	% Change (Year over Year)	NA	NA	NA	NA	NA
HPX	June, 2023	-	-	-	-	-
	May, 2023	10.00	10.00	10.00	10.00	10.00
	% 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 **167.36 MU** (i.e. **167.36 MU** in IEX) at an average MCP of ₹ **4.95/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 June, 2023 and its comparison with May, 2023 and June, 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	June, 2023	45.47	0.60	6.35	1.52
		May, 2023	69.73	1.19	6.03	2.25
		% Change (Month over Month)	-34.79	-49.58	5.31	-32.44
		June, 2022	240.78	4.42	17.27	8.03
		% Change (Year over Year)	-81.12	-86.43	-63.23	-81.07
	Non Solar	June, 2023	110.55	1.90	5.11	3.69
		May, 2023	115.41	1.99	6.37	3.72
		% Change (Month over Month)	-4.21	-4.52	-19.78	-0.81
		June, 2022	121.46	0.82	8.74	4.05
		% Change (Year over Year)	-8.98	131.71	-41.53	-8.89
	Hydro	June, 2023	11.34	0.08	0.99	0.38
		May, 2023	12.99	0.04	0.74	0.42
		% Change (Month over Month)	-12.70	100.00	33.78	-9.52
		June, 2022	-	-	-	-
		% Change (Year over Year)	NA	NA	NA	NA
PXIL	Solar, Non Solar and Hydro	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		% Change (Month over Month)	NA	NA	NA	NA
HPX	Solar, Non Solar and Hydro	June, 2023	-	-	-	-
		May, 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	June, 2023	2.73	6.46	1.84	10.00	4.95
		May, 2023	3.39	6.15	2.00	10.00	4.70
		% Change (Month over Month)	-19.47	5.04	-8.00	0.00	5.32
		June, 2022	5.04	12.00	2.97	12.00	7.60
		% Change (Year over Year)	-45.83	-46.17	-38.05	-16.67	-34.87
PXIL	Solar, Non Solar and Hydro	June, 2023	-	-	-	-	-
		May, 2023	-	-	-	-	-
		% Change (Month over Month)	NA	NA	NA	NA	NA
HPX	Solar, Non Solar and Hydro	June, 2023	-	-	-	-	-
		May, 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 June, 2023, May, 2023 and June, 2022.

3.2 There was no real time curtailment in the power exchanges in Green Day Ahead Market during the month of June, 2023, May, 2023 and June, 2022.

3.3 The **top 10 sellers** on the power exchanges in **Green Day Ahead Market (GDAM)** in the month of June, 2023 were **Renew Surya Ravi Private Limited (solar), J&K, Maharashtra, ADANI WIND ENERGY KUTCHH FOUR Ltd., Nakhatrana, Andhra Pradesh, WIND FIVE RENERGY LIMITED, Karnataka, Singoli Bhagwati, Ostro Kannada Power Private Limited and Rajasthan**, which constituted **82.75 %** of the market volume.

3.4 The **top 10 buyers** on the power exchanges in **Green Day Ahead Market (GDAM)** in the month of June, 2023 were **Maharashtra, DVC, Tamil Nadu, Karnataka, BHARAT ALUMINIUM COMPANY LTD (Bulk Consumer), Punjab, Daman & Diu - Dadra & Nagar Haveli, Kerala, Uttar Pradesh and Gujarat**, which constituted **88.72 %** 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 June, 2023 on delivery date basis was **590.53 MU**, out of which **322.49 MU** (54.61 %) was transacted on IEX, **172.80 MU** (29.26 %) was transacted on PXIL and **95.24 MU** (16.13 %) was transacted on HPX.
- 4.2.** The total volume of electricity transacted on the power exchanges in Term Ahead Market in May, 2023 on delivery date basis was **940.27MU**, out of which **607.72 MU** (64.65 %) was transacted on IEX, **133.80 MU** (14.23 %) was transacted on PXIL and **198.75 MU** (21.12 %) was transacted on HPX.
- 4.3.** Similarly, the total volume of electricity transacted on the power exchanges in Term Ahead Market in June, 2022 on delivery date basis was **162.45 MU**, out of which, **131.25 MU** (80.79 %) was transacted on IEX and **31.20 MU** (19.21 %) was transacted on PXIL.
- 4.4.** With respect to the total energy supplied during the month of June, 2023 in the country, the volume of electricity traded on the power exchanges in TAM on delivery date basis represents **0.42 %** of the total energy supplied. The same was **0.69 %** in May, 2023 and **0.12 %** in June, 2022.
- 4.5.** In the month of June, 2023, there was transmission congestion of **50.40 MU** in IEX. Whereas there was no transmission congestion in PXIL and HPX in TAM.
- 4.6.** In the month June, 2023, there was real time curtailment of **2.79 MU** in TAM, Out of which **0.14 MU** happened under Daily-Anyday contract & **2.37 MU** happened under Anyday Single Sided contract in IEX. Whereas, in HPX, there was real time curtailment of **0.28 MU** under Daily-Anyday contract & in PXIL, there was no real time curtailment in TAM
- 4.7. 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 June, 2023 with May, 2023 and June, 2022 is given in Table – 4A & 4B:**

(a) Final Scheduled Volume (MU), June, 2023 vis- a- vis May, 2023 and June, 2022

Exchange	Period	Final Scheduled Volume (MU)				
		Daily or Any Day	Weekly	Monthly	Anyday Single Side	Total
IEX	June, 2023	75.26	-	-	247.23	322.49
	May, 2023	283.05	90.65	89.28	144.74	607.72
	%Change (Month over Month)	-73.41	NA	NA	70.81	-46.93
	June, 2022	131.25	-	-	-	131.25
	%Change (Year over Year)	-42.66	NA	NA	NA	145.71
PXIL	June, 2023	-	-	-	172.80	172.80
	May, 2023	59.40	-	-	74.40	133.80
	%Change (Month over Month)	NA	NA	NA	132.26	29.15

Exchange	Period	Final Scheduled Volume (MU)				
		Daily or Any Day	Weekly	Monthly	Anyday Single Side	Total
	June, 2022	31.20	-	-	-	31.20
	%Change (Year over Year)	NA	NA	NA	NA	453.85
HPX	June, 2023	11.72	-	-	83.52	95.24
	May, 2023	141.54	42.00	-	15.21	198.75
	%Change (Month over Month)	-91.72	NA	NA	449.11	-52.08

- : No transaction took place

NA: Not Applicable

Table: 4A

(b) Average MCP, June, 2023 vis- a- vis May, 2023 and June, 2022

Exchange	Period	Average MCP (₹/kWh)			
		Daily or Any Day	Weekly	Monthly	Anyday Single Side
IEX	June, 2023	6.29	-	-	6.52
	May, 2023	8.70	9.05	6.80	7.91
	%Change (Month over Month)	-27.70	NA	NA	-17.57
	June, 2022	5.10	-	-	-
	%Change Year over Year)	23.33	NA	NA	NA
PXIL	June, 2023	-	-	-	5.80
	May, 2023	8.30	-	-	7.95
	%Change (Month over Month)	NA	NA	NA	-27.04
	June, 2022	5.87	-	-	-
	%Change (Year over Year)	NA	NA	NA	NA
HPX	June, 2023	6.80	-	-	6.22
	May, 2023	9.07	6.40	-	9.74
	%Change (Month over Month)	-25.03	NA	NA	-36.14

-: 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 was **2063.62 MU**.

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

a) Final Scheduled Volume (MU), June, 2023 vis- a- vis May, 2023 and June, 2022

Exchange	Period	Final Scheduled Volume (MU)		
		Day Ahead Contingency	Intra Day	Total
IEX	June, 2023	776.15	18.98	795.13
	May, 2023	531.97	6.28	538.25
	%Change (Month over Month)	45.90	202.23	47.73
	June, 2022	624.11	3.67	627.78
	%Change (Year over Year)	24.36	417.17	26.66
PXIL	June, 2023	568.59	20.27	588.86
	May, 2023	362.62	21.23	383.85
	%Change (Month over Month)	56.80	-4.52	53.41
	June, 2022	724.60	3.78	728.38
	%Change (Year over Year)	-21.53	436.24	-19.15
HPX	June, 2023	667.55	12.08	679.63
	May, 2023	448.80	6.40	455.20
	%Change (Month over Month)	48.74	88.75	49.30

- : No transaction took place

NA: Not Applicable

Table: 5A

b) Average MCP, June, 2023 vis- a- vis May, 2023 and June, 2022

Exchange	Period	Average MCP (₹/kWh)	
		Day Ahead Contingency	Intra Day
IEX	June, 2023	6.16	9.76
	May, 2023	5.08	9.90
	%Change (Month over Month)	21.26	-1.41
	June, 2022	6.31	10.59
	%Change Year over Year)	-2.38	-7.84
PXIL	June, 2023	6.77	9.41
	May, 2023	5.00	9.01
	%Change (Month over Month)	35.40	4.44
	June, 2022	6.90	11.14

Exchange	Period	Average MCP (₹/kWh)	
		Day Ahead Contingency	Intra Day
	%Change (Year over Year)	-1.88	-15.53
HPX	June, 2023	6.68	9.75
	May, 2023	7.03	9.83
	%Change (Month over Month)	-4.98	-0.81

- : No transaction took place

NA: Not Applicable

Table: 5B

- In the month of June, 2023, there was no transmission congestion in IEX, PXIL and HPX in DAC & ID.
- In the month June, 2023, there was real time curtailment of **18.24 MU** in DAC & ID, Out of which **4.08 MU** happened under Day Ahead Contingency contract in IEX, **1.48 MU** happened under Day Ahead Contingency contract in PXIL and **12.69 MU** happened under Day Ahead Contingency contract in HPX in DAC & ID.

6. Green Term Ahead Market (GTAM):

The total volume of electricity transacted in the IEX, PXIL & HPX in GTAM on delivery date basis was **38.42 MU** (38.42 MU in Non-Solar only).

The total volume of electricity transacted in GTAM in Daily/ Anyday, Weekly, Monthly and Anyday Single Side contracts during June, 2023 and its comparison with May, 2023 and June, 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 June, 2023 and its comparison with May, 2023 and June, 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	June, 2023	-	-	-	-
		May, 2023	5.25	0.06	0.48	0.44
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	2.40	0.24	0.24	0.24
		%Change (Year over Year)	NA	NA	NA	NA
	Weekly	June, 2023	-	-	-	-
		May, 2023	6.30	0.45	0.45	0.45
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Monthly	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Anyday Single Side	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
PXIL	Daily/Anyday	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-

Exchange	Solar Energy Contract	Period	Final Scheduled Volume (MU)			
			Total	Minimum (on a day)	Maximum (on a day)	Average (per day)
	Weekly	%Change (Year over Year)	NA	NA	NA	NA
		June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Monthly	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Anyday Single Side	June, 2023	-	-	-	-
		May, 2023	1.24	0.04	0.04	0.04
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
HPX	Daily/Anyday	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Weekly	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Monthly	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Anyday Single Side	June, 2023	-	-	-	-
		May, 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	June, 2023	-	-	-
		May, 2023	4.30	4.30	4.30
		%Change (Month over Month)	NA	NA	NA
		June, 2022	4.60	4.60	4.60

Exchange	Solar Energy Contract	Period	Prices(₹/kWh)		
			Minimum	Maximum	Average
	Weekly	%Change (Year over Year)	NA	NA	NA
		June, 2023	-	-	-
		May, 2023	4.30	4.30	4.30
		%Change (Month over Month)	NA	NA	NA
		June, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Monthly	June, 2023	-	-	-
		May, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		June, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Anyday Single Side	June, 2023	-	-	-
		May, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		June, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
PXIL	Daily/Anyday	June, 2023	-	-	-
		May, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		June, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Weekly	June, 2023	-	-	-
		May, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		June, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Monthly	June, 2023	-	-	-
		May, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		June, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Anyday Single Side	June, 2023	-	-	-
		May, 2023	6.25	6.25	6.25
		%Change (Month over Month)	NA	NA	NA
		June, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
HPX	Daily/Anyday	June, 2023	-	-	-
		May, 2023	-	-	-
		%Change	NA	NA	NA

