



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: अप्रैल, 2023 माह की मार्केट मॉनिटरिंग रिपोर्ट

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

महोदय/ Sir,

अप्रैल, 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 April, 2023 is enclosed herewith for kind information and perusal.

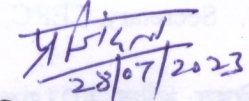
अप्रैल, 2023 माह के दौरान मार्केट के संचालन की मुख्य विशेषताएं इस प्रकार रही। Key highlights of the market operation during April, 2023 are as under:

- (i) अप्रैल, 2023 माह में देश में कुल 132,151 MU विद्युत का कारोबार किया गया, जिसमें से 63,774 MU का कारोबार अंतर्राज्यीय पारेषण प्रणाली (Inter State Transmission System) के माध्यम से किया गया था और शेष राज्य नियंत्रित उत्पादन स्टेशनों से अंतराराज्यीय पारेषण प्रणाली (Intra State Transmissions System) के माध्यम से किया गया। In the month of April, 2023 a total of 132,151 MU of electricity was transacted in the country out of which 63,774 MU was transacted through ISTS, and the remaining through state controlled generating stations through Intra State Transmissions System.
- (ii) अल्पावधि मार्केट के अंतर्गत कुल 21,389 MU का कारोबार किया गया था, जिसमें से 9,099 MU पावर एक्सचेंजों के माध्यम से कारोबार किया गया और शेष द्विपक्षीय कारोबार और विचलन (deviations) के रूप में हुआ। इस प्रकार अल्पावधि कारोबार, अप्रैल, 2023 माह में ट्रेड की गई विद्युत की कुल मात्रा का 16.19 % था और 6.89 % पावर एक्सचेंजों के माध्यम से रहा। A total of 21,389 MU was transacted under Short

Term Market, out of which 9,099 MU was transacted through Power Exchanges and remaining happened as bilateral transactions & deviations. Thus, the total short term trade in April, 2023 was 16.19 % of total volume of electricity traded in April, 2023 and 6.89 % 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 33.54 % रहा, जिसमें से पावर एक्सचेंजों के माध्यम से कारोबार 14.27 % रहा। If we compare these transactions with respect to the electricity supplied through ISTS, the short term transactions constitutes about 33.54 % of ISTS transactions, out of which transaction through the power exchanges constitutes 14.27 %.

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>)



सत्यमेव जयते

मासिक मार्केट मॉनिटरिंग रिपोर्ट - अप्रैल, 2023

Monthly Market Monitoring Report April, 2023



भारत सरकार/ Government of India

विद्युत मंत्रालय/ Ministry of Power

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

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

अप्रैल, 2023 माह के लिए सारांश Summary for Month: April, 2023

भारत में विद्युत एक्सचेंजों पर विद्युत के व्यापार का सारांश

Summary of Electricity Transactions on Power Exchanges in India

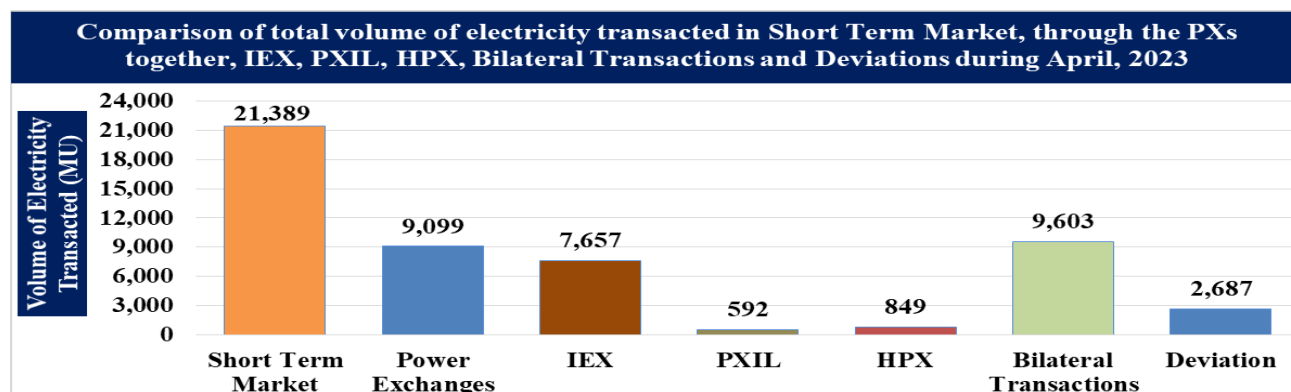
- अप्रैल, 2023 के दौरान विद्युत एक्सचेंजों (यानी आईईएक्स, पीएक्सआईएल और एचपीएक्स) के माध्यम से कुल **9,099 MU** विद्युत का कारोबार किया गया। विद्युत की यह मात्रा डिलीवरी की तारीख के आधार पर है और इसमें DAM, GDAM, RTM, TAM, DAC & ID, GTAM और G-DAC & ID मार्केट खंडों के माध्यम से कारोबार शामिल हैं। A total volume of **9,099 MU** electricity was transacted through power exchanges i.e. IEX, PXIL & HPX, during the month of April, 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	4,409	5.08	56.64	0.00
GDAM	158	5.25	1.16	0.00
RTM	2,153	4.95	4.62	0.00
TAM	751	9.51	9.96	9.96
DAC & ID	1,503	6.12	4.11	4.11
GTAM	48	7.34	0.00	0.00
G-DAC & ID	78	6.14	0.53	0.53
Total in PXs	9,099	5.61*	77.02	14.60

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

- द्विपक्षीय व्यापार के तहत कुल **9,603 MU** विद्युत का कारोबार किया गया और **2,687 MU** को विचलन के रूप में स्थानांतरित किया गया। इस प्रकार कुल **21,389 MU** विद्युत का कारोबार अल्पावधि व्यापार के रूप में किया गया था। अप्रैल, 2023 के महीने में देश में कुल **132,151 MU** विद्युत की आपूर्ति की गई थी, इस प्रकार अप्रैल, 2023 माह में कारोबार की गई विद्युत की कुल मात्रा में अल्पावधि बाजार का हिस्सा **16.19 %** था।

Under the Bilateral trade a total of **9,603 MU** of electricity was transacted and **2,687 MU** was transferred as deviation. Thus a total of **21,389 MU** of electricity was transacted as short term trade. In the month of April, 2023 a total of **132,151 MU** of electricity was supplied in the country, thus the share of short term market in the total volume of electricity traded in April, 2023 was **16.19 %**.



- अप्रैल, 2023 के दौरान संचरण जाम की कुल मात्रा **77.02 MU** थी, जो की विद्युत एक्सचेंजों में कारोबार की गई विद्युत की कुल मात्रा का केवल 0.85 % है और अप्रैल, 2023 के महीने के दौरान आपूर्ति की गई कुल ऊर्जा का 0.06 % है।

The total volume of transmission congestion that happened during the month of April, 2023 was **77.02 MU** which is only 0.85 % of the total volume of electricity transacted in the power exchanges and 0.06 % of total energy supplied during the month of April, 2023.

DAM में **15** दिन अर्थात् दिनांक 3 एवं 17 से 30 अप्रैल, 2023, GDAM में **14** दिन अर्थात् दिनांक 17 से 30 अप्रैल, 2023, RTM में **23** दिन अर्थात् दिनांक 1 से 10, 12 से 16, 19 से 24, 26 एवं 27 अप्रैल, 2023, TAM में **2** दिन अर्थात् दिनांक 20 एवं 21 अप्रैल, 2023, DAC & ID में **7** दिन अर्थात् दिनांक 14, 15, 17, 18, 20, 21 एवं 23 अप्रैल, 2023 और G-DAC & ID में **2** दिन अर्थात् दिनांक 14 एवं 15 अप्रैल, 2023 को संचरण जाम देखा गया। जबकि GTAM में कोई संचरण जाम नहीं देखा गया। अप्रैल, 2023 माह के महीने में रिपोर्ट की गई वास्तविक समय में विद्युत कटौती की कुल मात्रा केवल **14.60 MU** थी।

Transmission congestion observed in DAM on 15 days i.e. 3rd & 17th to 30th April, 2023, GDAM on 14 days i.e. 17th to 30th April, 2023, RTM on 23 days i.e. 1st to 10th, 12th to 16th, 19th to 24th, 26th & 27th April, 2023, TAM on 2 days i.e. 20th & 21st April, 2023, DAC & ID on 7 days i.e. 14th, 15th, 17th, 18th, 20th, 21st & 23th April, 2023 and DAC & ID on 2 days i.e. 14th & 15th April, 2023. Whereas, there was no congestion happened in GTAM. The total volume of real time curtailment reported in the month of April, 2023 was only **14.60 MU**.

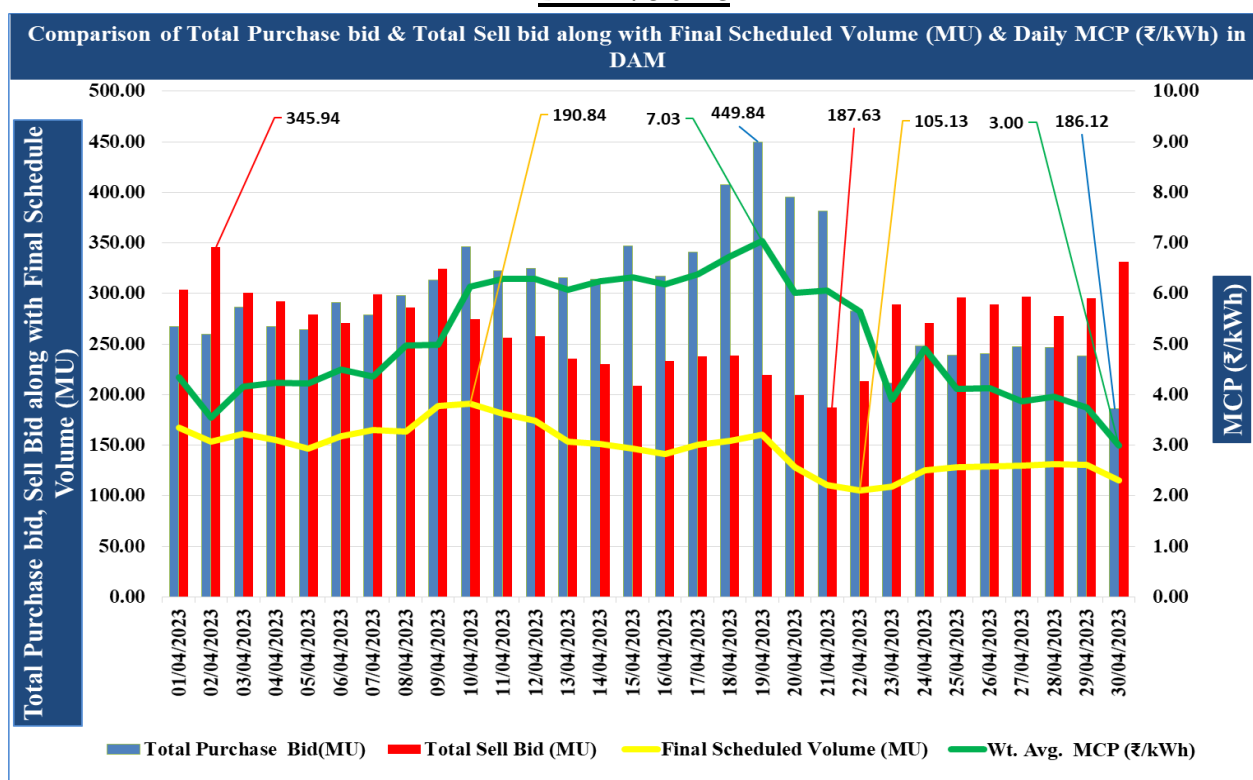
- अप्रैल, 2023 माह के दौरान अंतर्राज्यीय पारेषण प्रणाली (ISTS) में निर्धारित अनुसूचित विद्युत की कुल मात्रा **63,774 MU** थी। अप्रैल, 2023 के महीने में अल्पावधि बाजार में विद्युत का लेन-देन अंतर्राज्यीय पारेषण प्रणाली (ISTS) के माध्यम से अनुसूचित की गई कुल विद्युत की मात्रा का **33.54 %** रहा।

The total volume of electricity scheduled at ISTS during the month of April, 2023 was **63,774 MU**. The total volume of electricity transacted in the short term market was **33.54 %** of total volume schedule at ISTS in the month of April, 2023.