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

-: No transaction took place

NA: Not Applicable

Table-6B

- In June, 2023, there was no transaction took place 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 June, 2023 and its comparison with May, 2023 and June, 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	June, 2023	5.27	0.12	0.21	0.18
		May, 2023	0.72	0.07	0.07	0.07
		%Change (Month over Month)	631.94	71.43	200.00	157.14
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Weekly	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Monthly	June, 2023	3.60	0.12	0.12	0.12
		May, 2023	3.72	0.12	0.12	0.12
		%Change (Month over Month)	-3.23	0.00	0.00	0.00
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Anyday Single Side	June, 2023	28.56	0.12	1.08	0.95
		May, 2023	78.86	2.54	2.54	2.54

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)	-63.78	-95.28	-57.48	-62.60
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
PXIL	Daily/Anyday	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Weekly	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Monthly	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Anyday Single Side	June, 2023	1.47	0.02	0.19	0.06
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
HPX	Daily/Anyday	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Weekly	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Monthly	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Anyday Single Side	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%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	June, 2023	5.27	6.50	5.43
		May, 2023	6.50	6.50	6.50
		%Change (Month over Month)	-18.92	0.00	-16.46
		June, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Weekly	June, 2023	-	-	-
		May, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		June, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Monthly	June, 2023	6.80	6.80	6.80
		May, 2023	6.80	6.80	6.80
		%Change (Month over Month)	0.00	0.00	0.00
		June, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Anyday Single Side	June, 2023	6.50	6.80	6.51
		May, 2023	7.49	7.49	7.49
		%Change (Month over Month)	-13.22	-9.21	-13.08
		June, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
PXIL	Daily/Anyday	June, 2023	-	-	-
		May, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		June, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Weekly	June, 2023	-	-	-
		May, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		June, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Monthly	June, 2023	-	-	-
		May, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		June, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Anyday Single Side	June, 2023	6.45	6.45	6.45
		May, 2023	-	-	-

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

-: No transaction took place

NA: Not Applicable

Table - 6D

- In June, 2023, there was transmission congestion of **3.52 MU** in GTAM (Non Solar) in IEX. Whereas, there was no transaction took place in PXIL & HPX in GTAM (Non Solar).
- In June, 2023, there was no real time curtailment in GTAM (Non Solar) in IEX, PXIL & HPX.

6.3 Hydro Energy Segment in GTAM

The Final Scheduled Volume and the Price of electricity transacted in GTAM (Hydro) in Power Exchanges during June, 2023 and its comparison with May, 2023 and June, 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	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Weekly	June, 2023	-	-	-	-
		May, 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)
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Monthly	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Anyday Single Side	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
PXIL	Daily/Anyday	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Weekly	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Monthly	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Anyday Single Side	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
HPX	Daily/Anyday	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Weekly	June, 2023	-	-	-	-
		May, 2023	-	-	-	-

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

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

-: No transaction took place

NA: Not Applicable

Table – 6F

- In June, 2023, there was no transaction took place 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 was **162.74 MU** (**24.65 MU** in Solar, **112.38 MU** in Non-Solar and **25.71 MU** in Hydro), respectively.

The total volume of electricity transacted in G-DAC & ID in Day Ahead Contingency and Intra Day contracts during June, 2023 and its comparison with May, 2023 and June, 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 June, 2023 and its comparison with May, 2023 and June, 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	June, 2023	6.98	0.26	2.97	0.70
		May, 2023	4.39	0.22	1.08	0.44
		%Change Month over Month)	59.00	18.18	175.00	59.09
		June, 2022	10.93	0.02	2.35	0.73
		%Change (Year over Year)	-36.14	1200.00	26.38	12.33
	Intra Day	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
PXIL	Day Ahead Contingency	June, 2023	-	-	-	-
		May, 2023	14.44	0.24	2.17	0.96
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	25.07	0.32	3.51	2.51
		%Change (Year over Year)	NA	NA	NA	NA
	Intra Day	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
HPX	Day Ahead Contingency	June, 2023	17.67	0.03	3.16	0.61
		May, 2023	13.70	0.03	2.21	0.72
		%Change (Month over Month)	28.98	0.00	42.99	-15.28
	Intra Day	June, 2023	-	-	-	-

Exchange	Solar Energy Contract	Period	Final Scheduled Volume (MU)			
			Total	Minimum (on a day)	Maximum (on a day)	Average (per day)
		May, 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	June, 2023	2.24	4.15	3.42
		May, 2023	2.67	4.25	3.43
		%Change (Month over Month)	-16.10	-2.35	-0.29
		June, 2022	3.20	4.60	3.66
		%Change (Year over Year)	-30.00	-9.78	-6.56
	Intra Day	June, 2023	-	-	-
		May, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		June, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
PXIL	Day Ahead Contingency	June, 2023	-	-	-
		May, 2023	3.09	4.60	3.90
		%Change (Month over Month)	NA	NA	NA
		June, 2022	3.99	5.62	4.89
		%Change (Year over Year)	NA	NA	NA
	Intra Day	June, 2023	-	-	-
		May, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		June, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
HPX	Day Ahead Contingency	June, 2023	2.87	5.27	3.83
		May, 2023	2.55	4.79	3.79
		%Change (Month over Month)	12.55	10.02	1.06
	Intra Day	June, 2023	-	-	-
		May, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table-7B

- In June, 2023, there was no transmission congestion in G-DAC & ID (Solar) in IEX, PXIL & HPX.
- In June, 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 June, 2023 and its comparison with May, 2023 and June, 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	June, 2023	41.56	0.06	5.33	1.54
		May, 2023	54.75	0.49	4.49	1.77
		%Change (Month over Month)	-24.09	-87.76	18.71	-12.99
		June, 2022	112.56	0.18	9.98	4.17
		%Change (Year over Year)	-63.08	-66.67	-46.59	-63.07
	Intra Day	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
PXIL	Day Ahead Contingency	June, 2023	41.65	0.41	8.57	1.98
		May, 2023	27.06	0.13	7.20	1.42
		%Change (Month over Month)	53.92	215.38	19.03	39.44
		June, 2022	35.66	0.03	8.30	1.23
		%Change (Year over Year)	16.80	1266.67	3.25	60.98
	Intra Day	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
HPX	Day Ahead Contingency	June, 2023	29.17	0.08	8.00	1.46
		May, 2023	4.38	0.07	2.21	0.35
		%Change (Month over Month)	565.98	14.29	261.99	317.14
	Intra Day	June, 2023	-	-	-	-
		May, 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	June, 2023	3.22	6.75	5.82
		May, 2023	3.14	7.67	5.17
		%Change (Month over Month)	2.55	-11.99	12.57
		June, 2022	4.04	10.95	7.65
		%Change (Year over Year)	-20.30	-38.36	-23.92
	Intra Day	June, 2023	-	-	-
		May, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		June, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
PXIL	Day Ahead Contingency	June, 2023	3.26	9.88	6.33
		May, 2023	3.72	7.80	5.53
		%Change (Month over Month)	-12.37	26.67	14.47
		June, 2022	5.21	12.00	8.56
		%Change (Year over Year)	-37.43	-17.67	-26.05
	Intra Day	June, 2023	-	-	-
		May, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		June, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
HPX	Day Ahead Contingency	June, 2023	3.14	7.96	5.74
		May, 2023	3.46	7.29	5.33
		%Change (Month over Month)	-9.25	9.19	7.69
	Intra Day	June, 2023	-	-	-
		May, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table - 7D

- In June, 2023, there was no transmission congestion in G-DAC & ID (Non Solar) in IEX, PXIL & HPX.
- In June, 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 June, 2023 and its comparison with May, 2023 and June, 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	June, 2023	20.48	0.45	2.17	0.98
		May, 2023	17.89	0.26	1.18	0.69
		%Change (Month over Month)	14.48	73.08	83.90	42.03
		June, 2022	45.27	0.10	3.21	1.51
		%Change (Year over Year)	-54.76	350.00	-32.40	-35.10
	Intra Day	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
PXIL	Day Ahead Contingency	June, 2023	-	-	-	-
		May, 2023	0.16	0.16	0.16	0.16
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Intra Day	June, 2023	-	-	-	-
		May, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		June, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
HPX	Day Ahead Contingency	June, 2023	5.23	0.44	0.97	0.75
		May, 2023	1.38	0.35	0.59	0.46
		%Change (Month over Month)	278.99	25.71	65.81	63.04
	Intra Day	June, 2023	-	-	-	-
		May, 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	June, 2023	3.28	8.60	5.98
		May, 2023	3.13	6.76	5.13
		%Change (Month over Month)	4.79	27.22	16.57
		June, 2022	3.63	11.26	7.45
		%Change (Year over Year)	-9.64	-23.62	-19.73
	Intra Day	June, 2023	-	-	-
		May, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		June, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
PXIL	Day Ahead Contingency	June, 2023	-	-	-
		May, 2023	8.37	8.37	8.37
		%Change (Month over Month)	NA	NA	NA
		June, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Intra Day	June, 2023	-	-	-
		May, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		June, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
HPX	Day Ahead Contingency	June, 2023	4.48	8.71	6.74
		May, 2023	3.14	4.12	3.76
		%Change (Month over Month)	42.68	111.41	79.26
	Intra Day	June, 2023	-	-	-
		May, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table – 7F

- In June, 2023, there was no transmission congestion in G-DAC & ID (Hydro) in IEX, PXIL and HPX.
- In June, 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 June, 2023 was **10,498.78 MU**. The total buy volume of electricity transacted in bilateral market through direct transactions and trader in the month of June, 2023 were **3,282.04 MU** and **7,216.74 MU** respectively. The details of Bilateral transactions of Electricity during June, 2023 is shown in Table Below:

June, 2023	Direct	Traders	Total Bilateral Transaction (MU)
Total	3,282.04	7,216.74	10,498.78
Minimum	0.70	0.10	-
Maximum	741.20	997.74	-

Table -8A

The region-wise maximum/ minimum volume of electricity transacted bilaterally during June, 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	430.91	749.13	659.52	1602.80	1692.62	3687.49	498.98	1118.28	-	59.04
Minimum	0.78	10.60	17.07	0.10	4.45	22.29	0.70	10.90	-	3.85
Maximum	171.05	536.49	431.65	650.91	741.20	997.74	255.60	601.68	-	51.08

Table-8B

8.1. The top 5 buyers on bilateral transaction through direct transactions in the month of June, 2023 were **Uttar Pradesh, Maharashtra, Punjab, Haryana and Andhra Pradesh**, which constituted **66.02 %** of the market volume. Whereas **top 5 buyers** on bilateral transaction through traders in the month of June, 2023 were **Delhi, Uttar Pradesh, Haryana, Gujarat and Tamil Nadu**, which constituted **54.61 %** of the market volume. [Annexure III]

8.2. The top 5 sellers on bilateral transaction through direct transactions in the month of June, 2023 were **MP, Rajasthan, NTPC Stations SR, Karnataka and J & K**, which constituted **45.27 %** of the market volume. Whereas **top 5 sellers** on bilateral transaction through traders in the month of June, 2023 were **Himachal Pradesh, RPREL, TEESTA HEP, JINDAL STAGE-II and RKM POWER**, which constituted **33.93 %** of the market volume. [Annexure III]

8.3. Deviation Volume -The volume of Deviation observed in the month of June, 2023 in import and export were **2,259.29 MU** and **2,412.78 MU** respectively. The total volume of Deviation observed in the month of June, 2023 can be taken as **2,336.04 MU**.