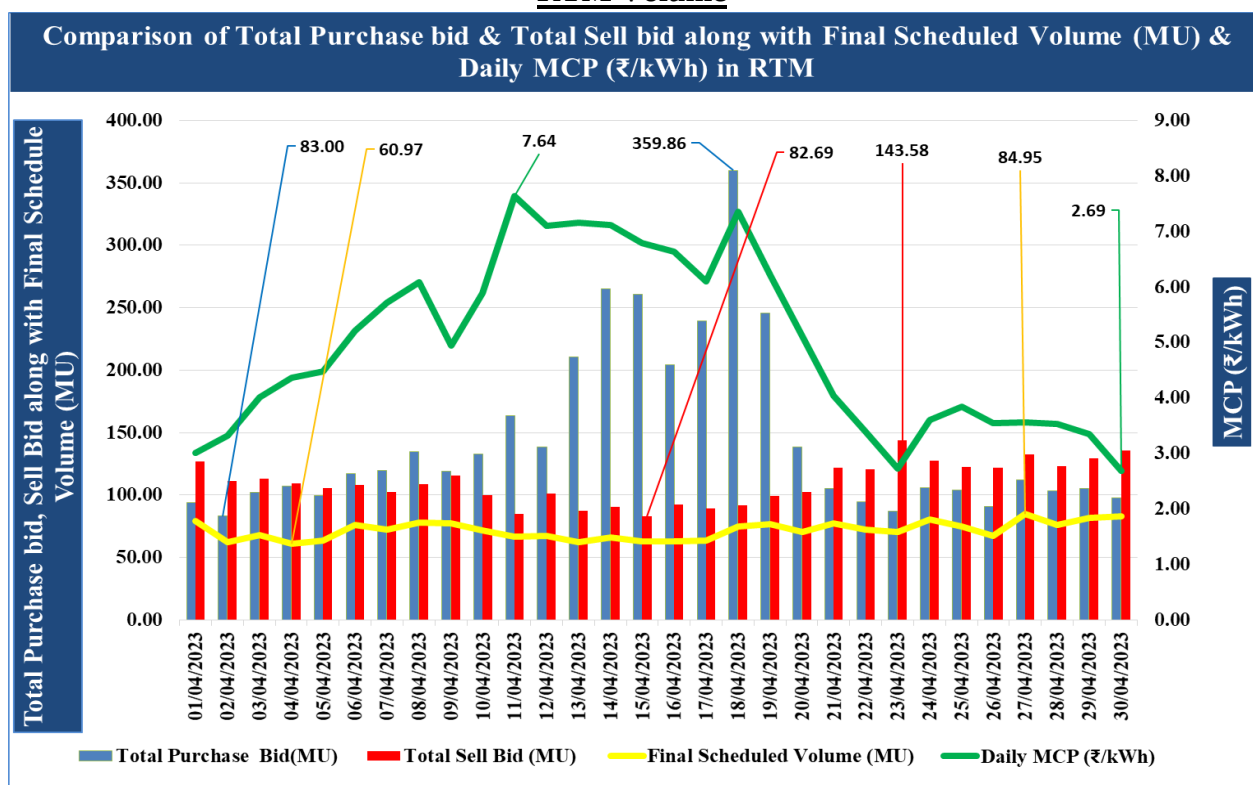
- अप्रैल, 2023 माह के दौरान DAM और RTM में विद्युत की खरीद और बिक्री बोलियों, अंतिम अनुसूचित मात्रा और दैनिक औसत MCP की भिन्नता निम्नलिखित चित्रों में दर्शाई गई है:

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

DAM Volume



RTM Volume

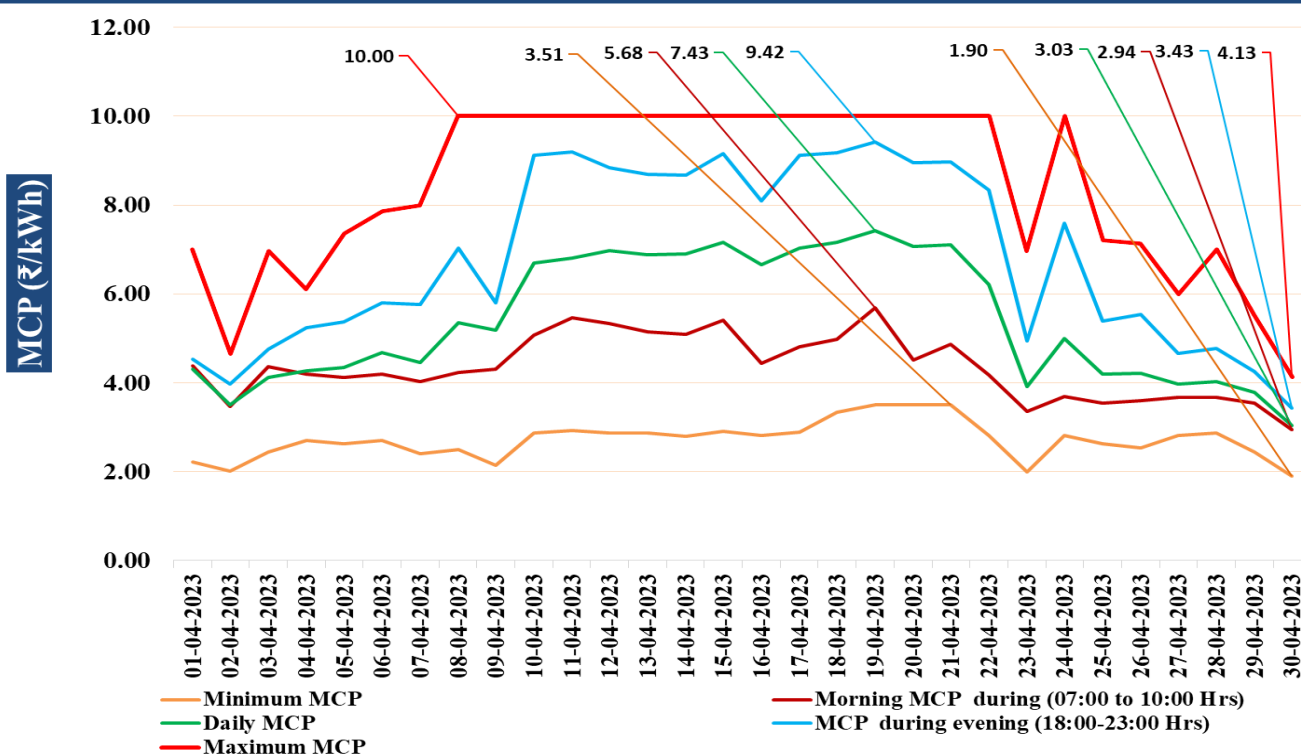


- अप्रैल, 2023 माह के दौरान DAM और RTM में अधिकतम, न्यूनतम, दैनिक, सुबह और शाम के समय MCP की भिन्नता निम्नलिखित चित्रों में दिखाई गई है:

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

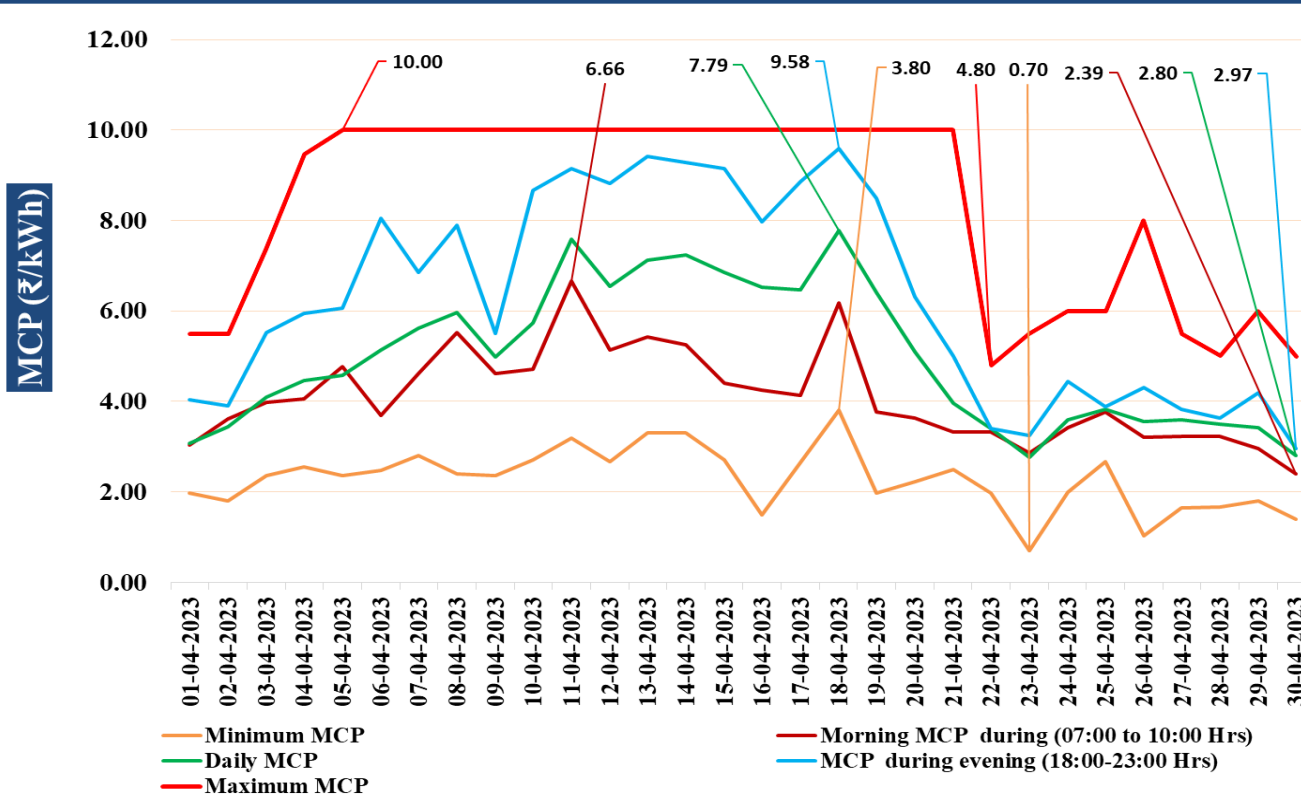
DAM Prices

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 and PXIL in the Day Ahead Market (DAM) in the month of April, 2023 was **4,408.93 MU**. The total energy supplied in the country during the month of April, 2023 was 132,151 MU. Thus, the volume of electricity transacted on the power exchanges in DAM during April, 2023 was 3.34 % of the total energy supplied in the country. Comparing with the total volume of electricity transacted in DAM during the past month i.e. March, 2023, it was **4,718.38 MU** which was 3.72 % of the total energy supplied (126,825 MU) in the country during March, 2023. Similarly, the total volume of electricity transacted in DAM during previous year i.e. April, 2022, was **4,113.65 MU** which was 3.12 % of the total energy supplied (132,028 MU) in the country during April, 2022.

1.2. The volume of electricity transacted on IEX during April, 2023 was **4,408.93 MU**. No transaction of electricity took place in PXIL & HPX. The volume of electricity transacted on IEX during March, 2023 was **4,718.38 MU**. No transaction of electricity took place in PXIL & HPX. The volume of electricity transacted on IEX during April, 2022, was **4,113.65 MU**. No transaction of electricity took place in PXIL.

1.3. The DAM volume for April, 2023 in IEX is inclusive of Cross Border Transactions of Electricity with Nepal and Bhutan (details given at **Annexure XII**), which was **230.13 MU** (i.e. 181.80 MU buy by Nepal and 48.33 MU buy by Bhutan).