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

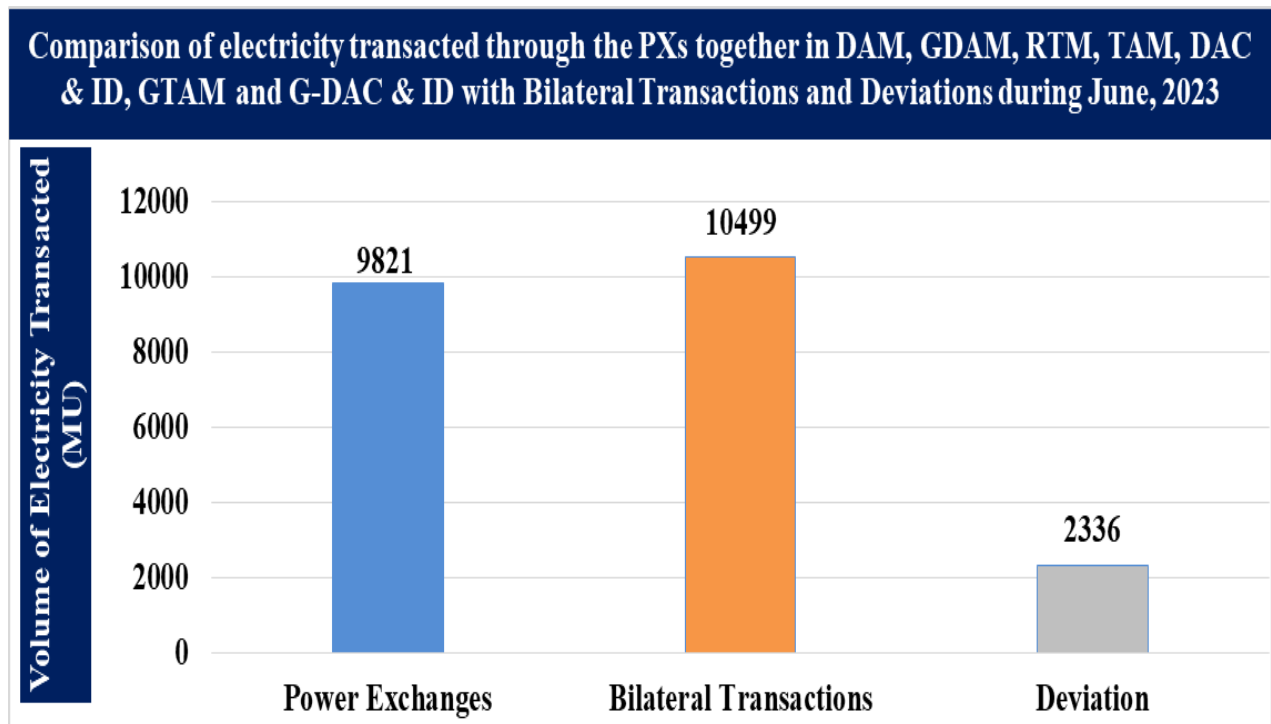
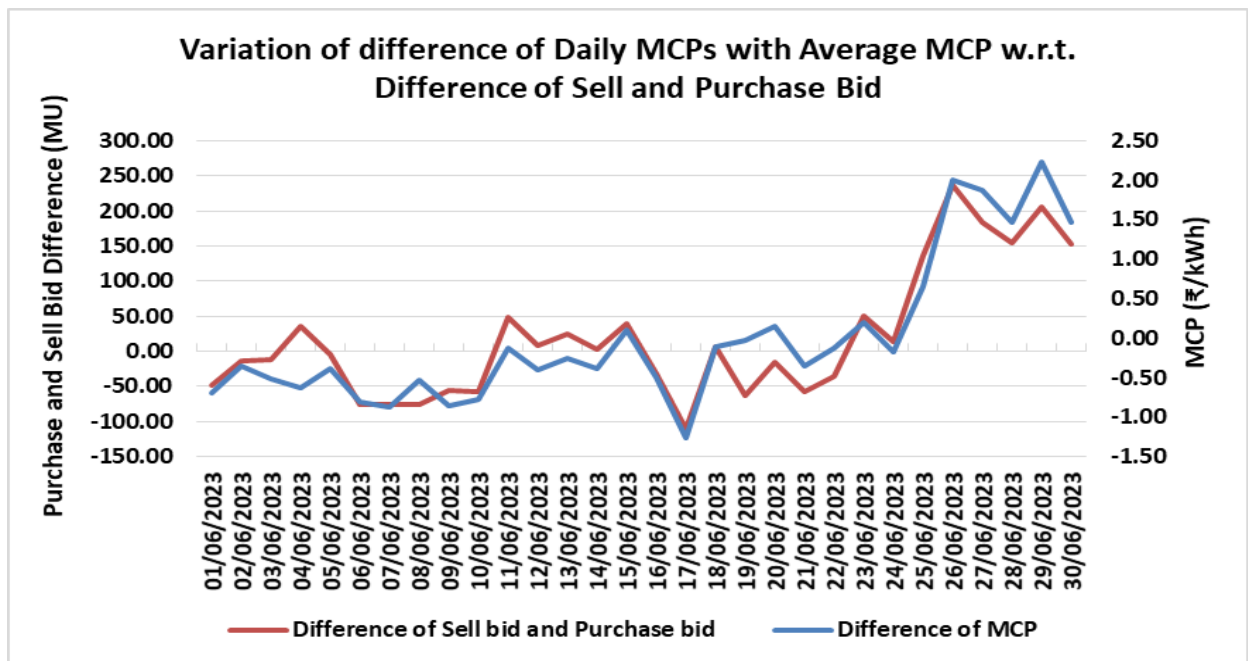


Figure -1

9. Analysis of movement of prices observed in DAM during June, 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 June, 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 **3.49** in the month of June, 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**

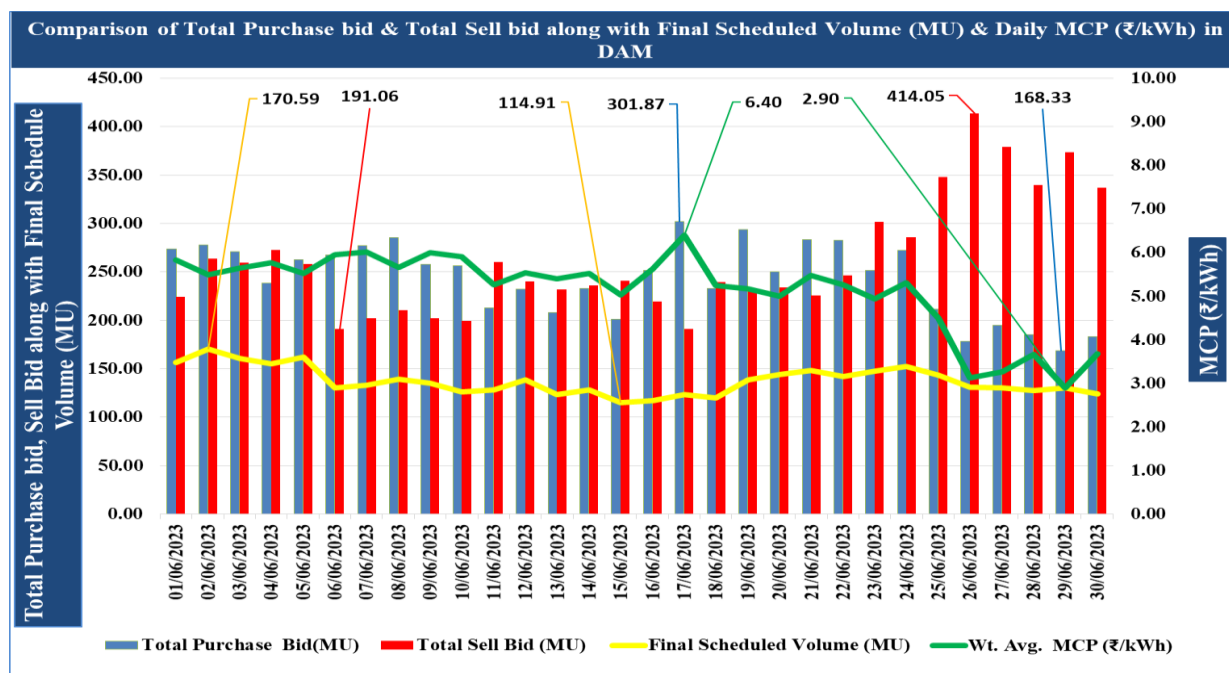


Figure – 2

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 June, 2023, it is observed that on fourth Monday (26th June, 2023), FSV showed decreasing trend in comparison to fourth Sunday (25th June, 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**

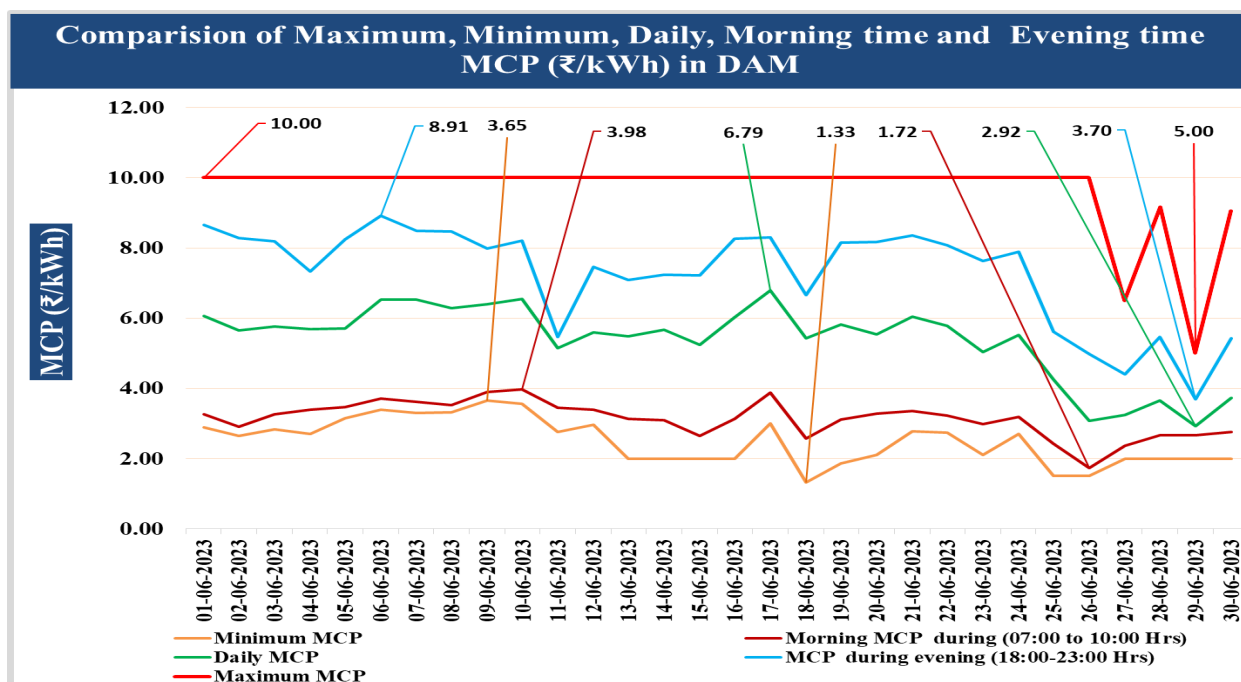


Figure-3

9.7. The Market Clearing Price duration curves for time block wise MCP for the month of June, 2023 is shown in **Figure 4**, whereas the time block wise MCP duration curve for the period 1st April, 2023 to 30th June, 2023 is shown in **Figure 5**.

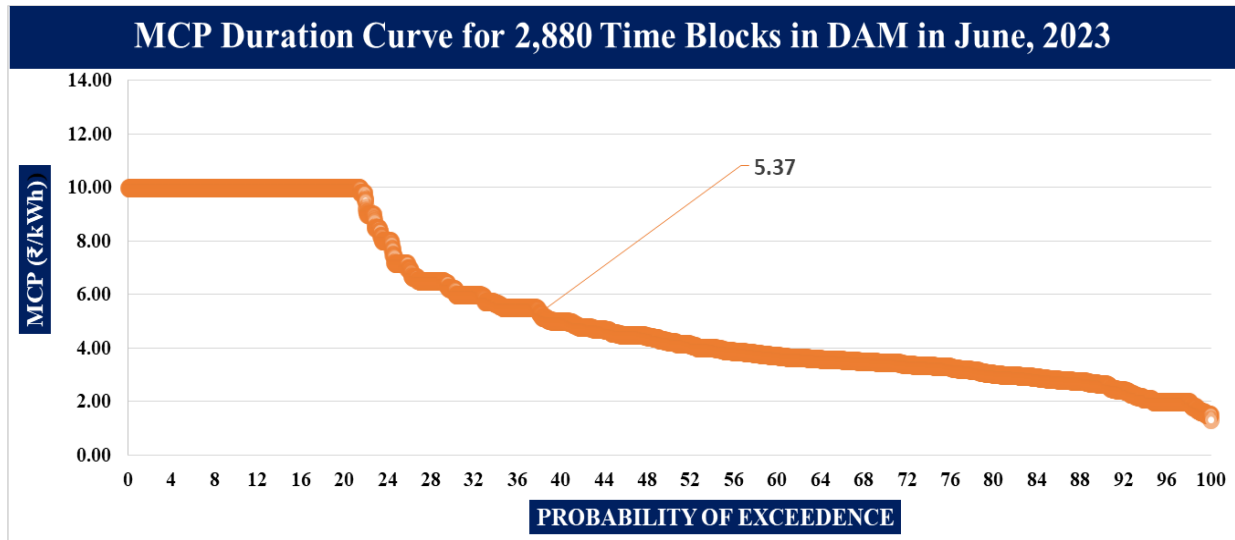


Figure – 4

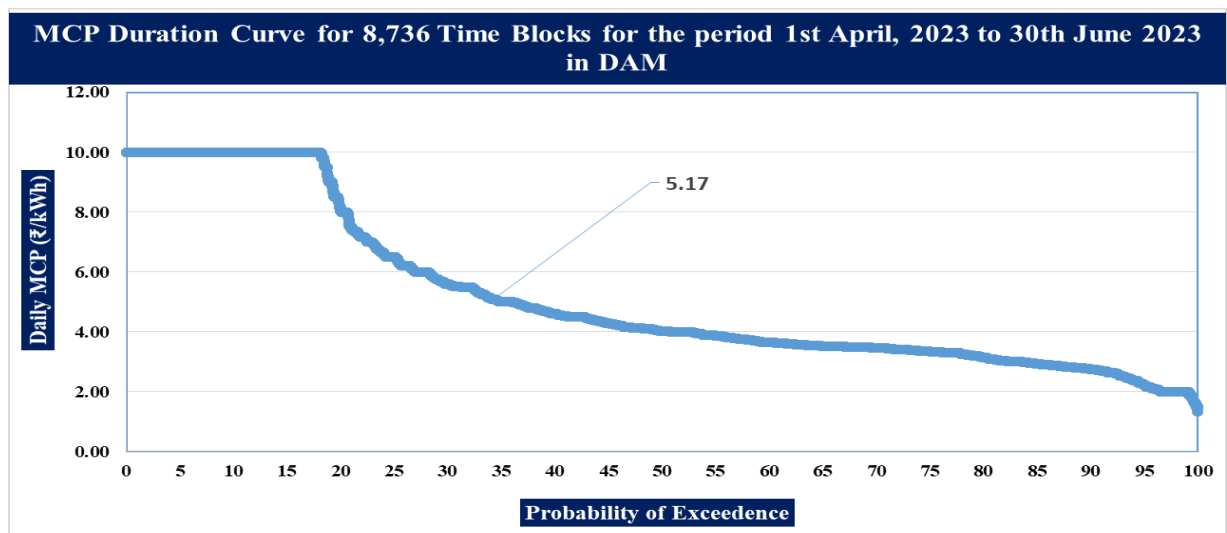


Figure-5

9.8. It can be seen in figure 4 above that in the MCP duration curve of June, 2023, for 39.00 % of the time MCP was above average MCP of the month (i.e. ₹ 5.37/kWh) and almost 61.00 % 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 30th June, 2023 (figure-5), that for 35.00 % of the time the MCP was above the average MCP for the period (i.e. ₹ 5.17/kWh) and for 65.00 % 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 9.1 and 9.2 above**.

- 9.10.** In June, 2023, the maximum FSV occurred mostly during the **time period 14-16 Hrs** (on 11 no. of days). Whereas, the maximum MCP occurred mostly during the **time period 00-01 Hrs** (on 25 no. of days). Similarly, the minimum FSV occurred mostly during the **time period 21-23 Hrs** (on 14 no. of days). Whereas, the minimum MCP occurred mostly during the **time period 08-09 Hrs** (on 17 no. of days). **[Annexure VI]**
- 9.11.** In the month of June, 2023, there was congestion of **0.64 MU** in IEX & PXIL and no transaction of electricity took place in HPX during June, 2023. Further, in the month of May, 2023, there was congestion of **0.41 MU** in IEX & PXIL and no transaction of electricity took place in HPX during June, 2023 and in the month of June, 2022, there was no congestion in IEX and PXIL.
- 9.12.** In the month of June, 2023, there was **no** real time curtailment in IEX & PXIL and no transaction of electricity took place HPX. Further, in the month of May, 2023, there was real time curtailment of **1.55 MU** in IEX & PXIL and no transaction of electricity took place HPX and in the month of June, 2022, there was **no** real time curtailment in IEX & PXIL.
- 9.13.** The **top 10 sellers** on the power exchanges in **Day Ahead Market (DAM)** in the month of June, 2023 were **Delhi, Chhattisgarh, Rajasthan, Uttar Pradesh, Himachal Pradesh, Punjab, Haryana, JITPL, Sikkim Urja Limited** and **MB Power**, which constituted **50.94 %** 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 June, 2023 were **Maharashtra, West Bengal, Andhra Pradesh, Punjab, Gujarat, Telangana, Tamil Nadu, Uttar Pradesh, Assam** and **Kerala**, which constituted **82.46 %** of the market volume. **[Annexure VII]**
- 9.15.** The total volume of electricity purchased by Discoms/Licensees in DAM in the month of June, 2023 was **4,015.93 MU**, which constituted **97.39 %** 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 June, 2023 was **2,444.99 MU**, which constituted **59.30 %** of total volume of electricity sold on the power exchanges.

10. Analysis of movement of prices observed in Real Time Market (RTM) transactions in June, 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 **5.13** in the month of June, 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 10.1 above**.

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

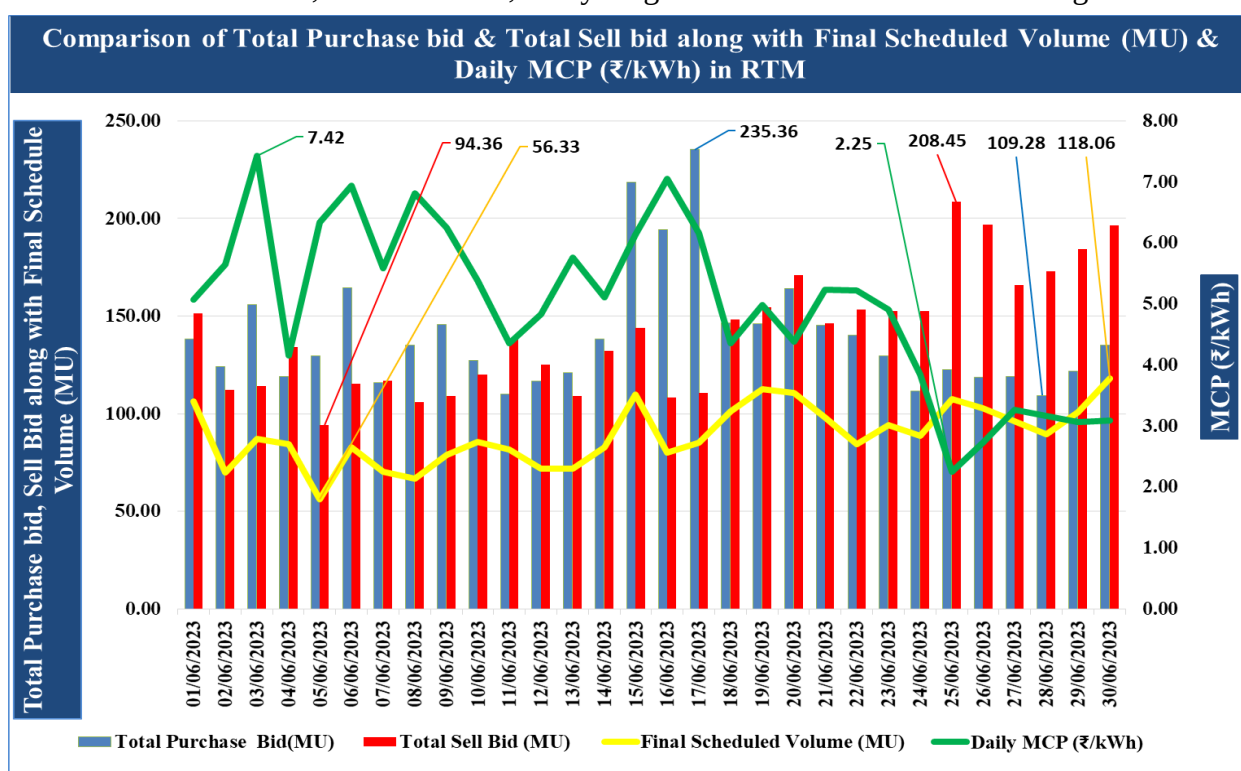


Figure-6

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

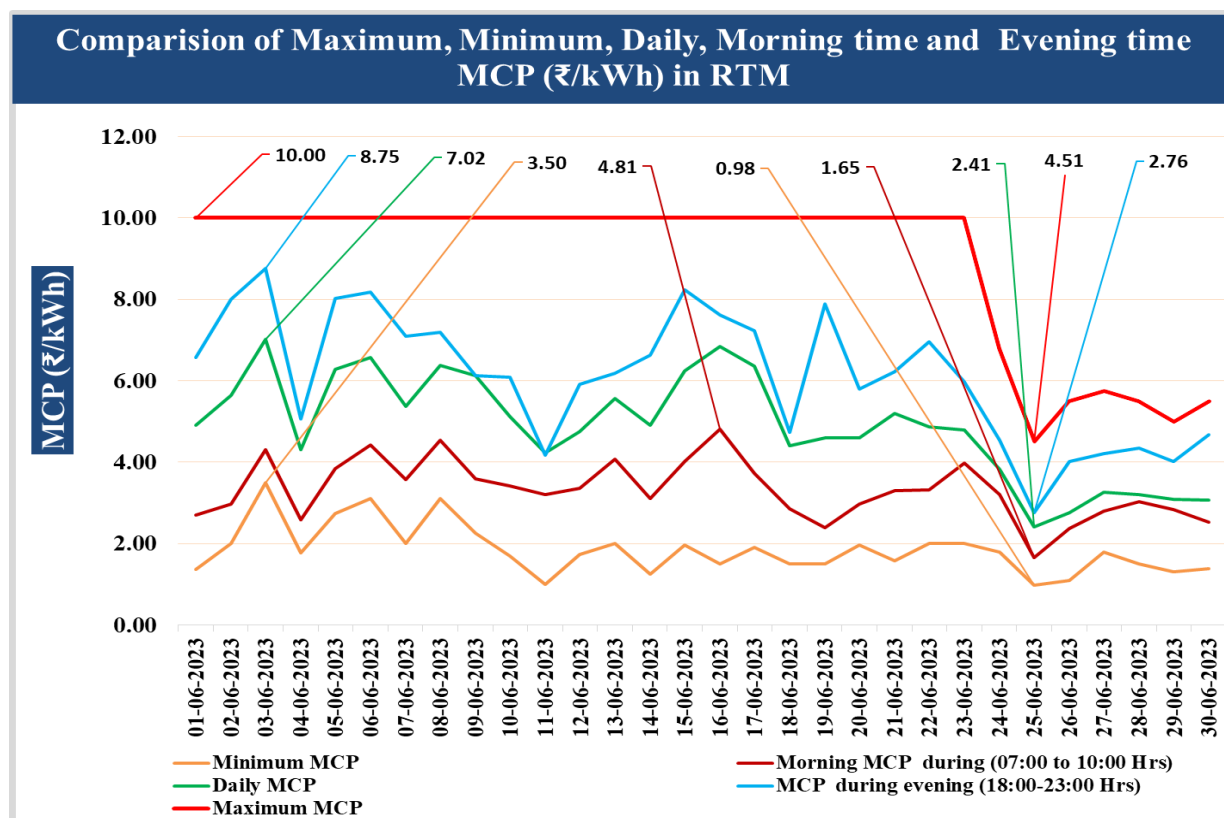


Figure-7

10.5. The Market Clearing Price duration curves for time block wise MCP for the month of June, 2023 is shown in **Figure 8**, whereas the day wise MCP duration curve for the period 1st April, 2023 to 30th June, 2023 is shown in **Figure 9**.