1.4. The Average Market Clearing Price (MCP) on IEX during the month of April, 2023 was ₹ **5.08/kWh**, which shows a decrease of 5.93 % & 49.50 % when compared with average MCP's for the month of March, 2023 and April, 2022, which were ₹ **5.40/kWh** and ₹ **10.06/kWh**, respectively. On PXIL and HPX, no transaction of electricity took place during April, 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 April, 2023 as compared with March, 2023 and April, 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	April, 2023*	4408.93	105.13	190.84	146.96
	March, 2023*	4718.38	108.25	175.95	152.21
	%Change (Month over Month)	-6.56	-2.88	8.46	-3.45
	April, 2022*	4113.65	45.33	196.81	137.12
	%Change (Year over Year)	7.18	131.92	-3.03	7.18
PXIL	April, 2023	-	-	-	-
	March, 2023	-	-	-	-
	%Change (Month over Month)	NA	NA	NA	NA
	April, 2022	-	-	-	-
	%Change (Year over Year)	NA	NA	NA	NA
HPX	April, 2023	-	-	-	-
	March, 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 Avg. MCP (₹/kWh)		ACP (₹/kWh)		Monthly Avg. MCP (₹/kWh)
		Minimum	Maximum	Minimum	Maximum	Average
IEX	April, 2023	3.00	7.03	1.42	10.00	5.08
	March, 2023	3.23	9.41	2.22	12.00	5.40
	Change% (Month over Month)	-7.12	-25.29	-36.04	-16.67	-5.93
	April, 2022	4.50	13.76	2.70	20.00	10.06
	%Change (Year over Year)	-33.33	-48.91	-47.41	-50.00	-49.50
PXIL	April, 2023	-	-	-	-	-
	March, 2023	-	-	-	-	-
	%Change Month over Month)	NA	NA	NA	NA	NA
	April, 2022	-	-	-	-	-
	%Change (Year over Year)	NA	NA	NA	NA	NA
HPX	April, 2023	-	-	-	-	-
	March, 2023	-	-	-	-	-
	%Change Month over Month)	NA	NA	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table: 1B

- 1.6.** The maximum Area Clearing Price (ACP) of ₹ 10.00/kWh in IEX was observed in IEX during 8th to 22nd & 24th April, 2023 [time block wise details are given at **Annexure XIII**]. Whereas, in PXIL and HPX, no transaction of electricity took place in the month of April, 2023.
- 1.7.** The minimum ACP of ₹ 1.42/kWh in IEX was observed in 3 regions during the time block 13:15 - 13:30 Hrs on 30th April, 2023. As there was congestion in transmission system, the MCP for this time-block was ₹ 1.90/kWh. Whereas, in PXIL and HPX, no transaction of electricity took place in the month of April, 2023.

2. Real Time Market (RTM)

The total volume of electricity transacted on the power exchanges in Real Time Market in April, 2023 was **2,152.50 MU**, out of which **2,152.50 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 April, 2023 as compared with March, 2023 and April, 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	April, 2023	2,152.50	60.97	84.95	71.75
	March, 2023	2,097.72	48.13	98.49	67.67
	% Change (Month over Month)	2.61	26.68	-13.75	6.03
	April, 2022	1,704.28	23.92	98.97	56.81
	% Change (Year over Year)	26.30	154.89	-14.17	26.30
PXIL	April, 2023	-	-	-	-
	March, 2023	-	-	-	-
	% Change (Month over Month)	NA	NA	NA	NA
	April, 2022	0.103	0.001	0.075	0.034
	% Change (Year over Year)	NA	NA	NA	NA
HPX	April, 2023	0.11	0.11	0.11	0.11
	March, 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 Avg. MCP (₹/kWh)		ACP (₹/kWh)		Monthly Avg. MCP (₹/kWh)
		Minimum	Maximum	Minimum	Maximum	Average
IEX	April, 2023	2.69	7.64	0.20	10.00	4.95
	March, 2023	2.63	7.96	1.25	12.00	4.95
	% Change (Month over Month)	2.28	-4.02	-84.00	-16.67	0.00
	April, 2022	5.23	12.00	0.60	16.74	9.55
	% Change (Year over Year)	-48.57	-36.33	-66.67	-40.26	-48.17
PXIL	April, 2023	-	-	-	-	-

Exchange	Period	Prices (₹/kWh)				
		Daily Avg. MCP (₹/kWh)		ACP (₹/kWh)		Monthly Avg. MCP (₹/kWh)
		Minimum	Maximum	Minimum	Maximum	Average
	March, 2023	-	-	-	-	-
	% Change (Month over Month)	NA	NA	NA	NA	NA
	April, 2022	7.00	12.00	7.00	12.00	10.33
	% Change (Year over Year)	NA	NA	NA	NA	NA
HPX	April, 2023	10.00	10.00	10.00	10.00	10.00
	March, 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 **157.55 MU** (i.e. **157.55 MU** in IEX) at an average MCP of ₹ **5.25/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 April, 2023 and its comparison with March, 2023 and April, 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	April, 2023	42.06	0.58	3.24	1.40
		March, 2023	80.42	0.49	8.05	2.59
		% Change (Month over Month)	-47.70	18.37	-59.75	-45.95
		April, 2022	89.13	0.40	4.79	2.97
		% Change (Year over Year)	-52.81	45.00	-32.36	-52.86
	Non Solar	April, 2023	111.81	2.43	6.00	3.73
		March, 2023	216.10	3.79	11.43	6.97
		% Change (Month over Month)	-48.26	-35.88	-47.51	-46.48
		April, 2022	125.60	2.45	6.05	4.19
		% Change (Year over Year)	-10.98	-0.82	-0.83	-10.98
	Hydro	April, 2023	3.67	0.02	0.36	0.12
		March, 2023	1.23	0.01	0.22	0.07
		% Change (Month over Month)	198.37	100.00	63.64	71.43
		April, 2022	-	-	-	-
		% Change (Year over Year)	NA	NA	NA	NA
PXIL	Solar, Non Solar and Hydro	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		% Change (Month over Month)	NA	NA	NA	NA
HPX	Solar, Non Solar and Hydro	April, 2023	-	-	-	-
		March, 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 Avg. MCP (₹/kWh)		ACP (₹/kWh)		Monthly Avg. MCP (₹/kWh)
			Minimum	Maximum	Minimum	Maximum	Average
IEX	Solar, Non Solar and Hydro	April, 2023	4.27	7.86	1.89	10.00	5.72
		March, 2023	4.37	7.47	3.34	12.00	5.62
		% Change (Month over Month)	-2.29	5.22	-43.41	-16.67	1.78
		April, 2022	4.59	16.26	3.65	20.00	10.21
		% Change (Year over Year)	-6.97	-51.66	-48.22	-50.00	-43.98
PXIL	Solar, Non Solar and Hydro	April, 2023	-	-	-	-	-
		March, 2023	-	-	-	-	-
		% Change (Month over Month)	NA	NA	NA	NA	NA
HPX	Solar, Non Solar and Hydro	April, 2023	-	-	-	-	-
		March, 2023	-	-	-	-	-
		% Change (Month over Month)	NA	NA	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table-3B

- 3.1 There was transmission congestion of **1.16 MU** in the power exchanges in Green Day Ahead Market during the month of April, 2023. No transmission congestion during the month of March, 2023 and April, 2022.
- 3.2 There was no real time curtailment in the power exchanges in Green Day Ahead Market during the month of April, 2023, March, 2023 and April, 2022.
- 3.3 The **top 10 sellers** on the power exchanges in **Green Day Ahead Market (GDAM)** in the month of April, 2023 were **Karnataka, Andhra Pradesh, Telangana, Ramagundam Floating Solar PV Station, Adani Wind Energy Kutchh Four Ltd., J&K, Madhya Pradesh, Sikkim, Ostro Kannada Power Private Limited and Himachal Pradesh**, which constituted **85.77 %** of the market volume.
- 3.4 The **top 10 buyers** on the power exchanges in **Green Day Ahead Market (GDAM)** in the month of April, 2023 were **Maharashtra, DVC, ArcelorMittal Nippon steel (ESIL), Delhi, Tamil Nadu, Karnataka, Gujarat, West Bengal, Bharat Aluminium Company Limited and Daman & Diu - Dadra & Nagar Haveli**, which constituted **89.75 %** 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 April, 2023 on delivery date basis was **751.04 MU**, out of which **317.91 MU** (42.33 %) was transacted on IEX, **111.30 MU** (14.82 %) was transacted on PXIL and **321.83 MU** (42.85 %) was transacted on HPX.
- 4.2. The total volume of electricity transacted on the power exchanges in Term Ahead Market in March, 2023 on delivery date basis was **591.77 MU**, out of which **397.54 MU** (67.18 %) was transacted on IEX, **194.23 MU** (32.82 %) was transacted on PXIL and no transaction happened in HPX.
- 4.3. Similarly, the total volume of electricity transacted on the power exchanges in Term Ahead Market in April, 2022 on delivery date basis was **1,577.41 MU**, out of which, **619.77 MU** (39.29 %) was transacted on IEX and **957.64 MU** (60.71 %) was transacted on PXIL.
- 4.4. With respect to the total energy supplied during the month of April, 2023 in the country, the volume of electricity traded on the power exchanges in TAM on delivery date basis represents **0.57 %** of the total energy supplied. The same was **0.47 %** in March, 2023 and **1.19 %** in April, 2022.
- 4.5. In the month of April, 2023, there was transmission congestion of **9.96 MU** in IEX, PXIL and HPX in TAM.
- 4.6. In the month April, 2023, there was real time curtailment of **9.96 MU** in TAM, which happened under Daily-Anyday contract in IEX. Whereas, in PXIL & HPX 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 April, 2023 with March, 2023 and April, 2022 is given in Table – 4A & 4B:**

(a) Final Scheduled Volume (MU), April, 2023 vis- a- vis March, 2023 and April, 2022

Exchange	Period	Final Scheduled Volume (MU)				
		Daily or Any Day	Weekly	Monthly	Anyday Single Side	Total
IEX	April, 2023	76.44	73.50	119.04	48.93	317.91
	March, 2023	15.50	36.74	297.60	47.70	397.54
	%Change (Month over Month)	393.16	100.05	-60.00	2.58	-20.63
	April, 2022	601.05	18.72	-	-	619.77
	%Change (Year over Year)	-87.28	292.63	NA	NA	-48.71
PXIL	April, 2023	51.60	25.20	-	34.50	111.30
	March, 2023	-	-	-	-	-
	%Change (Month over Month)	NA	NA	NA	NA	NA
	April, 2022	957.64	-	-	-	957.64

Exchange	Period	Final Scheduled Volume (MU)				
		Daily or Any Day	Weekly	Monthly	Anyday Single Side	Total
	%Change (Year over Year)	-94.61	NA	NA	NA	-88.38
HPX	April, 2023	22.61	42.00	192.24	64.98	321.83
	March, 2023	4.88	-	148.80	40.55	194.23
	%Change (Month over Month)	363.32	NA	29.19	60.25	65.70

- : No transaction took place

NA: Not Applicable

Table: 4A

(b) Average MCP, April, 2023 vis- a- vis March, 2023 and April, 2022

Exchange	Period	Average MCP (₹/kWh)			
		Daily or Any Day	Weekly	Monthly	Anyday Single Side
IEX	April, 2023	8.59	8.38	11.20	11.19
	March, 2023	12.00	11.99	7.98	11.80
	%Change (Month over Month)	-28.42	-30.11	40.35	-5.17
	April, 2022	9.57	12.00	-	-
	%Change Year over Year)	-10.24	-30.17	NA	NA
PXIL	April, 2023	9.19	8.10	-	11.40
	March, 2023	-	-	-	-
	%Change (Month over Month)	NA	NA	NA	NA
	April, 2022	10.20	-	-	-
	%Change (Year over Year)	-9.90	NA	NA	NA
HPX	April, 2023	8.50	8.30	8.30	11.98
	March, 2023	12.00	-	7.98	10.97
	%Change (Month over Month)	-29.17	NA	4.01	9.21

-: 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 **1502.62 MU**.

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

a) Final Scheduled Volume (MU), April, 2023 vis- a- vis March, 2023 and April, 2022

Exchange	Period	Final Scheduled Volume (MU)		
		Day Ahead Contingency	Intra Day	Total
IEX	April, 2023	515.67	7.80	523.47
	March, 2023	689.29	0.11	689.40
	%Change (Month over Month)	-25.19	6990.91	-24.07
	April, 2022	533.50	18.23	-
	%Change (Year over Year)	-3.34	-57.21	NA
PXIL	April, 2023	456.23	8.08	464.31
	March, 2023	514.37	0.42	514.79
	%Change (Month over Month)	-11.30	1823.81	-9.81
	April, 2022	772.30	16.92	789.22
	%Change (Year over Year)	-40.93	-52.25	-41.17
HPX	April, 2023	514.84	-	514.84
	March, 2023	467.46	-	-
	%Change (Month over Month)	10.14	NA	NA

- : No transaction took place

NA: Not Applicable

Table: 5A

b) Average MCP, April, 2023 vis- a- vis March, 2023 and April, 2022

Exchange	Period	Average MCP (₹/kWh)	
		Day Ahead Contingency	Intra Day
IEX	April, 2023	6.10	9.92
	March, 2023	5.72	11.28
	%Change (Month over Month)	6.64	-12.06
	April, 2022	11.03	13.21
	%Change Year over Year)	-44.70	-24.91
PXIL	April, 2023	5.98	9.16

Exchange	Period	Average MCP (₹/kWh)	
		Day Ahead Contingency	Intra Day
	March, 2023	5.53	6.72
	%Change (Month over Month)	8.14	36.31
	April, 2022	11.09	13.57
	%Change (Year over Year)	-46.08	-32.50
HPX	April, 2023	6.17	-
	March, 2023	5.57	-
	%Change (Month over Month)	10.77	NA

- : No transaction took place

NA: Not Applicable

Table: 5B

- In the month of April, 2023, there was transmission congestion of **4.11 MU** in IEX, PXIL and HPX in DAC & ID.
- In the month April, 2023, there was real time curtailment of **4.11 MU** in DAC & ID, Out of which **4.10 MU** happened under Day Ahead Contingency contract, **0.01 MU** happened under Intra Day contract in IEX. Whereas, in PXIL & HPX there was no real time curtailment 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 **48.32 MU** (48.32 MU in Non-Solar only).

The total volume of electricity transacted in GTAM in Daily/ Anyday, Weekly, Monthly and Anyday Single Side contracts during April, 2023 and its comparison with March, 2023 and April, 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 April, 2023 and its comparison with March, 2023 and April, 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	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	17.48	0.10	1.63	0.58
		%Change (Year over Year)	NA	NA	NA	NA
	Weekly	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Monthly	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Anyday Single Side	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
PXIL	Daily/Anyday	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	0.93	0.93	0.93	0.93

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
		April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Monthly	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Anyday Single Side	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
HPX	Daily/Anyday	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Weekly	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Monthly	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Anyday Single Side	April, 2023	-	-	-	-
		March, 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	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	4.95	9.81	5.93

Exchange	Solar Energy Contract	Period	Prices(₹/kWh)		
			Minimum	Maximum	Average
	Weekly	%Change (Year over Year)	NA	NA	NA
		April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Monthly	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Anyday Single Side	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
PXIL	Daily/Anyday	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	14.00	14.00	14.00
		%Change (Year over Year)	NA	NA	NA
	Weekly	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Monthly	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Anyday Single Side	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
HPX	Daily/Anyday	April, 2023	-	-	-
		March, 2023	-	-	-

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

-: No transaction took place

NA: Not Applicable

Table-6B

- In April, 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 April, 2023 and its comparison with March, 2023 and April, 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	April, 2023	27.58	0.48	1.51	0.92
		March, 2023	1.49	0.05	0.05	0.05
		%Change (Month over Month)	1751.01	860.00	2920.00	1740.00
		April, 2022	14.42	0.10	1.75	0.60
		%Change (Year over Year)	91.26	380.00	-13.71	53.33
	Weekly	April, 2023	12.10	0.43	0.43	0.43
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Monthly	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Anyday Single Side	April, 2023	-	-	-	-
		March, 2023	-	-	-	-

Exchange	Non- Solar Energy Contract	Period	Final Scheduled Volume (MU)			
			Total	Minimum (on a day)	Maximum (on a day)	Average (per day)
PXIL		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Daily/Anyday	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	0.32	0.32	0.32	0.32
		%Change (Year over Year)	NA	NA	NA	NA
	Weekly	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Monthly	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Anyday Single Side	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
HPX	Daily/Anyday	April, 2023	8.64	0.24	0.72	0.29
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Weekly	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Monthly	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Anyday Single Side	April, 2023	-	-	-	-
		March, 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	April, 2023	7.19	7.28	7.23
		March, 2023	6.80	6.80	6.80
		%Change (Month over Month)	5.74	7.06	6.32
		April, 2022	6.00	12.15	8.24
		%Change (Year over Year)	19.83	-40.08	-12.26
		April, 2023	7.50	7.50	7.50
	Weekly	March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
		April, 2023	-	-	-
	Monthly	March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
		April, 2023	-	-	-
	Anyday Single Side	March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
		April, 2023	-	-	-
PXIL	Daily/Anyday	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	13.40	13.40	13.40
		%Change (Year over Year)	NA	NA	NA
	Weekly	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Monthly	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Anyday Single	April, 2023	-	-	-

Exchange	Non- Solar Energy Contract	Period	Prices(₹/kWh)		
			Minimum	Maximum	Average
HPX	Side	March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Daily/Anyday	April, 2023	7.45	7.75	7.49
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
	Weekly	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
	Monthly	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
	Anyday Single Side	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table - 6D

- In April, 2023, there was no transmission congestion in GTAM (Non Solar) in IEX, PXIL & HPX.
- In April, 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 April, 2023 and its comparison with March, 2023 and April, 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	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Weekly	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Monthly	April, 2023	-	-	-	-

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

∴ 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	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA

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

-: No transaction took place

NA: Not Applicable

Table – 6F

- In April, 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 **77.77 MU** (72.10 MU in Non-Solar and 5.67 MU in Hydro), respectively.

The total volume of electricity transacted in G-DAC & ID in Day Ahead Contingency and Intra Day contracts during April, 2023 and its comparison with March, 2023 and April, 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 April, 2023 and its comparison with March, 2023 and April, 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	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change Month over Month)	NA	NA	NA	NA
		April, 2022	20.12	0.17	2.65	1.18
		%Change (Year over Year)	NA	NA	NA	NA
	Intra Day	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
PXIL	Day Ahead Contingency	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	163.52	2.61	7.70	5.45
		%Change (Year over Year)	NA	NA	NA	NA
	Intra Day	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
HPX	Day Ahead Contingency	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA

Exchange	Solar Energy Contract	Period	Final Scheduled Volume (MU)			
			Total	Minimum (on a day)	Maximum (on a day)	Average (per day)
	Intra Day	April, 2023	-	-	-	-
		March, 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	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	3.50	12.04	7.98
		%Change (Year over Year)	NA	NA	NA
	Intra Day	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
PXIL	Day Ahead Contingency	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	3.24	11.77	8.09
		%Change (Year over Year)	NA	NA	NA
	Intra Day	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
HPX	Day Ahead Contingency	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
	Intra Day	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table-7B

- In April, 2023, there was no transaction took place 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 April, 2023 and its comparison with March, 2023 and April, 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	April, 2023	51.67	1.00	2.96	1.72
		March, 2023	92.56	0.64	4.55	2.99
		%Change (Month over Month)	-44.18	56.25	-34.95	-42.47
		April, 2022	68.55	0.42	3.45	2.36
		%Change (Year over Year)	-24.62	138.10	-14.20	-27.12
	Intra Day	April, 2023	0.05	0.05	0.05	0.05
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	0.20	0.20	0.20	0.20
		%Change (Year over Year)	-75.00	-75.00	-75.00	-75.00
PXIL	Day Ahead Contingency	April, 2023	16.55	0.04	1.40	0.55
		March, 2023	30.45	0.20	2.57	1.01
		%Change (Month over Month)	-45.65	-80.00	-45.53	-45.54
		April, 2022	43.90	0.59	3.38	1.46
		%Change (Year over Year)	-62.30	-93.22	-58.58	-62.33
	Intra Day	April, 2023	-	-	-	-
		March, 2023	0.35	0.35	0.35	0.35
		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
HPX	Day Ahead Contingency	April, 2023	3.83	0.05	0.61	0.32
		March, 2023	1.13	0.10	0.43	0.28
		%Change (Month over Month)	238.94	-50.00	41.86	14.29
	Intra Day	April, 2023	-	-	-	-
		March, 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	April, 2023	4.11	8.98	6.17
		March, 2023	4.32	9.44	5.64
		%Change (Month over Month)	-4.86	-4.87	9.40
		April, 2022	4.75	14.01	10.50
		%Change (Year over Year)	-13.47	-35.90	-41.24
	Intra Day	April, 2023	10.00	10.00	10.00
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	12.00	12.00	12.00
		%Change (Year over Year)	-16.67	-16.67	-16.67
PXIL	Day Ahead Contingency	April, 2023	4.16	8.81	6.02
		March, 2023	3.72	9.96	5.64
		%Change (Month over Month)	11.83	-11.55	6.74
		April, 2022	4.67	13.92	10.41
		%Change (Year over Year)	-10.92	-36.71	-42.17
	Intra Day	April, 2023	-	-	-
		March, 2023	4.83	4.83	4.83
		%Change (Month over Month)	NA	NA	NA
		April, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
HPX	Day Ahead Contingency	April, 2023	3.05	9.96	6.59
		March, 2023	5.94	8.45	7.01
		%Change (Month over Month)	-48.65	17.87	-5.99
	Intra Day	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table - 7D

- In April, 2023, there was transmission congestion of **0.41 MU** in G-DAC & ID (Non Solar) in IEX, PXIL & HPX.
- In April, 2023, there was real time curtailment of **0.41 MU** 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 April, 2023 and its comparison with March, 2023 and April, 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	April, 2023	5.67	0.39	0.54	0.47
		March, 2023	2.87	0.02	0.23	0.18
		%Change (Month over Month)	97.56	1850.00	134.78	161.11
		April, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Intra Day	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
PXIL	Day Ahead Contingency	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Intra Day	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		April, 2022	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
HPX	Day Ahead Contingency	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Intra Day	April, 2023	-	-	-	-
		March, 2023	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		%Change (Year over Year)	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	April, 2023	3.73	7.28	5.83
		March, 2023	3.85	11.70	7.26
		%Change (Month over Month)	-3.12	-37.78	-19.70
		April, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Intra Day	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
PXIL	Day Ahead Contingency	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Intra Day	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		April, 2022	-	-	-
		%Change (Year over Year)	NA	NA	NA
HPX	Day Ahead Contingency	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
	Intra Day	April, 2023	-	-	-
		March, 2023	-	-	-
		%Change (Month over Month)	NA	NA	NA
		%Change (Month over Month)	NA	NA	NA

-: No transaction took place

NA: Not Applicable

Table – 7F

- In April, 2023, there was transmission congestion of **0.12 MU** in G-DAC & ID (Hydro) in IEX. No transaction took place in PXIL and HPX in G-DAC & ID (Hydro).
- In April, 2023, there was real time curtailment of **0.12 MU** in G-DAC & ID (Hydro) in IEX. No transaction took place in PXIL and HPX in G-DAC & ID (Hydro).

8. Bilateral Transactions:

The total volume of electricity transacted through **Bilateral transactions** in the month of April, 2023 was **9,603.43 MU**. The total buy volume of electricity transacted in bilateral market through direct transactions and trader in the month of April, 2023 were **2,886.95 MU** and **6,716.48 MU** respectively. The details of Bilateral transactions of Electricity during April, 2023 is shown in Table Below:

April, 2023	Direct	Traders	Total Bilateral Transaction (MU)
Total	2,886.95	6,716.48	9,603.43
Minimum	0.51	1.38	-
Maximum	759.44	1,494.89	-

Table -8A

The region-wise maximum/ minimum volume of electricity transacted bilaterally during April, 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	135.86	700.94	770.81	1985.66	644.70	844.97	1335.57	3172.84	-	12.06
Minimum	0.51	13.27	1.21	2.69	1.68	23.20	9.83	57.51	-	1.38
Maximum	63.30	411.82	515.95	950.26	221.86	323.31	759.44	1494.89	-	9.02

Table-8B

8.1. The top 5 buyers on bilateral transaction through direct transactions in the month of April, 2023 were **Karnataka, Maharashtra, Andhra Pradesh, Telangana** and **Haryana**, which constituted **70.66 %** of the market volume. Whereas **top 5 buyers** on bilateral transaction through traders in the month of April, 2023 were **Tamil Nadu, Maharashtra, Andhra Pradesh, Gujarat** and **West Bengal**, which constituted **64.22 %** of the market volume. [Annexure III]

8.2. The top 5 sellers on bilateral transaction through direct transactions in the month of April, 2023 were **Punjab, SEMCORP, AHEJ4LAHS, Uttar Pradesh** and **DVC**, which constituted **52.33 %** of the market volume. Whereas **top 5 sellers** on bilateral transaction through traders in the month of April, 2023 were **Punjab, RPREL, ESSAR POWER, JINDAL STAGE-II** and **RKM POWER**, which constituted **42.57 %** of the market volume. [Annexure III]

8.3. Deviation Volume -The volume of Deviation observed in the month of April, 2023 in import and export were **2,464.57 MU** and **2,908.49 MU** respectively. The total volume of Deviation observed in the month of April, 2023 can be taken as **2,686.53 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 April, 2023 is shown in **Figure 1:**