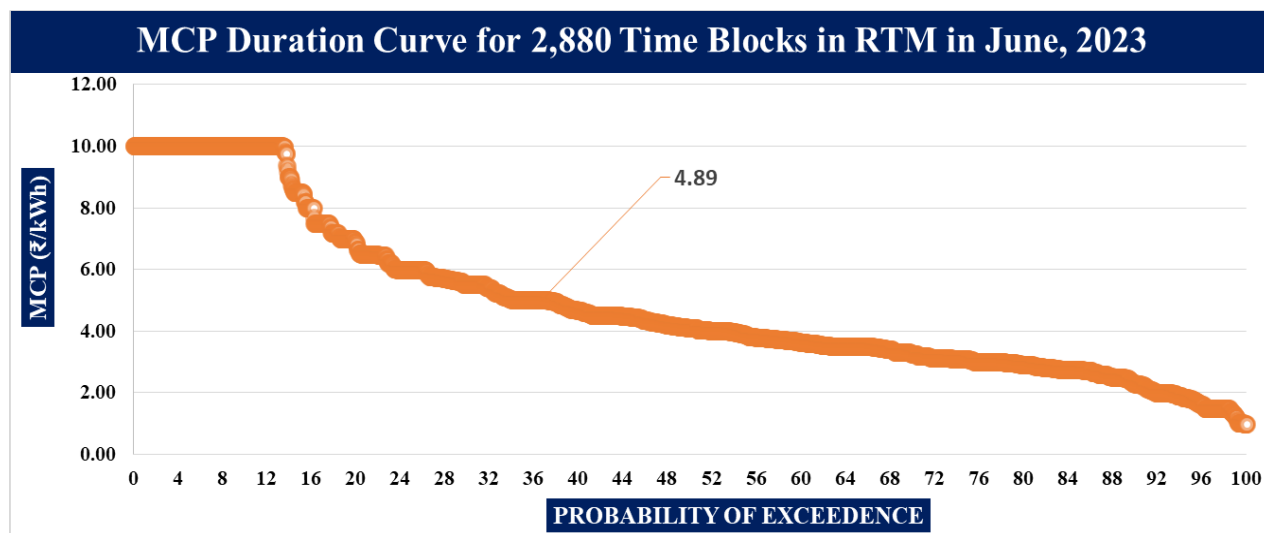


Figure-8

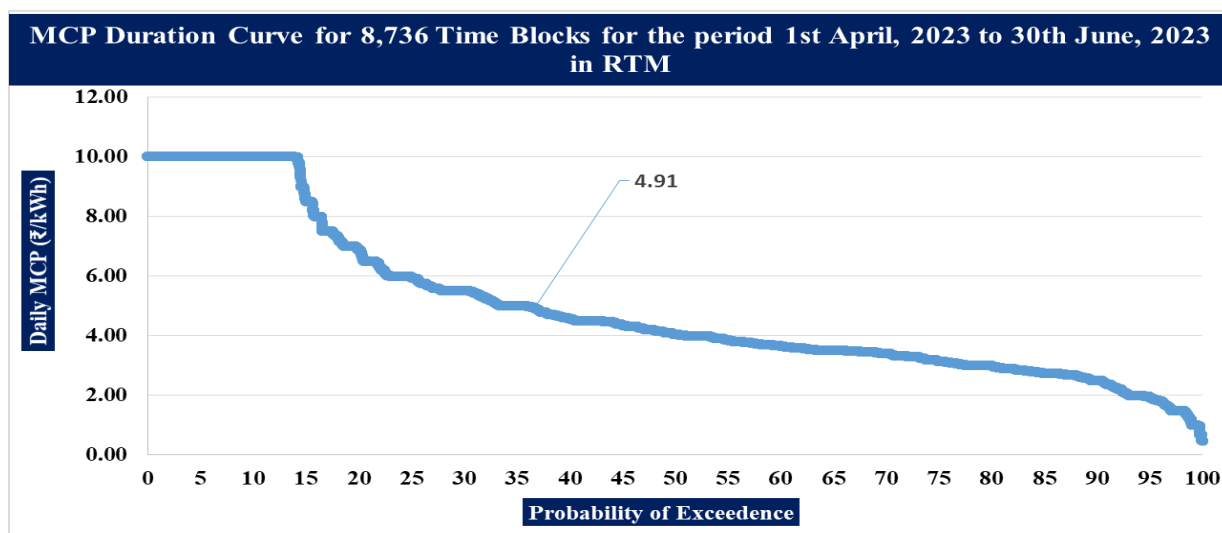


Figure-9

10.6. It can be seen in figure 8 above that in the MCP duration curve of June, 2023, for 37.00 % of the time the MCP was above the average MCP of the month (i.e. ₹ 4.89/kWh) and for 63.00 % 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 30th June, 2023 (figure 9) that, for 36.00 % of the time the Daily Avg. MCP was above the average MCP for the period (i.e. ₹ 4.91/kWh) and for 64.00 % of the time the Daily Avg. MCP was below the average MCP for the period.

10.7. In June, 2023, the maximum FSV occurred mostly during the **time period 23-01 Hrs** (on 10 no. of days). Whereas, the maximum MCP also occurred mostly during the **time period 00-01 Hrs** (on 18 no. of days). Similarly, the minimum FSV occurred mostly during the **time period 23-02 Hrs** (on 08 no. of days). Whereas, the minimum MCP occurred mostly during the **time period 09-11 Hrs** (on 10 no. of days).[Annexure X]

10.8. There was **no** real time curtailment in IEX in Real Time Market (RTM) during June, 2023 and no transaction happened in PXIL and HPX. Further, in May, 2023 **no** real time curtailment occurred in IEX & HPX, whereas, no transaction happened in PXIL. Similarly, in June, 2022, there was no real time curtailment in IEX & PXIL.

10.9. In the month of June, 2023 there was congestion of **0.70 MU** in IEX and no transaction happened in PXIL & HPX. Further, in the month of May, 2023, there was congestion of **4.95 MU** in IEX & there was no congestion in HPX and no transaction happened in PXIL. In the month of June, 2022, there was **0.98 MU** congestion in the transmission system in IEX and there was no congestion in PXIL.

10.10. The **top 10 sellers** on the power exchanges in **Real Time Market (RTM)** in the month of June, 2023 were **Madhya Pradesh, Rajasthan, Bihar, Delhi, NTPC BARH1 Unit 2, NPCIL KAKRAPAR ATOMIC POWER STATION UNITS 3 & 4, Himachal Pradesh, J&K, Punjab** and **Haryana**, which constituted **64.28 %** of the market volume. **[Annexure XI]**

10.11. The **top 10 buyers** on the power exchanges in **Telangana, Maharashtra, West Bengal, Punjab, Andhra Pradesh, Uttar Pradesh, Odisha, Kerala, Gujarat** and **Tamil Nadu**, which constituted **75.17 %** of the market volume. **[Annexure XI]**

10.12. The total volume of electricity purchased by Discoms/Licensees in RTM in the month of June, 2023 was **2,601.97 MU**, which constituted **97.26 %** 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 June, 2023 was **2,046.25 MU**, which constituted **76.49 %** 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 June, 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
Total April, 2023 – June, 2023		12,532.03	1.59	5.01	7.00	0	1.55

Annexure-II

Final Scheduled Volume in Term Ahead Market (TAM) for the months of April, 2023 to June, 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
Total April, 2023 – June, 2023		1,248.12	417.90	615.82	2,281.84

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

(i) Top five Buyers in Bilateral transactions

Entity Name	Direct		Entity Name	Through Traders	
	(MU)	Percent		(MU)	Percent
Uttar Pradesh	741.20	22.58%	Delhi	997.74	13.83%
Maharashtra	431.65	13.15%	Uttar Pradesh	883.40	12.24%
Punjab	405.61	12.36%	Haryana	807.23	11.19%
Haryana	332.60	10.13%	Gujarat	650.91	9.02%
Andhra Pradesh	255.60	7.79%	Tamil Nadu	601.68	8.34%
Total Volume	2,166.66	66.02%	Total Volume	3,940.96	54.61%
Total Volume in Bilateral	3,282.04		Total Volume in Bilateral	7,216.74	

(ii) Top five Sellers in Bilateral transactions

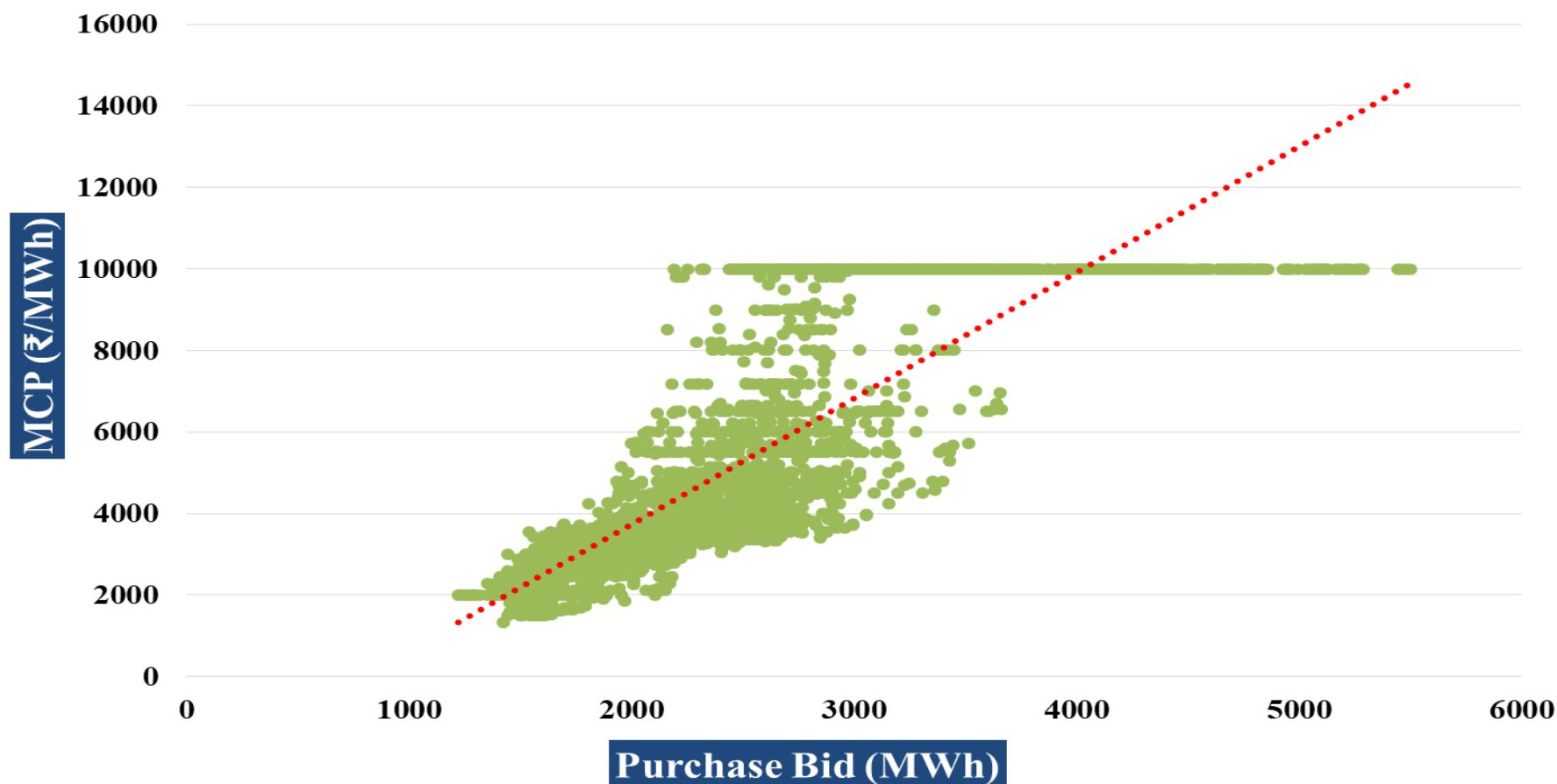
Entity Name	Direct		Entity Name	Through Traders	
	(MU)	Percent		(MU)	Percent
MP	376.80	11.48%	Himachal Pradesh	568.34	7.88%
Rajasthan	342.95	10.45%	RPREL	565.65	7.84%
NTPC Stations SR	256.75	7.82%	TEESTA HEP	457.22	6.34%
Karnataka	256.08	7.80%	JINDAL STAGE-II	440.24	6.10%
J & K	253.34	7.72%	RKM POWER	417.13	5.78%
Total Volume	1,485.93	45.27%	Total Volume	2,448.58	33.93%
Total Volume in Bilateral	3,282.04		Total Volume in Bilateral	7,216.74	