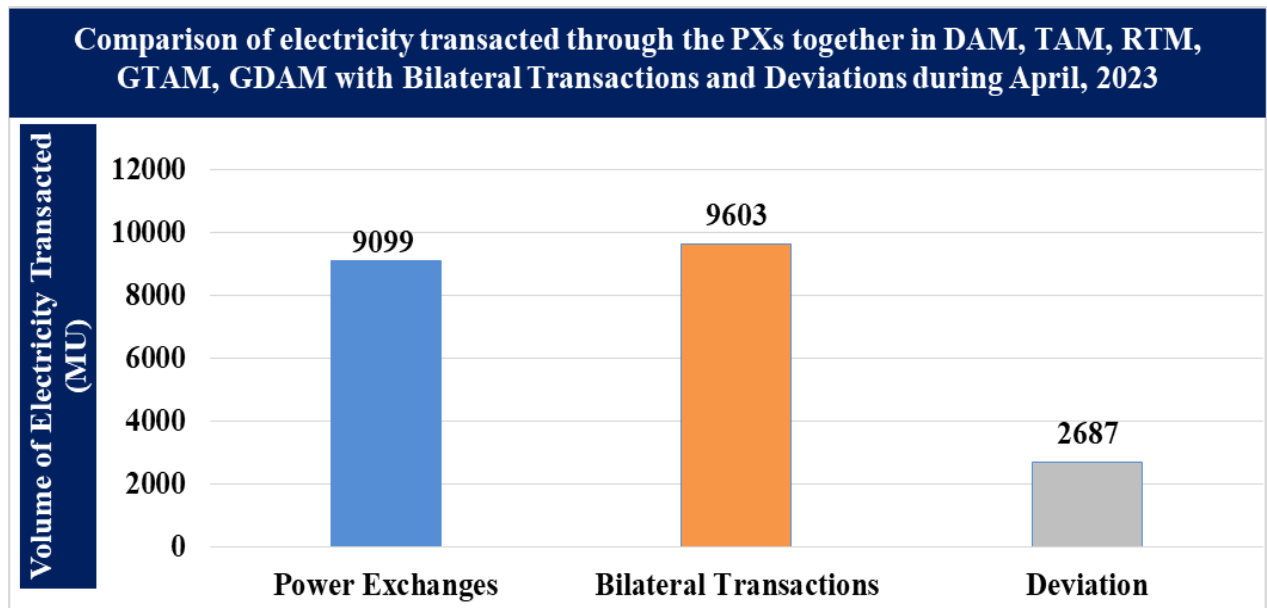
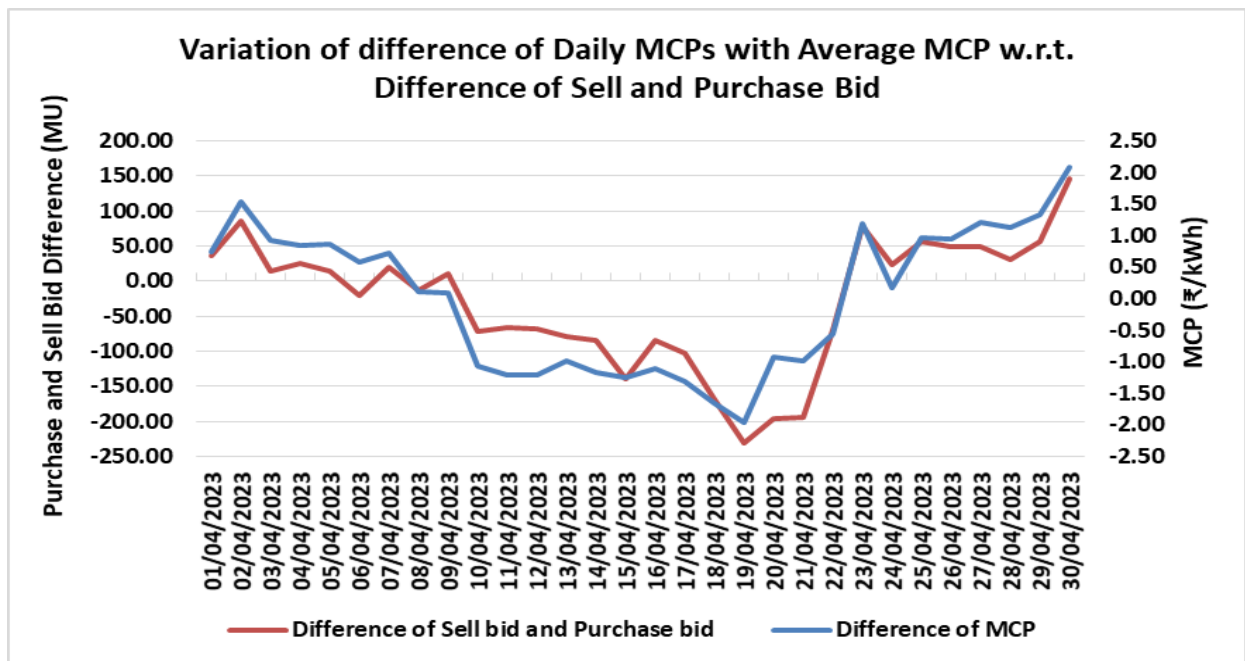


Figure -1

9. Analysis of movement of prices observed in DAM during April, 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 April, 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 variables was the Peak Demand. Further, the regression analysis revealed that the elasticity of the Daily Avg. MCP with respect to Peak Demand was **3.37** in the month of April, 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**

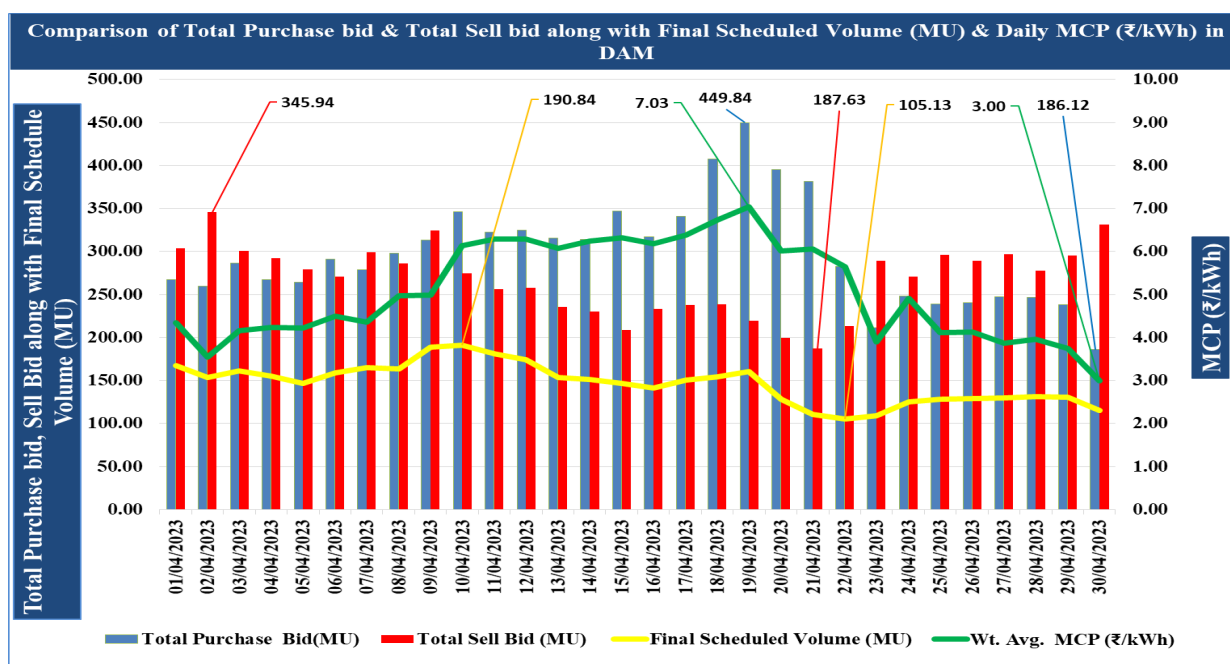


Figure – 2

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 April, 2023, it is observed that on second Sunday (09th April, 2023), FSV showed increasing trend in comparison to second Saturday (08th April, 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**