Annexure-IV**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)
01-06-2023	3.26	4.04	8.65	7.46	10.00	2.89	6.06	156.41
02-06-2023	2.90	3.73	8.27	6.86	10.00	2.64	5.64	170.59
03-06-2023	3.25	3.76	8.19	7.14	10.00	2.83	5.77	161.03
04-06-2023	3.39	3.42	7.33	7.87	10.00	2.70	5.69	155.37
05-06-2023	3.47	4.11	8.24	6.43	10.00	3.15	5.71	161.75
06-06-2023	3.72	4.59	8.91	8.04	10.00	3.40	6.53	130.21
07-06-2023	3.62	4.87	8.48	8.15	10.00	3.29	6.52	133.08
08-06-2023	3.53	4.97	8.46	7.30	10.00	3.32	6.28	139.28
09-06-2023	3.89	4.96	7.97	7.92	10.00	3.65	6.40	135.36
10-06-2023	3.98	4.33	8.21	8.83	10.00	3.55	6.55	126.29
11-06-2023	3.45	3.19	5.46	7.80	10.00	2.76	5.14	128.04
12-06-2023	3.40	4.12	7.47	6.70	10.00	2.96	5.59	138.43
13-06-2023	3.13	3.62	7.09	7.31	10.00	2.00	5.48	123.28
14-06-2023	3.10	3.67	7.24	7.79	10.00	2.00	5.67	128.00
15-06-2023	2.65	2.94	7.21	7.34	10.00	2.00	5.24	114.91
16-06-2023	3.14	3.45	8.27	8.31	10.00	2.00	6.02	117.13
17-06-2023	3.88	4.53	8.30	9.43	10.00	3.00	6.79	123.60
18-06-2023	2.57	2.98	6.66	8.44	10.00	1.33	5.42	120.16
19-06-2023	3.11	4.04	8.14	7.13	10.00	1.86	5.81	138.75
20-06-2023	3.28	3.41	8.17	6.70	10.00	2.11	5.54	144.08
21-06-2023	3.36	3.72	8.35	7.92	10.00	2.78	6.04	148.60
22-06-2023	3.23	3.36	8.08	7.69	10.00	2.73	5.78	142.18
23-06-2023	2.98	3.17	7.62	5.87	10.00	2.10	5.04	147.81
24-06-2023	3.18	3.26	7.88	7.08	10.00	2.70	5.52	152.69
25-06-2023	2.42	2.18	5.61	6.17	10.00	1.50	4.24	143.31
26-06-2023	1.72	2.00	4.98	3.30	10.00	1.50	3.08	130.68
27-06-2023	2.37	2.48	4.40	3.51	6.50	1.99	3.24	130.15
28-06-2023	2.66	2.27	5.45	4.03	9.16	1.99	3.64	127.56
29-06-2023	2.66	2.13	3.70	3.19	5.00	2.00	2.92	130.55
30-06-2023	2.76	2.40	5.42	4.14	9.06	2.00	3.73	124.03
Maximum	3.98	4.97	8.91	9.43	10.00	3.65	6.79	170.59
Minimum	1.72	2.00	3.70	3.19	5.00	1.33	2.92	114.91
Average	3.13	3.52	7.27	6.86	9.66	2.49	5.37	137.44

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

Comparison of MCP w.r.t. Purchase Bid for 2,880 Time Blocks during the month of June, 2023 in DAM



Time Blocks during the Month [96 time blocks in a day x 30 days = 2,880]

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
01-06-2023	17:45 - 18:00	1.93	00:00 - 00:15	10.00	23:15 - 23:30	1.28	08:00 - 08:15	2.89
02-06-2023	17:45 - 18:00	2.11	00:00 - 00:15	10.00	23:15 - 23:30	1.40	08:00 - 08:15	2.64
03-06-2023	05:00 - 05:15	1.92	00:00 - 00:15	10.00	21:45 - 22:00	1.36	08:00 - 08:15	2.83
04-06-2023	07:00 - 07:15	1.92	00:00 - 00:15	10.00	10:00 - 10:15	1.32	10:00 - 10:15	2.70
05-06-2023	18:45 - 19:00	2.24	00:00 - 00:15	10.00	23:45 - 24:00	1.28	08:00 - 08:15	3.15
06-06-2023	15:30 - 15:45	1.89	00:00 - 00:15	10.00	23:30 - 23:45	0.69	08:00 - 08:15	3.40
07-06-2023	14:45 - 15:00	1.85	00:00 - 00:15	10.00	23:00 - 23:15	0.62	08:00 - 08:15	3.29
08-06-2023	14:15 - 14:30	2.12	00:00 - 00:15	10.00	23:30 - 23:45	0.56	08:15 - 08:30	3.32
09-06-2023	14:15 - 14:30	1.93	00:00 - 00:15	10.00	23:00 - 23:15	0.80	07:30 - 07:45	3.65
10-06-2023	07:00 - 07:15	1.84	00:00 - 00:15	10.00	21:45 - 22:00	0.63	08:00 - 08:15	3.55
11-06-2023	06:15 - 06:30	1.67	00:00 - 00:15	10.00	17:45 - 18:00	1.09	13:00 - 13:15	2.76
12-06-2023	14:45 - 15:00	1.95	00:00 - 00:15	10.00	22:45 - 23:00	1.06	09:30 - 09:45	2.96
13-06-2023	15:00 - 15:15	1.73	00:00 - 00:15	10.00	22:15 - 22:30	0.98	09:00 - 09:15	2.00
14-06-2023	06:15 - 06:30	1.76	00:00 - 00:15	10.00	22:45 - 23:00	0.84	09:00 - 09:15	2.00
15-06-2023	06:00 - 06:15	1.53	00:00 - 00:15	10.00	22:45 - 23:00	0.90	09:00 - 09:15	2.00
16-06-2023	15:30 - 15:45	1.73	00:00 - 00:15	10.00	22:30 - 22:45	0.73	09:00 - 09:15	2.00
17-06-2023	14:45 - 15:00	1.92	00:00 - 00:15	10.00	21:45 - 22:00	0.77	08:30 - 08:45	3.00
18-06-2023	05:00 - 05:15	1.72	00:00 - 00:15	10.00	21:45 - 22:00	0.85	09:00 - 09:15	1.33
19-06-2023	15:00 - 15:15	2.25	00:00 - 00:15	10.00	21:45 - 22:00	0.78	08:45 - 09:00	1.86
20-06-2023	15:15 - 15:30	2.03	00:00 - 00:15	10.00	22:45 - 23:00	0.88	08:45 - 09:00	2.11
21-06-2023	14:45 - 15:00	2.16	00:00 - 00:15	10.00	23:00 - 23:15	0.95	08:30 - 08:45	2.78
22-06-2023	07:15 - 07:30	2.22	00:00 - 00:15	10.00	21:45 - 22:00	0.81	08:30 - 08:45	2.73
23-06-2023	01:15 - 01:30	1.81	00:00 - 00:15	10.00	21:00 - 21:15	1.29	08:45 - 09:00	2.10
24-06-2023	18:15 - 18:30	1.87	00:00 - 00:15	10.00	21:45 - 22:00	1.14	09:00 - 09:15	2.70
25-06-2023	02:00 - 02:15	1.92	00:00 - 00:15	10.00	12:30 - 12:45	1.19	08:45 - 09:00	1.50
26-06-2023	18:30 - 18:45	1.62	22:30 - 22:45	10.00	00:45 - 01:00	0.93	08:45 - 09:00	1.50
27-06-2023	12:00 - 12:15	1.65	23:15 - 23:30	6.50	01:45 - 02:00	1.00	08:45 - 09:00	1.99
28-06-2023	07:30 - 07:45	1.85	21:45 - 22:00	9.16	02:15 - 02:30	0.99	13:00 - 13:15	1.99
29-06-2023	06:45 - 07:00	1.88	22:30 - 22:45	5.00	01:00 - 01:15	1.05	13:00 - 13:15	2.00
30-06-2023	07:00 - 07:15	1.91	22:45 - 23:00	9.06	03:00 - 03:15	1.06	13:00 - 13:15	2.00

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

Annexure-VII

Sellers and Buyers in Day Ahead Market (DAM) in the month of June, 2023						
S. No.	Entity Name	Sell		Entity Name	Purchase	
		(MU)	Percent (%)		(MU)	Percent (%)
1	Delhi	295.43	7.16%	Maharashtra	817.83	19.83%
2	Chhattisgarh	289.92	7.03%	West Bengal	710.08	17.22%
3	Rajasthan	274.29	6.65%	Andhra Pradesh	382.26	9.27%
4	Uttar Pradesh	219.15	5.31%	Punjab	354.76	8.60%
5	Himachal Pradesh	212.38	5.15%	Gujarat	327.28	7.94%
6	Punjab	198.84	4.82%	Telangana	187.53	4.55%
7	Haryana	181.57	4.40%	Tamil Nadu	169.76	4.12%
8	JITPL	157.12	3.81%	Uttar Pradesh	162.75	3.95%
9	Sikkim Urja	141.92	3.44%	Assam	159.62	3.87%
10	MB Power	129.72	3.15%	Kerala	128.45	3.12%
11	Bihar	119.44	2.90%	Daman & Diu - Dadra	114.24	2.77%
12	NVVN (SNA) -	118.36	2.87%	Jharkhand	98.82	2.40%
13	Raipur Energen	116.26	2.82%	Haryana	50.39	1.22%
14	Jaypee Nigrie	106.08	2.57%	Uttarakhand	48.52	1.18%
15	Mahan Energy	91.38	2.22%	NVVN (SNA) - NEA	46.16	1.12%
16	Madhya Pradesh	90.94	2.21%	Himachal Pradesh	43.91	1.06%
17	Jindal Power Ltd.	88.39	2.14%	J&K	34.93	0.85%
18	Jindal Steel	87.00	2.11%	Odisha	32.35	0.78%
19	Sembcorp Gayatri	86.16	2.09%	Rajasthan	31.58	0.77%
20	Karnataka	73.76	1.79%	Meghalaya	31.17	0.76%
21	Assam	60.62	1.47%	Goa WR	27.61	0.67%
22	DB Power	59.35	1.44%	Madhya Pradesh	23.46	0.57%
23	Jindal Power	57.09	1.38%	NEA-NR	22.25	0.54%
24	Tamil Nadu	53.85	1.31%	ArcelorMittal Nippon	21.90	0.53%
25	SKS Power	50.58	1.23%	Goa SR	20.67	0.50%
26	AD Hydro	49.94	1.21%	Railways	16.00	0.39%
27	ACBIL	49.51	1.20%	Karnataka	15.16	0.37%
28	Gujarat	45.12	1.09%	Bihar	13.60	0.33%
29	Maharashtra	43.49	1.05%	DVC	8.26	0.20%
30	Telangana	42.73	1.04%	Tripura	7.93	0.19%
31	RKM Power	35.93	0.87%	Chhattisgarh	7.37	0.18%
32	Andhra Pradesh	35.79	0.87%	Chandigarh	1.98	0.05%
33	Odisha	31.38	0.76%	Delhi	1.44	0.03%
34	Chandigarh	30.50	0.74%	Arunachal Pradesh	1.36	0.03%
35	Karcham Wangtoo	28.36	0.69%	BHARAT	1.12	0.03%
36	Jhabua Power	27.52	0.67%	Nagaland	0.85	0.02%
37	Uttarakhand	26.94	0.65%	Pondicherry	0.04	0.00%
38	DVC	25.46	0.62%			
39	Costal Energen	23.42	0.57%			
40	Sainj HEP	21.69	0.53%			
41	Pondicherry	20.51	0.50%			
42	Renew Surya Ravi	19.94	0.48%			
43	Sembcorp Energy	15.03	0.36%			
44	Maruti Clean Coal	13.46	0.33%			
45	Shree Cement	13.45	0.33%			