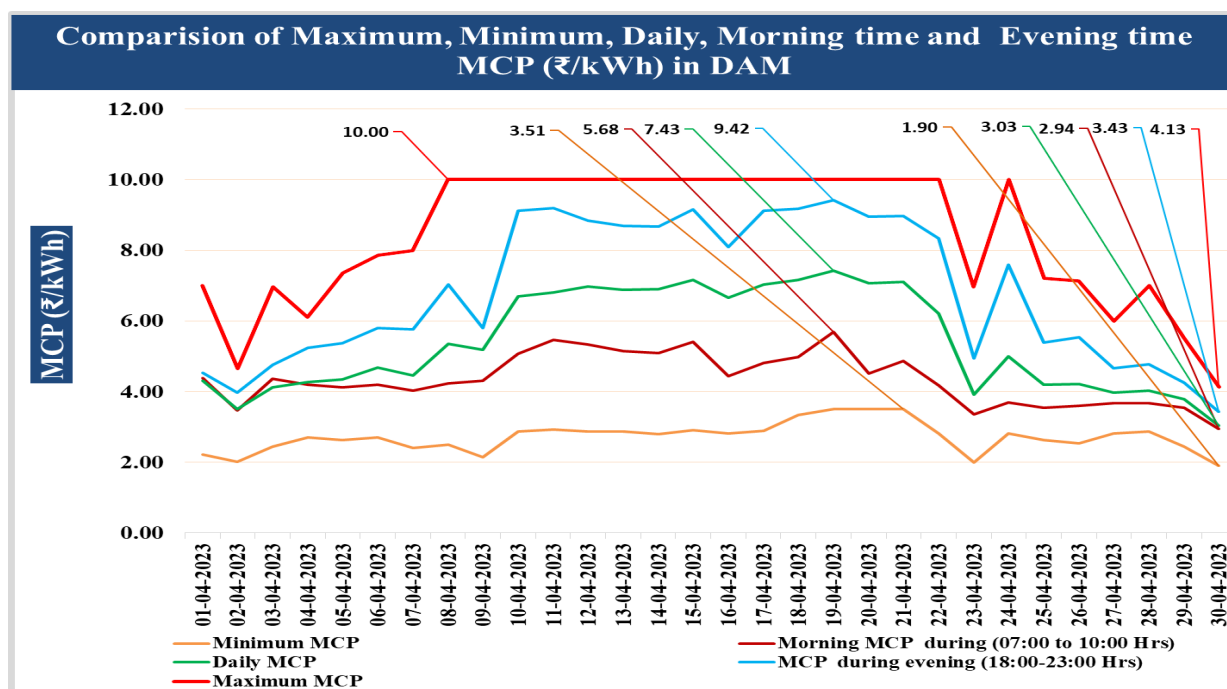


Figure-3

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

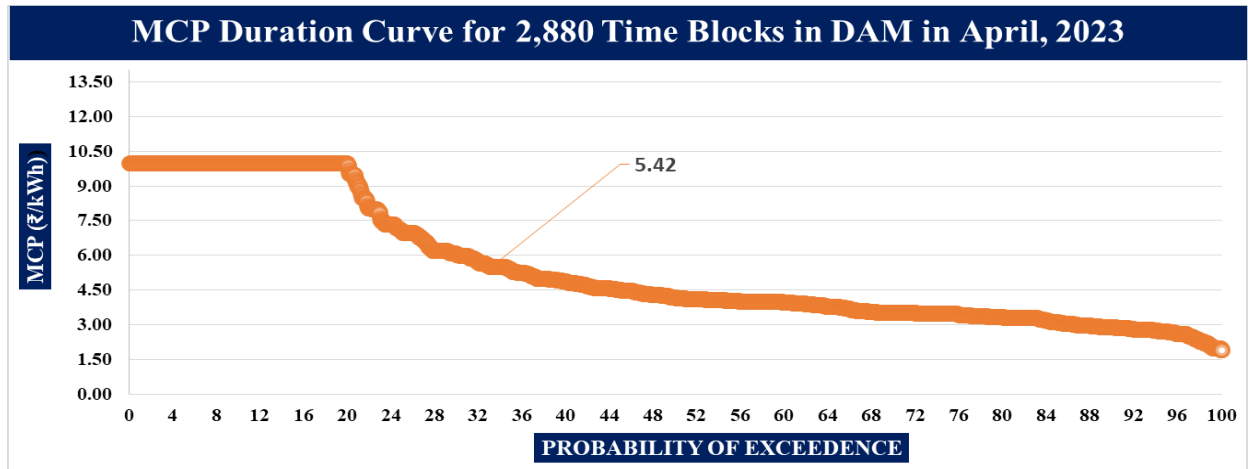


Figure – 4

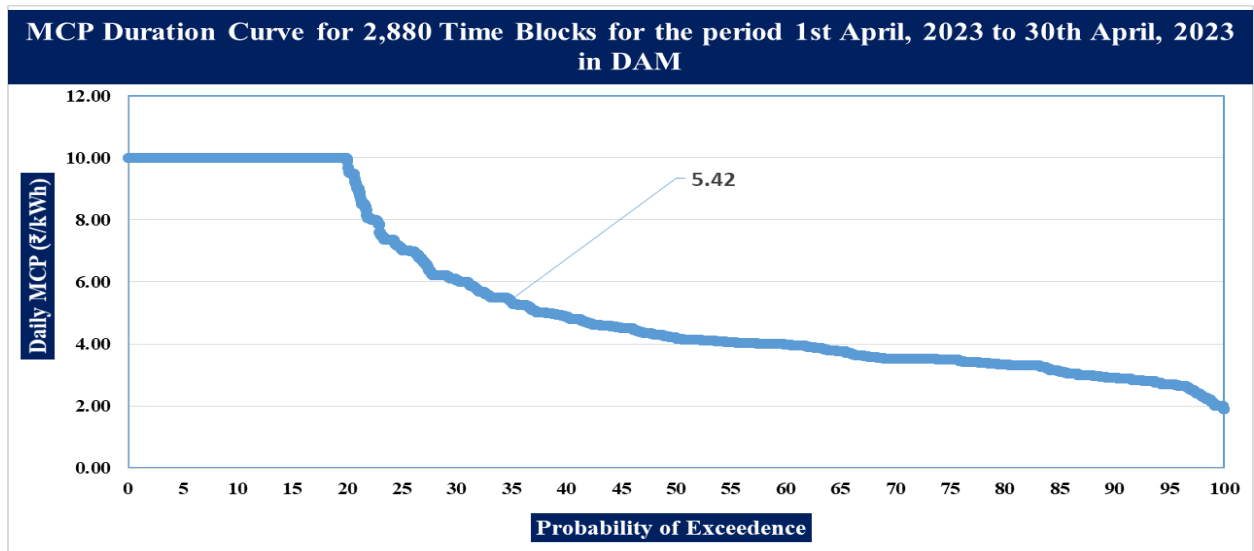


Figure-5

9.8. It can be seen in figure 4 above that in the MCP duration curve of April, 2023, for 35.00 % of the time MCP was above average MCP of the month (i.e. ₹ 5.42/kWh) and almost 65.00 % 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 April, 2023 (figure-5), that for 35.00 % of the time the MCP was above the average MCP for the period (i.e. ₹ 5.42/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 7.1 and 7.2 above**.

- 9.10.** In April, 2023, the maximum FSV occurred mostly during the **time period 07-08 Hrs** (on 14 no. of days). Whereas, the maximum MCP occurred mostly during the **time period 00-01 Hrs** (on 15 no. of days). Similarly, the minimum FSV occurred mostly during the **time period 22-24 Hrs** (on 11 no. of days). Whereas, the minimum MCP occurred mostly during the **time period 13-14 Hrs** (on 31 no. of days). **[Annexure VI]**
- 9.11.** In the month of April, 2023, there was congestion of **56.64 MU** in IEX and no transaction of electricity took place in PXIL & HPX during April, 2023. Further, in the month of March, 2023, there was no congestion in Power Exchanges and in the month of April, 2022, there was congestion of **0.69 MU** in IEX and no transaction of electricity took place in PXIL in Power Exchanges.
- 9.12.** In the month of April, 2023, there was **no** real time curtailment in IEX and no transaction of electricity took place in PXIL & HPX during April, 2023. Further, in the month of March, 2023, there was no real time curtailment in Power Exchanges and in the month of April, 2022, there was real time curtailment of **8.86 MU** in IEX and no transaction of electricity took place in PXIL in Power Exchanges.
- 9.13.** The **top 10 sellers** on the power exchanges in **Day Ahead Market (DAM)** in the month of April, 2023 were **Uttar Pradesh, Bihar, Chhattisgarh, Haryana, Delhi, Jindal Power Ltd. Stg-II, Jaypee Nigrie, MB Power, DB Power and Jindal Power**, which constituted **64.55 %** 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 April, 2023 were **Gujarat, Telangana, Punjab, West Bengal, J&K, Maharashtra, Andhra Pradesh, Uttar Pradesh, Uttarakhand and NVVN (SNA)–NEA**, which constituted **81.64 %** of the market volume. **[Annexure VII]**
- 9.15.** The total volume of electricity purchased by Discoms/Licensees in DAM in the month of April, 2023 was **4,109.09 MU**, which constituted **93.20 %** 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 April, 2023 was **3,004.97 MU**, which constituted **68.16 %** of total volume of electricity sold on the power exchanges.

10. Analysis of movement of prices observed in Real Time Market (RTM) transactions in April, 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 variables was the Peak Demand. Further, the regression analysis revealed that the elasticity of the Daily Avg. MCP with respect to Peak Demand was **3.80** in the month of April, 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:

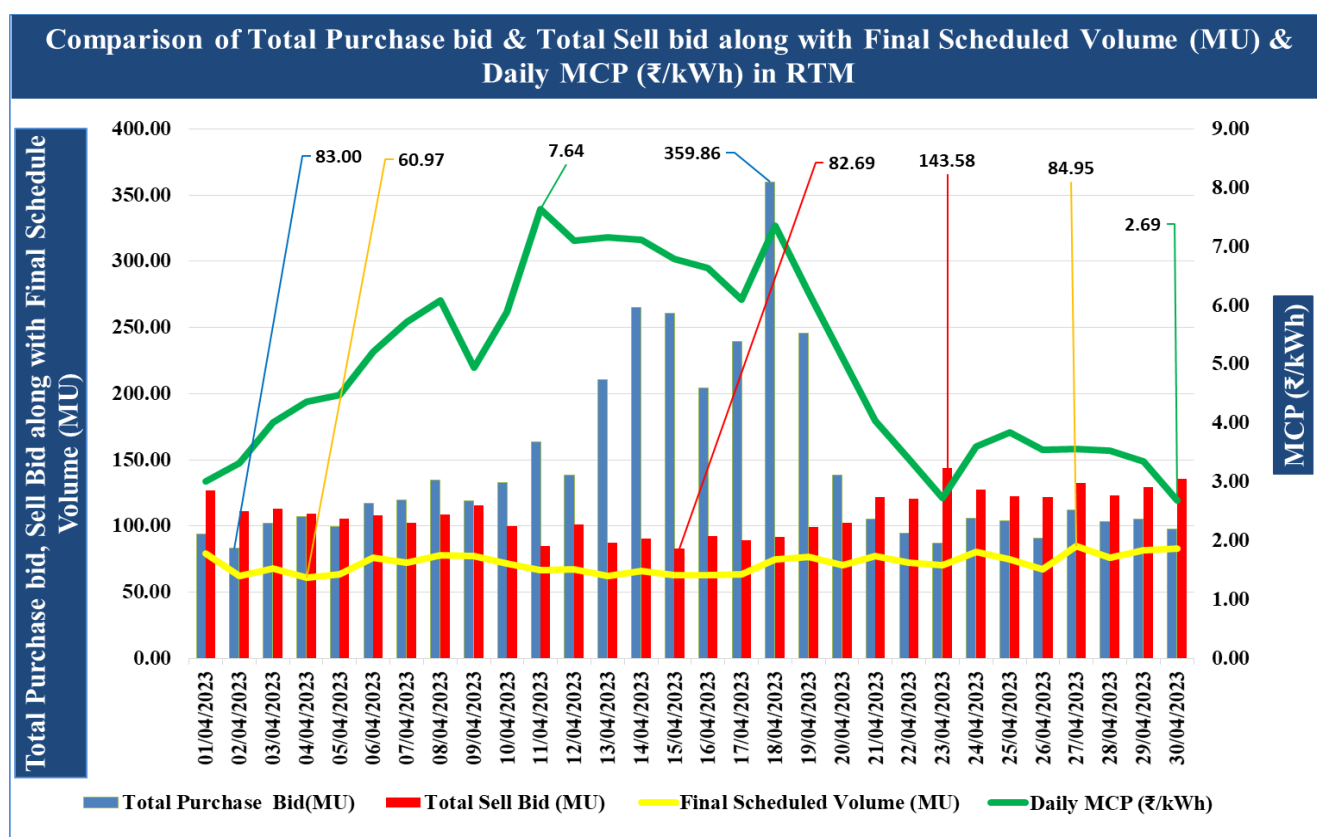


Figure-6

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

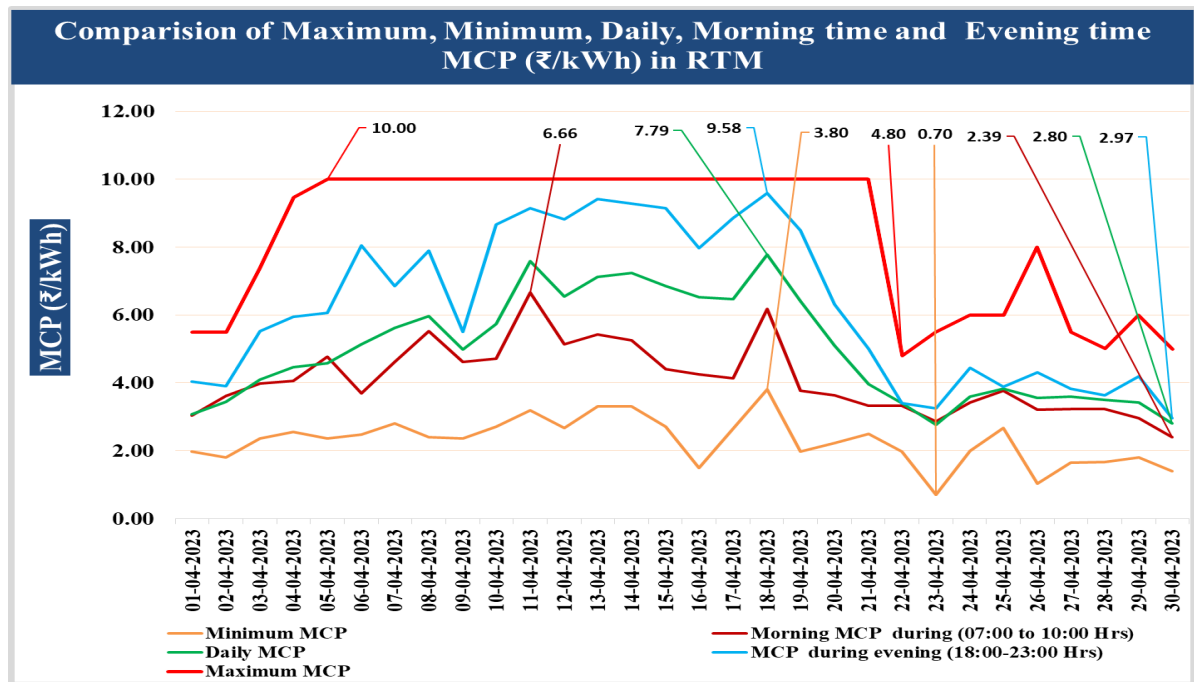


Figure-7

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

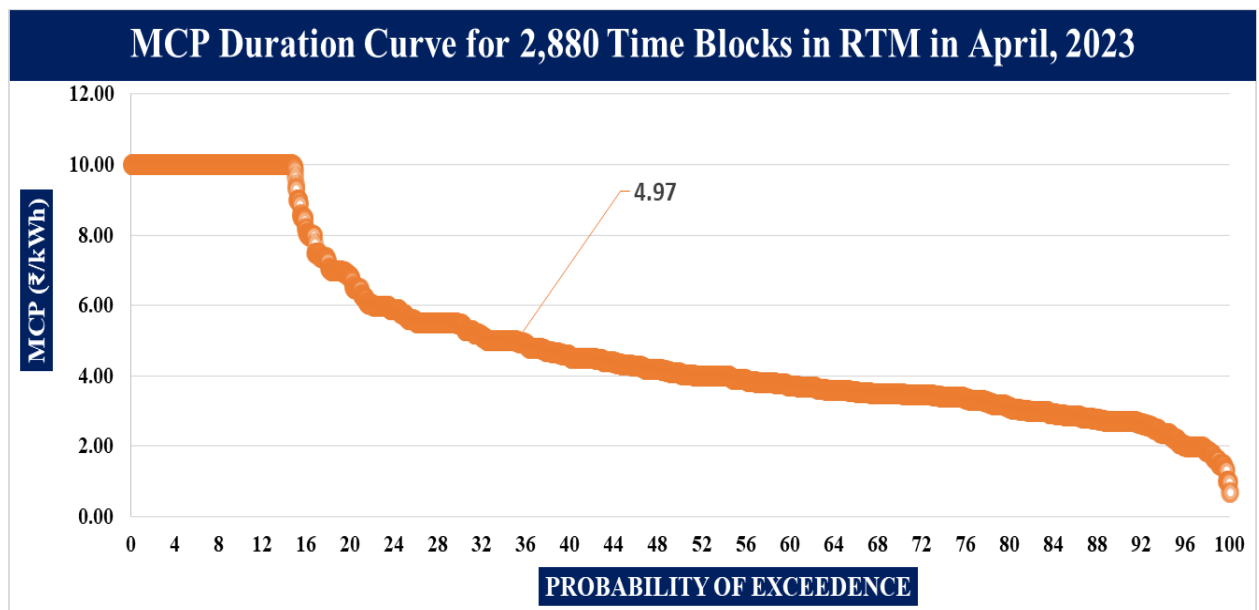


Figure-8

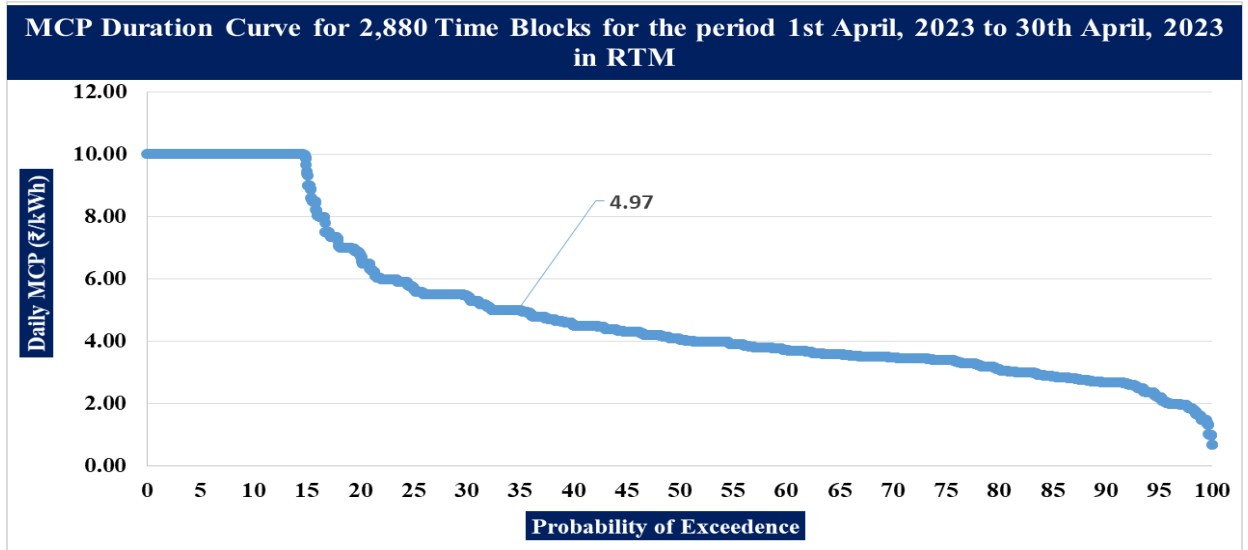


Figure-9

- 10.6.** It can be seen in figure 8 above that in the MCP duration curve of April, 2023, for 37.00 % of the time the MCP was above the average MCP of the month (i.e. ₹ 4.97/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 April, 2023 (figure 9) that, for 37.00 % of the time the Daily Avg. MCP was above the average MCP for the period (i.e. ₹ 4.97/kWh) and for 63.00 % of the time the Daily Avg. MCP was below the average MCP for the period.
- 10.7.** In April, 2023, the maximum FSV occurred mostly during the **time period 16-18 Hrs** (on 12 no. of days). Whereas, the maximum MCP also occurred mostly during the **time period 00-01 Hrs** (on 13 no. of days). Similarly, the minimum FSV occurred mostly during the **time period 07-09 Hrs** (on 09 no. of days). Whereas, the minimum MCP occurred mostly during the **time period 13-14 Hrs** (on 17 no. of days).[Annexure X]
- 10.8.** There was **no** real time curtailment in IEX in Real Time Market (RTM) during April, 2023 and no transaction happened in PXIL and HPX. Further, in March, 2023 **no** real time curtailment occurred in IEX, whereas, no transaction happened in PXIL and HPX. Similarly, in April, 2022, there was no real time curtailment in IEX & PXIL.
- 10.9.** In the month of April, 2023 there was congestion of **4.62 MU** in IEX and no transaction happened in PXIL & HPX. Further, in the month of March, 2023, there was congestion of **0.89 MU** in IEX and no transaction happened in PXIL & HPX. In the month of April, 2022, there was **0.56 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 April, 2023 were **Madhya Pradesh, NPCIL KAKRAPAR ATOMIC POWER STATION UNITS 3 & 4, Bihar, Rajasthan, Delhi, Chhattisgarh, Uttar Pradesh, Odisha, Himachal Pradesh and West Bengal**, which constituted **74.03 %** of the market volume. [Annexure XI]

10.11. The **top 10 buyers** on the power exchanges in **Telangana , Maharashtra, Punjab, West Bengal, Gujarat, Rajasthan, J&K, Uttar Pradesh, Andhra Pradesh and Tamil Nadu**, which constituted **81.14 %** of the market volume. [Annexure XI]

10.12. The total volume of electricity purchased by Discoms/Licensees in RTM in the month of April, 2023 was **2,117.79 MU**, which constituted **98.38 %** 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 April, 2023 was **1,600.43 MU**, which constituted **74.35 %** 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 March, 2024 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						
	June, 2023						
Total Quarter -I	April - June, 2023	4,408.93	0	5.08	0	0	0
Total April, 2023 – March, 2024		4,408.93	0	5.08	0	0	0

Annexure-II

Final Scheduled Volume in Term Ahead Market (TAM) for the months of April, 2023 to March, 2024 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				
	June, 2023				
Total Quarter – I	April - June, 2023	317.91	111.30	321.83	751.04
Total April, 2023 - March, 2024		317.91	111.30	321.83	751.04

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

(i) Top five Buyers in Bilateral transactions

Entity Name	Direct		Entity Name	Through Traders	
	(MU)	Percent		(MU)	Percent
Karnataka	759.44	26.31%	Tamil Nadu	1494.89	22.26%
Maharashtra	515.95	17.87%	Maharashtra	950.26	14.15%
Andhra Pradesh	304.85	10.56%	Andhra Pradesh	872.27	12.99%
Telangana	237.72	8.23%	Gujarat	583.98	8.69%
Haryana	221.86	7.68%	West Bengal	411.82	6.13%
Total Volume	2,039.81	70.66%	Total Volume	4,313.22	64.22%
Total Volume in Bilateral	2,886.95		Total Volume in Bilateral	6,716.48	

(ii) Top five Sellers in Bilateral transactions

Entity Name	Direct		Entity Name	Through Traders	
	(MU)	Percent		(MU)	Percent
Punjab	768.24	26.61%	Punjab	762.01	11.35%
SEMCORP	306.06	10.60%	RPREL	693.96	10.33%
AHEJ4LAHS	171.26	5.93%	ESSAR POWER	573.63	8.54%
Uttar Pradesh	135.20	4.68%	JINDAL STAGE-II	459.12	6.84%
DVC	129.85	4.50%	RKM POWER	370.17	5.51%
Total Volume	1,510.60	52.33%	Total Volume	2,858.88	42.57%
Total Volume in Bilateral	2,886.95		Total Volume in Bilateral	6,716.48	

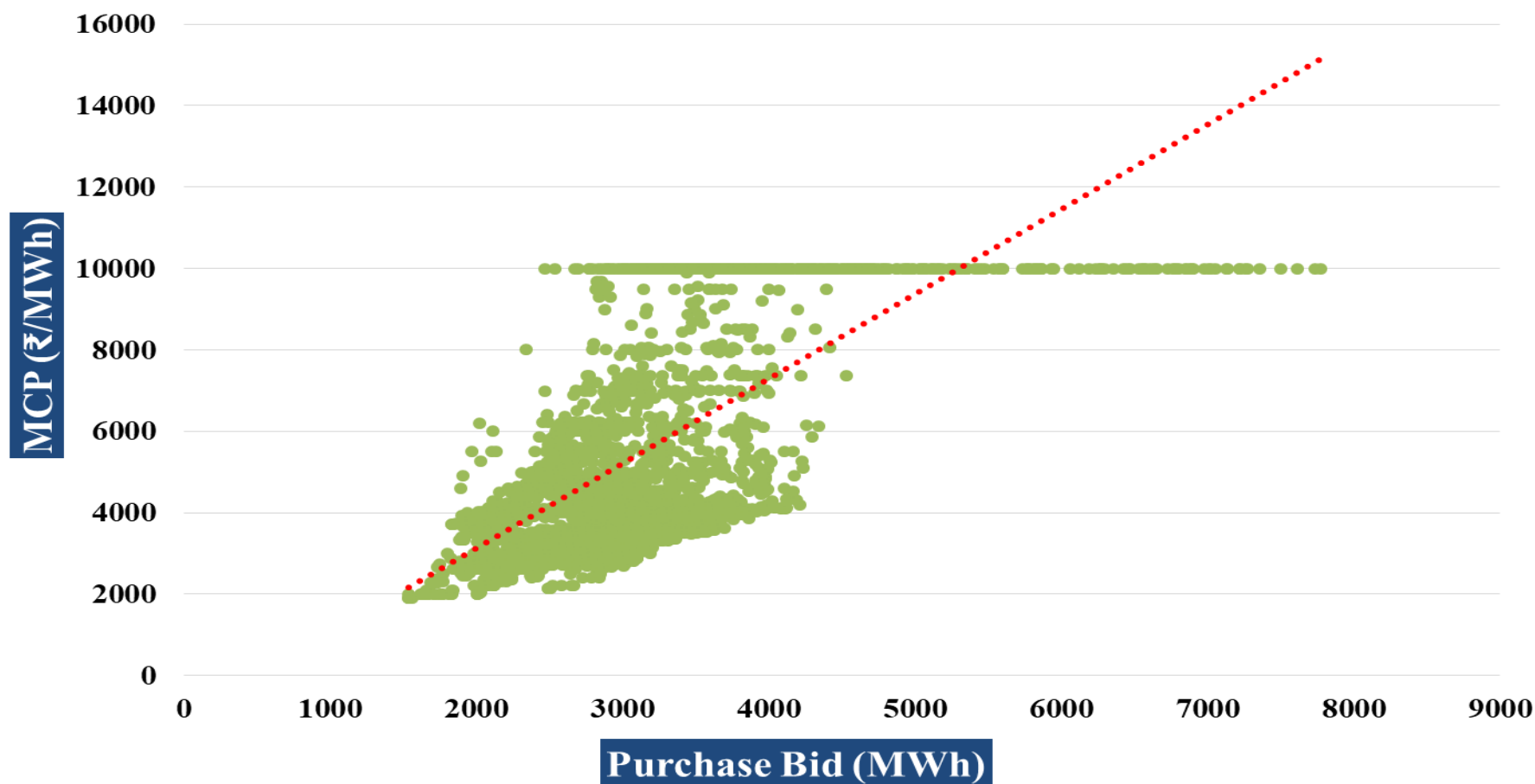
Evening, Day, Night, Morning, Maximum, Minimum, Average MCP (₹/kWh) and Final Scheduled Volume (MU) in DAM