46	Arunachal Pradesh	12.05	0.29%			
47	Adani Green	10.99	0.27%			
48	Jharkhand	10.13	0.25%			
49	GMR Warora	10.04	0.24%			
50	J&K	9.97	0.24%			
51	Meghalaya	9.63	0.23%			
52	Raigarh Energy	7.91	0.19%			
53	Sikkim	7.75	0.19%			
54	Goa WR	7.46	0.18%			
55	Dikchu	7.24	0.18%			
56	Chuzachen	6.49	0.16%			
57	Mizoram	6.37	0.15%			
58	TRN Energy	5.78	0.14%			
59	Dhariwal ISTS	4.98	0.12%			
60	Lanco Budhil	4.96	0.12%			
61	Ostro Kannada	4.41	0.11%			
62	Singoli Bhagwati	4.33	0.10%			
63	Ramagundam	4.05	0.10%			
64	KSK Mahanadi	3.57	0.09%			
65	Adhunik Power	3.41	0.08%			
66	Sorang HEP,	3.33	0.08%			
67	Palatana	3.08	0.07%			
68	Kerala	3.00	0.07%			
69	Nagaland	2.92	0.07%			
70	DHARIWAL STU	2.89	0.07%			
71	West Bengal	2.02	0.05%			
72	Manipur	1.55	0.04%			
73	Bongaigaon	1.24	0.03%			
74	Simhapuri Energy	1.09	0.03%			
75	GMR Kamalanga	0.71	0.02%			
76	SBSR Power	0.16	0.00%			
77	Farakka	0.02	0.00%			
78	Talcher	0.01	0.00%			
Total Volume of top 10		2,100.35	50.94%	Total Volume of top 10	3,400.31	82.46%
Total Volume in PXs		4,123.36		Total Volume in PXs	4,123.36	

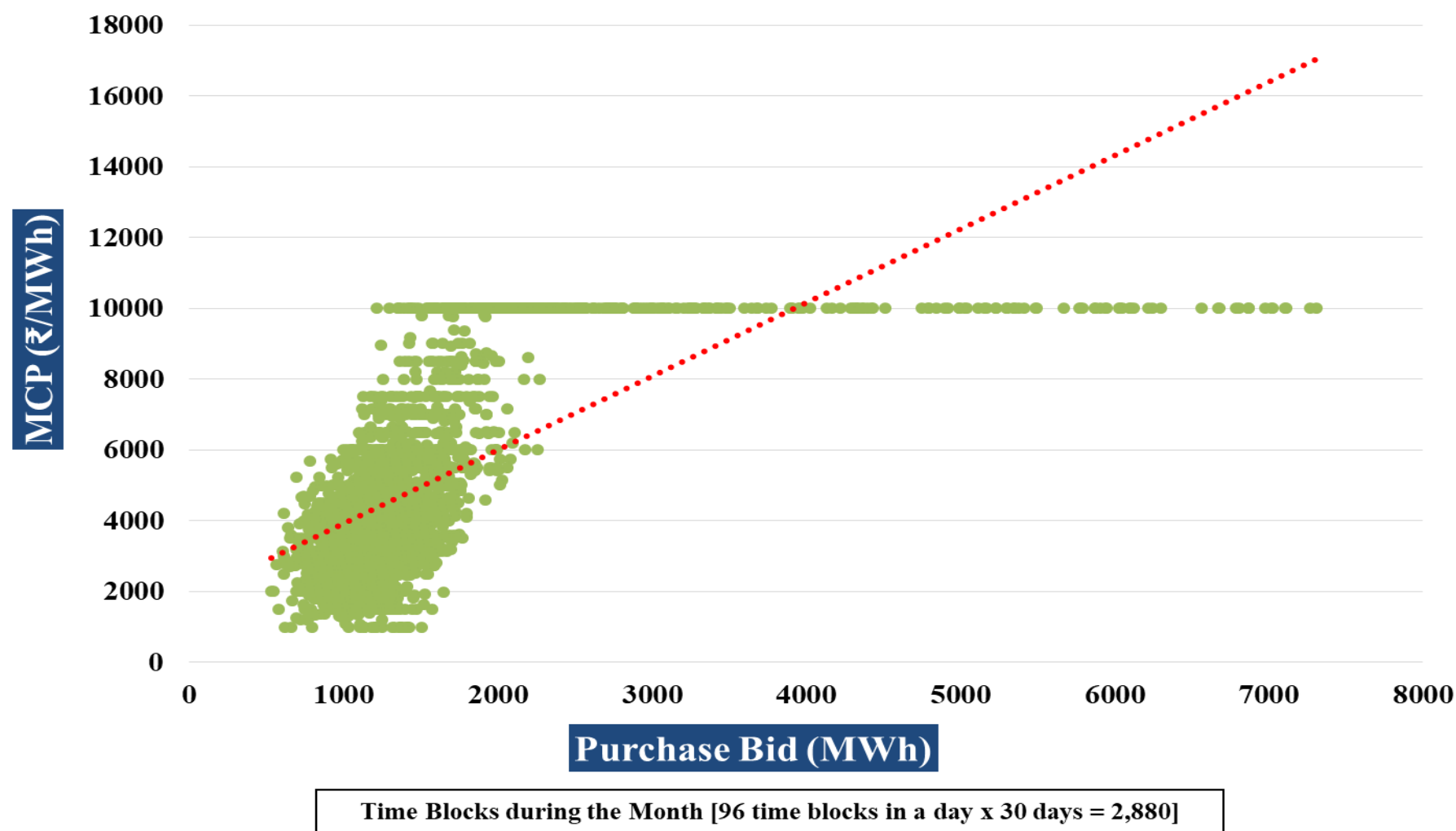
Evening, Day, Night, Morning, Maximum, Minimum, Average MCP (₹/kWh) and Final Scheduled Volume (MU) in RTM

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)
01-06-2023	2.70	3.46	6.57	6.17	10.00	1.37	4.90	106.41
02-06-2023	2.97	3.94	8.00	6.83	10.00	2.00	5.63	69.74
03-06-2023	4.31	6.35	8.75	7.77	10.00	3.50	7.02	87.06
04-06-2023	2.58	3.01	5.07	5.93	10.00	1.78	4.31	84.56
05-06-2023	3.84	5.13	8.01	7.34	10.00	2.74	6.28	56.33
06-06-2023	4.42	5.82	8.18	7.20	10.00	3.10	6.58	82.68
07-06-2023	3.56	4.63	7.10	5.66	10.00	2.00	5.37	70.44
08-06-2023	4.54	5.04	7.19	8.04	10.00	3.10	6.37	66.92
09-06-2023	3.60	5.64	6.13	8.03	10.00	2.26	6.12	78.71
10-06-2023	3.41	3.75	6.08	6.68	10.00	1.70	5.13	85.49
11-06-2023	3.19	2.69	4.17	6.44	10.00	1.00	4.24	81.54
12-06-2023	3.35	3.49	5.91	5.86	10.00	1.74	4.76	71.68
13-06-2023	4.07	4.14	6.18	7.32	10.00	2.00	5.57	71.77
14-06-2023	3.11	3.53	6.63	5.87	10.00	1.24	4.92	82.64
15-06-2023	4.02	4.15	8.24	7.87	10.00	1.96	6.23	109.71
16-06-2023	4.81	4.70	7.62	9.45	10.00	1.50	6.84	80.04
17-06-2023	3.72	4.45	7.22	9.02	10.00	1.90	6.35	85.01
18-06-2023	2.86	2.89	4.73	6.55	10.00	1.50	4.41	101.27
19-06-2023	2.39	3.65	7.88	3.96	10.00	1.50	4.59	112.78
20-06-2023	2.98	3.90	5.80	5.17	10.00	1.97	4.59	110.72
21-06-2023	3.29	4.18	6.22	6.44	10.00	1.58	5.20	97.97
22-06-2023	3.33	3.04	6.95	5.80	10.00	2.00	4.87	84.51
23-06-2023	3.97	3.32	5.96	5.75	10.00	2.00	4.80	94.14
24-06-2023	3.21	2.82	4.54	4.56	6.80	1.80	3.82	88.57
25-06-2023	1.65	1.31	2.76	3.63	4.51	0.98	2.41	107.32
26-06-2023	2.37	2.15	4.01	2.52	5.50	1.10	2.76	102.99
27-06-2023	2.79	2.55	4.20	3.42	5.75	1.80	3.26	96.06
28-06-2023	3.04	2.45	4.34	3.06	5.50	1.50	3.20	89.32
29-06-2023	2.83	1.98	4.02	3.52	5.00	1.30	3.08	100.82
30-06-2023	2.52	2.15	4.67	2.90	5.50	1.38	3.06	118.06
Maximum	4.81	6.35	8.75	9.45	10.00	3.50	7.02	118.06
Minimum	1.65	1.31	2.76	2.52	4.51	0.98	2.41	56.33
Average	3.31	3.68	6.11	5.96	8.95	1.84	4.89	89.18

MCP: Market Clearing Price (₹/kWh)

FSV: Final Scheduled Volume (MU)

Comparison of MCP w.r.t. Purchase Bid for 2,880 Time Blocks during the month of June, 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
01-06-2023	13:30 - 13:45	1.46	00:15 - 00:30	10.00	08:45 - 09:00	0.73	08:00 - 08:15	1.37
02-06-2023	19:45 - 20:00	1.06	19:15 - 19:30	10.00	23:15 - 23:30	0.49	07:45 - 08:00	2.00
03-06-2023	17:00 - 17:15	1.60	00:00 - 00:15	10.00	00:00 - 00:15	0.41	10:00 - 10:15	3.50
04-06-2023	13:45 - 14:00	1.19	00:00 - 00:15	10.00	18:00 - 18:15	0.53	09:30 - 09:45	1.78
05-06-2023	10:15 - 10:30	0.81	00:00 - 00:15	10.00	06:45 - 07:00	0.29	10:15 - 10:30	2.74
06-06-2023	19:30 - 19:45	1.39	00:00 - 00:15	10.00	00:00 - 00:15	0.19	09:00 - 09:15	3.10
07-06-2023	23:15 - 23:30	1.03	22:30 - 22:45	10.00	19:15 - 19:30	0.42	07:45 - 08:00	2.00
08-06-2023	22:00 - 22:15	1.07	00:00 - 00:15	10.00	07:30 - 07:45	0.44	18:15 - 18:30	3.10
09-06-2023	16:30 - 16:45	1.47	00:00 - 00:15	10.00	09:30 - 09:45	0.43	18:15 - 18:30	2.26
10-06-2023	00:45 - 01:00	1.25	00:00 - 00:15	10.00	13:30 - 13:45	0.59	18:15 - 18:30	1.70
11-06-2023	16:00 - 16:15	1.17	00:00 - 00:15	10.00	19:45 - 20:00	0.56	17:15 - 17:30	1.00
12-06-2023	00:45 - 01:00	1.22	00:00 - 00:15	10.00	20:00 - 20:15	0.44	09:30 - 09:45	1.74
13-06-2023	22:45 - 23:00	1.22	00:00 - 00:15	10.00	19:15 - 19:30	0.45	09:45 - 10:00	2.00
14-06-2023	23:45 - 24:00	1.18	21:45 - 22:00	10.00	02:15 - 02:30	0.65	08:15 - 08:30	1.24
15-06-2023	07:30 - 07:45	1.64	00:00 - 00:15	10.00	23:45 - 24:00	0.90	09:00 - 09:15	1.96
16-06-2023	17:45 - 18:00	1.13	00:00 - 00:15	10.00	07:30 - 07:45	0.52	07:45 - 08:00	1.50
17-06-2023	17:00 - 17:15	1.37	00:00 - 00:15	10.00	01:15 - 01:30	0.50	18:00 - 18:15	1.90
18-06-2023	15:30 - 15:45	1.49	00:00 - 00:15	10.00	04:00 - 04:15	0.60	18:30 - 18:45	1.50
19-06-2023	23:45 - 24:00	1.71	19:00 - 19:15	10.00	03:15 - 03:30	0.81	08:30 - 08:45	1.50
20-06-2023	00:30 - 00:45	1.54	21:30 - 21:45	10.00	22:45 - 23:00	0.67	07:45 - 08:00	1.97
21-06-2023	01:15 - 01:30	1.32	00:00 - 00:15	10.00	15:45 - 16:00	0.81	09:00 - 09:15	1.58
22-06-2023	23:45 - 24:00	1.27	00:00 - 00:15	10.00	04:15 - 04:30	0.63	10:00 - 10:15	2.00
23-06-2023	23:45 - 24:00	1.44	00:00 - 00:15	10.00	04:30 - 04:45	0.66	18:00 - 18:15	2.00
24-06-2023	23:45 - 24:00	1.36	22:15 - 22:30	6.80	07:45 - 08:00	0.61	14:45 - 15:00	1.80
25-06-2023	17:00 - 17:15	1.62	01:30 - 01:45	4.51	01:00 - 01:15	0.67	09:45 - 10:00	0.98
26-06-2023	11:15 - 11:30	1.43	22:45 - 23:00	5.50	01:30 - 01:45	0.75	13:00 - 13:15	1.10
27-06-2023	17:00 - 17:15	1.31	23:15 - 23:30	5.75	04:45 - 05:00	0.72	13:00 - 13:15	1.80
28-06-2023	08:45 - 09:00	1.42	22:30 - 22:45	5.50	01:00 - 01:15	0.67	13:00 - 13:15	1.50
29-06-2023	15:30 - 15:45	1.38	21:15 - 21:30	5.00	06:00 - 06:15	0.76	13:00 - 13:15	1.30
30-06-2023	23:45 - 24:00	1.59	19:30 - 19:45	5.50	19:15 - 19:30	0.83	13:30 - 13:45	1.38

MCP: Market Clearing Price (₹/kWh)

FSV: Final Scheduled Volume (MU)

Sellers and Buyers in Real Time Market (RTM) in the month of June, 2023						
S. No.	Entity Name	Sell		Entity Name	Purchase	
		(MU)	Percent (%)		(MU)	Percent (%)
1	Madhya Pradesh	324.83	12.14%	Telangana	443.52	16.58%
2	Rajasthan	314.25	11.75%	Maharashtra	380.36	14.22%
3	Bihar	177.00	6.62%	West Bengal	248.18	9.28%
4	Delhi	161.17	6.02%	Punjab	188.15	7.03%
5	NTPC BARH1	159.98	5.98%	Andhra Pradesh	179.88	6.72%
6	NPCIL	157.27	5.88%	Uttar Pradesh	150.00	5.61%
7	Himachal	127.67	4.77%	Odisha	129.17	4.83%
8	J&K	116.66	4.36%	Kerala	101.61	3.80%
9	Punjab	102.68	3.84%	Gujarat	98.87	3.70%
10	Haryana	78.13	2.92%	Tamil Nadu	91.23	3.41%
11	Chhattisgarh	69.89	2.61%	Rajasthan	75.53	2.82%
12	West Bengal	61.95	2.32%	Assam	69.39	2.59%
13	Odisha	60.59	2.26%	Karnataka	57.19	2.14%
14	Karnataka	51.22	1.91%	Haryana	40.79	1.52%
15	Jharkhand	50.28	1.88%	Bihar	39.43	1.47%
16	Uttarakhand	49.44	1.85%	Jharkhand	39.37	1.47%
17	Assam	45.46	1.70%	Tripura	31.50	1.18%
18	Maharashtra	43.24	1.62%	Daman & Diu - Dadra	29.22	1.09%
19	Andhra Pradesh	42.48	1.59%	J&K	28.96	1.08%
20	Uttar Pradesh	36.09	1.35%	Madhya Pradesh	27.07	1.01%
21	Sikkim Urja	34.96	1.31%	Delhi	26.62	1.00%
22	Telangana	28.89	1.08%	Meghalaya	25.80	0.96%
23	Tamil Nadu	25.75	0.96%	DVC	25.66	0.96%
24	Sasan UMPP	22.25	0.83%	Chhattisgarh	23.78	0.89%
25	Kameng HEP	19.88	0.74%	Himachal Pradesh	22.56	0.84%
26	Jhabua Power	18.90	0.71%	BHARAT	20.08	0.75%
27	RKM Power	18.03	0.67%	ArcelorMittal Nippon	19.41	0.73%
28	SKS Power	16.64	0.62%	Jindal Power Ltd. Stg-II	14.03	0.52%
29	Manipur	15.35	0.57%	Railways	7.36	0.27%
30	TRN Energy	12.95	0.48%	Uttarakhand	7.34	0.27%
31	Gujarat	12.58	0.47%	Goa WR	6.73	0.25%
32	MB Power	12.02	0.45%	Nagaland	3.73	0.14%
33	Pondicherry	10.15	0.38%	Manipur	3.17	0.12%
34	Mahan Energy	10.03	0.37%	Goa SR	2.87	0.11%
35	Palatana	9.06	0.34%	Jindal Steel	2.81	0.10%
36	Saini HEP	9.05	0.34%	SKS Power	2.50	0.09%
37	Raipur Energen	8.86	0.33%	Jindal Power	2.36	0.09%
38	DVC	8.79	0.33%	Sikkim	2.17	0.08%
39	Tripura	8.11	0.30%	Simhapuri Energy	1.34	0.05%
40	Arunachal	6.52	0.24%	Arunachal Pradesh	1.24	0.05%
41	Sikkim	6.42	0.24%	Shree Cement	1.24	0.05%
42	Singoli Bhagwati	5.87	0.22%	Chandigarh	0.62	0.02%
43	Sorang HEP,	5.11	0.19%	Gandhar	0.54	0.02%
44	AD Hydro	5.00	0.19%	Jhabua Power	0.34	0.01%
45	Jindal Power	4.91	0.18%	Sainj HEP	0.32	0.01%

46	ACBIL	4.81	0.18%	Ratnagiri Gas & Power	0.31	0.01%
47	Karcham	4.70	0.18%	Kawas	0.26	0.01%
48	Kerala	4.56	0.17%	ACBIL	0.26	0.01%
49	NTPL	4.26	0.16%	Pondicherry	0.25	0.01%
50	Shree Cement	4.20	0.16%	Mahan Energy Limited	0.12	0.00%
51	Sembcorp	4.13	0.15%			
52	Simhapuri	3.85	0.14%			
53	GMR Warora	3.66	0.14%			
54	Jindal Steel	3.58	0.13%			
55	Ostro Kannada	3.45	0.13%			
56	Dikchu	3.08	0.12%			
57	Rihand-III	2.79	0.10%			
58	Unchahar-IV	2.76	0.10%			
59	Rihand-I	2.68	0.10%			
60	Singrauli	2.67	0.10%			
61	Nagaland	2.63	0.10%			
62	Tashiding HEP	2.55	0.10%			
63	Nabinagar Power	2.55	0.10%			
64	Jindal Power	2.51	0.09%			
65	Rihand-II	2.38	0.09%			
66	DGEN Mega	2.28	0.09%			
67	Jorethang	2.12	0.08%			
68	Maruti Clean	2.04	0.08%			
69	Sembcorp	2.02	0.08%			
70	Adhunik Power	1.99	0.07%			
71	BALCO 2	1.94	0.07%			
72	NTPC	1.72	0.06%			
73	Daman & Diu -	1.64	0.06%			
74	Kahalgaon	1.55	0.06%			
75	Kahalgaon-II	1.55	0.06%			
76	Bongaigaon	1.47	0.05%			
77	Barh Stg-2	1.28	0.05%			
78	NTPC Kudgi	1.04	0.04%			
79	DB Power	1.03	0.04%			
80	Talcher Stg-2	0.98	0.04%			
81	Chandigarh	0.95	0.04%			
82	Renew Surya	0.93	0.03%			
83	Mouda Stg-2	0.91	0.03%			
84	Darlipalli	0.88	0.03%			
85	Dadri TPS	0.78	0.03%			
86	Talcher	0.75	0.03%			
87	Mouda Stg-1	0.72	0.03%			
88	Simhadri Stg-2	0.71	0.03%			
89	Meghalaya	0.69	0.03%			
90	Khargone STPP	0.58	0.02%			
91	Farakka	0.56	0.02%			
92	AGBPP	0.51	0.02%			
93	Unchahar-II	0.51	0.02%			
94	Vindhyachal stg-	0.41	0.02%			
95	Tanda Stg-2	0.37	0.01%			

96	Sipat Stg-2	0.36	0.01%			
97	Farakka Stg 3	0.36	0.01%			
98	Chuzachen	0.35	0.01%			
99	Coastal Gujrat	0.35	0.01%			
100	Lanco Budhil	0.34	0.01%			
101	Dadri Stg-2	0.34	0.01%			
102	Vindhyachal stg-	0.32	0.01%			
103	IL&FS	0.32	0.01%			
104	NTPC Lara	0.29	0.01%			
105	NTPC Sholapur	0.29	0.01%			
106	JITPL	0.26	0.01%			
107	Raigarh Energy	0.24	0.01%			
108	Ramagundam	0.23	0.01%			
109	Korba	0.23	0.01%			
110	Vindhyachal stg-	0.22	0.01%			
111	Goa WR	0.21	0.01%			
112	AGTPP	0.19	0.01%			
113	Unchahar-I	0.18	0.01%			
114	Vindhyachal stg-	0.18	0.01%			
115	Costal Energen	0.14	0.01%			
116	Barh STPS Stg -	0.13	0.01%			
117	Jaypee Nigrie	0.11	0.00%			
118	Vindhyachal stg-	0.09	0.00%			
119	Unchahar-III	0.09	0.00%			
120	Sipat Stg-1	0.09	0.00%			
121	KBUNL(MTPS-	0.07	0.00%			
122	Simhadri Stg-1	0.07	0.00%			
123	Korba Stg 3	0.06	0.00%			
124	GMR	0.05	0.00%			
125	Ramagundam	0.03	0.00%			
Total Volume of top 10		1,719.63	64.28%	Total Volume of top 10	2,010.98	75.17%
Total Volume in PXs		2,675.25		Total Volume in PXs	2,675.25	

Cross Border Electricity Transactions in Day Ahead Market (DAM) in IEX with Nepal and Bhutan during the month of June, 2023			
S. No	Delivery Date	Buy Volume By Nepal (MU)	Sell Volume By Nepal (MU)
1	01-06-2023	4.58	0.00
2	02-06-2023	4.86	0.00
3	03-06-2023	4.95	0.00
4	04-06-2023	5.24	0.00
5	05-06-2023	5.55	0.00
6	06-06-2023	5.10	0.00
7	07-06-2023	4.78	0.00
8	08-06-2023	4.82	0.00
9	09-06-2023	5.12	0.00
10	10-06-2023	4.38	0.00
11	11-06-2023	3.48	0.60
12	12-06-2023	0.65	0.71
13	13-06-2023	0.65	5.72
14	14-06-2023	1.11	7.90
15	15-06-2023	1.13	8.10
16	16-06-2023	0.98	7.52
17	17-06-2023	0.93	5.74
18	18-06-2023	1.07	3.86
19	19-06-2023	0.98	4.13
20	20-06-2023	1.02	6.72
21	21-06-2023	0.97	7.19
22	22-06-2023	0.99	7.12
23	23-06-2023	1.15	6.09
24	24-06-2023	0.48	7.52
25	25-06-2023	0.47	7.50
26	26-06-2023	0.24	5.89
27	27-06-2023	0.68	5.20
28	28-06-2023	0.68	5.94
29	29-06-2023	0.68	7.51
30	30-06-2023	0.68	7.42
Total		68.41	118.36
Grand Total		186.77	

-: No transaction took place

Note: Cross Border Transactions of Electricity of **186.77 MU (i.e. 68.41 MU buy by Nepal and 118.36 MU sell by Nepal)** happened during June, 2023 in IEX, which is included in DAM Volume of June, 2023 in IEX.

Analysis for change in trend of Final Scheduled Volume in DAM on 4th Sunday of June, 2023 (i.e. 25th June, 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 June, 2023, it is observed that on fourth Monday (26th June, 2023), FSV showed decreasing trend in comparison to fourth Sunday (25th June, 2023).

- (i) On fourth Monday (26th June, 2023), although there was increase in purchase on power exchange by some of the States in comparison to fourth Sunday (25th June, 2023) by **25.32 MU** [i.e. West Bengal (6.48 MU), Gujarat (4.78 MU), Daman & Diu - Dadra & Nagar Haveli (2.44 MU), Kerala (2.40 MU) and Tamil Nadu (1.75 MU), etc.], there was also decrease in purchase on power exchange by some of the States by **37.95 MU** [i.e. Maharashtra (19.33 MU), Punjab (15.20 MU), Haryana (2.75 MU), NEA-NR (0.23 MU) and Goa WR (0.21 MU), etc.]. This resulted in an overall decrease in FSV by **12.63 MU** on Monday (26th June, 2023) as compared to Sunday (25th June, 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).