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)
01-04-2023	4.39	2.79	4.53	5.62	7.00	2.22	4.32	167.21
02-04-2023	3.46	2.40	3.97	4.24	4.65	2.01	3.50	153.66
03-04-2023	4.36	2.95	4.76	4.62	6.98	2.45	4.12	161.04
04-04-2023	4.20	2.98	5.25	4.80	6.10	2.70	4.28	155.33
05-04-2023	4.13	3.01	5.38	4.91	7.36	2.63	4.34	146.95
06-04-2023	4.20	3.08	5.79	5.59	7.86	2.71	4.68	158.73
07-04-2023	4.03	2.89	5.76	5.18	8.00	2.40	4.47	165.20
08-04-2023	4.23	2.99	7.03	6.89	10.00	2.50	5.34	163.46
09-04-2023	4.32	2.61	5.81	7.74	10.00	2.14	5.19	188.88
10-04-2023	5.07	3.37	9.12	8.90	10.00	2.87	6.70	190.84
11-04-2023	5.47	3.51	9.19	8.85	10.00	2.92	6.81	180.97
12-04-2023	5.33	3.35	8.84	9.95	10.00	2.87	6.98	174.35
13-04-2023	5.15	3.37	8.70	9.86	10.00	2.87	6.89	153.46
14-04-2023	5.09	3.33	8.67	10.00	10.00	2.80	6.90	151.20
15-04-2023	5.40	3.62	9.16	10.00	10.00	2.91	7.16	146.94
16-04-2023	4.44	3.33	8.09	10.00	10.00	2.81	6.65	141.07
17-04-2023	4.80	3.57	9.11	10.00	10.00	2.88	7.04	150.77
18-04-2023	4.98	3.85	9.17	10.00	10.00	3.34	7.16	154.54
19-04-2023	5.68	4.15	9.42	10.00	10.00	3.50	7.43	160.27
20-04-2023	4.50	3.98	8.94	10.00	10.00	3.50	7.06	128.54
21-04-2023	4.86	3.89	8.97	10.00	10.00	3.51	7.10	111.03
22-04-2023	4.19	3.40	8.33	8.38	10.00	2.81	6.22	105.13
23-04-2023	3.35	2.72	4.94	4.57	6.98	2.00	3.92	109.45
24-04-2023	3.69	3.15	7.59	5.39	10.00	2.82	5.00	125.26
25-04-2023	3.54	3.09	5.40	4.62	7.20	2.63	4.19	128.12
26-04-2023	3.59	3.03	5.54	4.63	7.14	2.53	4.22	128.96
27-04-2023	3.67	3.12	4.66	4.43	6.00	2.81	3.98	130.16
28-04-2023	3.68	3.35	4.77	4.26	7.00	2.87	4.03	131.23
29-04-2023	3.54	2.97	4.25	4.36	5.53	2.45	3.79	130.70
30-04-2023	2.94	2.06	3.43	3.72	4.13	1.90	3.03	115.48
Maximum	5.68	4.15	9.42	10.00	10.00	3.51	7.43	190.84
Minimum	2.94	2.06	3.43	3.72	4.13	1.90	3.03	105.13
Average	4.34	3.20	6.82	7.05	8.40	2.71	5.42	146.96

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 April, 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
01-04-2023	07:45 - 08:00	2.81	05:30 - 05:45	7.00	21:00 - 21:15	1.18	13:15 - 13:30	2.22
02-04-2023	07:15 - 07:30	2.50	05:45 - 06:00	4.65	22:15 - 22:30	1.23	13:45 - 14:00	2.01
03-04-2023	07:30 - 07:45	2.57	05:45 - 06:00	6.98	20:15 - 20:30	1.27	13:15 - 13:30	2.45
04-04-2023	07:30 - 07:45	2.59	19:00 - 19:15	6.10	21:00 - 21:15	1.21	13:15 - 13:30	2.70
05-04-2023	07:15 - 07:30	2.38	19:15 - 19:30	7.36	23:15 - 23:30	1.09	13:15 - 13:30	2.63
06-04-2023	07:30 - 07:45	2.41	19:00 - 19:15	7.86	23:30 - 23:45	1.22	13:15 - 13:30	2.71
07-04-2023	07:15 - 07:30	2.52	19:00 - 19:15	8.00	23:30 - 23:45	1.31	13:15 - 13:30	2.40
08-04-2023	07:15 - 07:30	2.60	19:00 - 19:15	10.00	22:00 - 22:15	1.13	13:15 - 13:30	2.50
09-04-2023	07:00 - 07:15	2.74	00:00 - 00:15	10.00	00:00 - 00:15	1.46	13:45 - 14:00	2.14
10-04-2023	16:30 - 16:45	2.97	00:15 - 00:30	10.00	21:15 - 21:30	1.14	13:15 - 13:30	2.87
11-04-2023	17:00 - 17:15	2.67	00:00 - 00:15	10.00	22:30 - 22:45	1.16	13:00 - 13:15	2.92
12-04-2023	16:30 - 16:45	2.75	00:00 - 00:15	10.00	21:30 - 21:45	0.96	13:15 - 13:30	2.87
13-04-2023	16:45 - 17:00	2.38	00:00 - 00:15	10.00	21:15 - 21:30	0.86	13:00 - 13:15	2.87
14-04-2023	07:00 - 07:15	2.36	00:00 - 00:15	10.00	21:45 - 22:00	1.05	13:00 - 13:15	2.80
15-04-2023	15:45 - 16:00	2.48	00:00 - 00:15	10.00	22:00 - 22:15	0.84	13:15 - 13:30	2.91
16-04-2023	07:15 - 07:30	2.18	00:00 - 00:15	10.00	00:00 - 00:15	1.02	13:15 - 13:30	2.81
17-04-2023	08:30 - 08:45	2.24	00:00 - 00:15	10.00	00:00 - 00:15	0.92	13:15 - 13:30	2.88
18-04-2023	09:00 - 09:15	2.10	00:00 - 00:15	10.00	22:45 - 23:00	1.31	13:30 - 13:45	3.34
19-04-2023	08:45 - 09:00	2.14	00:00 - 00:15	10.00	23:45 - 24:00	0.75	13:15 - 13:30	3.50
20-04-2023	15:00 - 15:15	2.32	00:00 - 00:15	10.00	22:30 - 22:45	0.66	13:15 - 13:30	3.50
21-04-2023	15:15 - 15:30	1.75	00:00 - 00:15	10.00	22:45 - 23:00	0.64	13:15 - 13:30	3.51
22-04-2023	06:45 - 07:00	1.62	00:00 - 00:15	10.00	03:45 - 04:00	0.71	13:00 - 13:15	2.81
23-04-2023	06:15 - 06:30	1.55	22:45 - 23:00	6.98	03:15 - 03:30	0.66	13:15 - 13:30	2.00
24-04-2023	07:15 - 07:30	1.66	19:00 - 19:15	10.00	04:30 - 04:45	0.88	13:15 - 13:30	2.82
25-04-2023	06:30 - 06:45	1.73	22:45 - 23:00	7.20	01:15 - 01:30	0.97	13:15 - 13:30	2.63
26-04-2023	06:30 - 06:45	1.91	22:15 - 22:30	7.14	01:15 - 01:30	0.89	13:00 - 13:15	2.53
27-04-2023	07:00 - 07:15	1.84	23:15 - 23:30	6.00	01:45 - 02:00	0.77	13:15 - 13:30	2.81
28-04-2023	06:30 - 06:45	1.98	22:15 - 22:30	7.00	02:30 - 02:45	0.80	13:15 - 13:30	2.87
29-04-2023	07:00 - 07:15	2.01	00:00 - 00:15	5.53	03:45 - 04:00	0.97	13:00 - 13:15	2.45
30-04-2023	08:00 - 08:15	1.50	23:45 - 24:00	4.13	02:45 - 03:00	0.81	13:15 - 13:30	1.90

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

Sellers and Buyers in Day Ahead Market (DAM) in the month of April, 2023

S. No.	Entity Name	Sell		Entity Name	Purchase	
		(MU)	Percent (%)		(MU)	Percent (%)
1	Uttar Pradesh	951.75	21.59%	Gujarat	956.77	21.70%
2	Bihar	454.00	10.30%	Telangana	507.98	11.52%
3	Chhattisgarh	310.28	7.04%	Punjab	420.43	9.54%
4	Haryana	226.80	5.14%	West Bengal	412.01	9.34%
5	Delhi	216.09	4.90%	J&K	406.14	9.21%
6	Jindal Power Ltd.	181.41	4.11%	Maharashtra	225.32	5.11%
7	Jaypee Nigrie	136.03	3.09%	Andhra Pradesh	174.37	3.95%
8	MB Power	135.96	3.08%	Uttar Pradesh	167.27	3.79%
9	DB Power	121.45	2.75%	Uttarakhand	166.07	3.77%
10	Jindal Power	112.24	2.55%	NVVN (SNA) - NEA	163.24	3.70%
11	SKS Power	98.53	2.23%	Tamil Nadu	143.05	3.24%
12	Maharashtra	80.32	1.82%	Rajasthan	136.22	3.09%
13	Himachal Pradesh	72.89	1.65%	Daman & Diu - Dadra &	109.10	2.47%
14	Telangana	66.94	1.52%	Assam	65.03	1.47%
15	Tamil Nadu	63.64	1.44%	ArcelorMittal Nippon	60.17	1.36%
16	Gujarat	62.96	1.43%	Druk Green Power	48.33	1.10%
17	Jindal Steel	61.68	1.40%	Karnataka	44.50	1.01%
18	Raipur Energen	52.87	1.20%	Himachal Pradesh	30.85	0.70%
19	Rajasthan	50.65	1.15%	Madhya Pradesh	23.05	0.52%
20	Madhya Pradesh	48.92	1.11%	Haryana	22.51	0.51%
21	Assam	48.57	1.10%	Kerala	21.69	0.49%
22	West Bengal	46.12	1.05%	Odisha	18.64	0.42%
23	Odisha	45.80	1.04%	NEA-NR	18.55	0.42%
24	DGEN Mega Power	42.40	0.96%	Jharkhand	17.72	0.40%
25	Mahan Energy	41.34	0.94%	Goa SR	11.94	0.27%
26	Karnataka	40.90	0.93%	Goa WR	9.13	0.21%
27	Chandigarh	35.15	0.80%	Railways	8.64	0.20%
28	Sembcorp Gayatri	33.79	0.77%	Chhattisgarh	5.77	0.13%
29	Ratnagiri Gas and	29.60	0.67%	Meghalaya	4.82	0.11%
30	Goa WR	28.67	0.65%	Delhi	3.65	0.08%
31	Andhra Pradesh	28.08	0.64%	Arunachal Pradesh	2.35	0.05%
32	Kerala	27.04	0.61%	Bihar	1.50	0.03%
33	JITPL	24.88	0.56%	Tripura	0.84	0.02%
34	DVC	24.19	0.55%	Ratnagiri Gas & Power	0.68	0.02%
35	Jharkhand	23.21	0.53%	BHARAT ALUMINIUM	0.21	0.00%
36	Sembcorp Energy	20.65	0.47%	Manipur	0.21	0.00%
37	ACBIL	20.12	0.46%	Sikkim	0.20	0.00%
38	Maruti Clean Coal	19.86	0.45%			
39	Teesta -3	19.80	0.45%			
40	NTPC	17.65	0.40%			
41	Kameng HEP	15.49	0.35%			
42	NTPC Kawas GPS	15.03	0.34%			
43	Uttarakhand	13.61	0.31%			
44	IL&FS	12.26	0.28%			
45	NTPC DADRI GPS	12.17	0.28%			
46	Raigarh Energy	11.73	0.27%			
47	Talcher Stg-2	11.70	0.27%			

48	Adani Green Energy	11.45	0.26%			
49	RKM Power	11.38	0.26%			
50	Jhabua Power	10.94	0.25%			
51	Palatana	10.42	0.24%			
52	Renew Surya Ravi	10.37	0.24%			
53	NTPC AURAIYA	9.29	0.21%			
54	J&K	9.07	0.21%			
55	Karcham Wangtoo	8.95	0.20%			
56	GMR Warora	8.76	0.20%			
57	Arunachal Pradesh	8.67	0.20%			
58	NTPC ANTA GPS	8.01	0.18%			
59	Mizoram	7.85	0.18%			
60	Sainj HEP	7.80	0.18%			
61	NTPC Kudgi	7.62	0.17%			
62	AD Hydro	7.09	0.16%			
63	BALCO 2	6.63	0.15%			
64	Sikkim	5.89	0.13%			
65	Ramagundam Stg-1	4.85	0.11%			
66	Costal Energen	4.82	0.11%			
67	Tripura	3.89	0.09%			
68	Chuzachen	3.62	0.08%			
69	Bongaigaon	3.24	0.07%			
70	Dikchu	2.88	0.07%			
71	Singoli Bhagwati	2.47	0.06%			
72	Shree Cement	2.38	0.05%			
73	Ramagundam Stg-3	2.28	0.05%			
74	Ostro Kannada	2.17	0.05%			
75	Simhadri Stg-2	2.06	0.05%			
76	PARBATI II HE	1.61	0.04%			
77	Pondicherry	1.55	0.04%			
78	Nagaland	1.25	0.03%			
79	Lanco Budhil	1.13	0.03%			
80	Dhariwal	0.86	0.02%			
81	ADANI WIND	0.60	0.01%			
82	NTPL	0.53	0.01%			
83	PARAMPUJYA	0.51	0.01%			
84	Sorang HEP,	0.26	0.01%			
85	Meghalaya	0.18	0.00%			
86	GMR Kamalanga	0.12	0.00%			
87	SBSR Power	0.09	0.00%			
88	Adhunik Power	0.07	0.00%			
89	Punjab	0.04	0.00%			
90	Simhapuri Energy	0.03	0.00%			
91	Talcher	0.02	0.00%			
92	Farakka	0.02	0.00%			
93	Kahalgaoon	0.01	0.00%			
Total Volume of top 10		2,846.02	64.55%	Total Volume of top 10	3,599.60	81.64%
Total Volume in PXs		4,408.93		Total Volume in PXs	4,408.93	

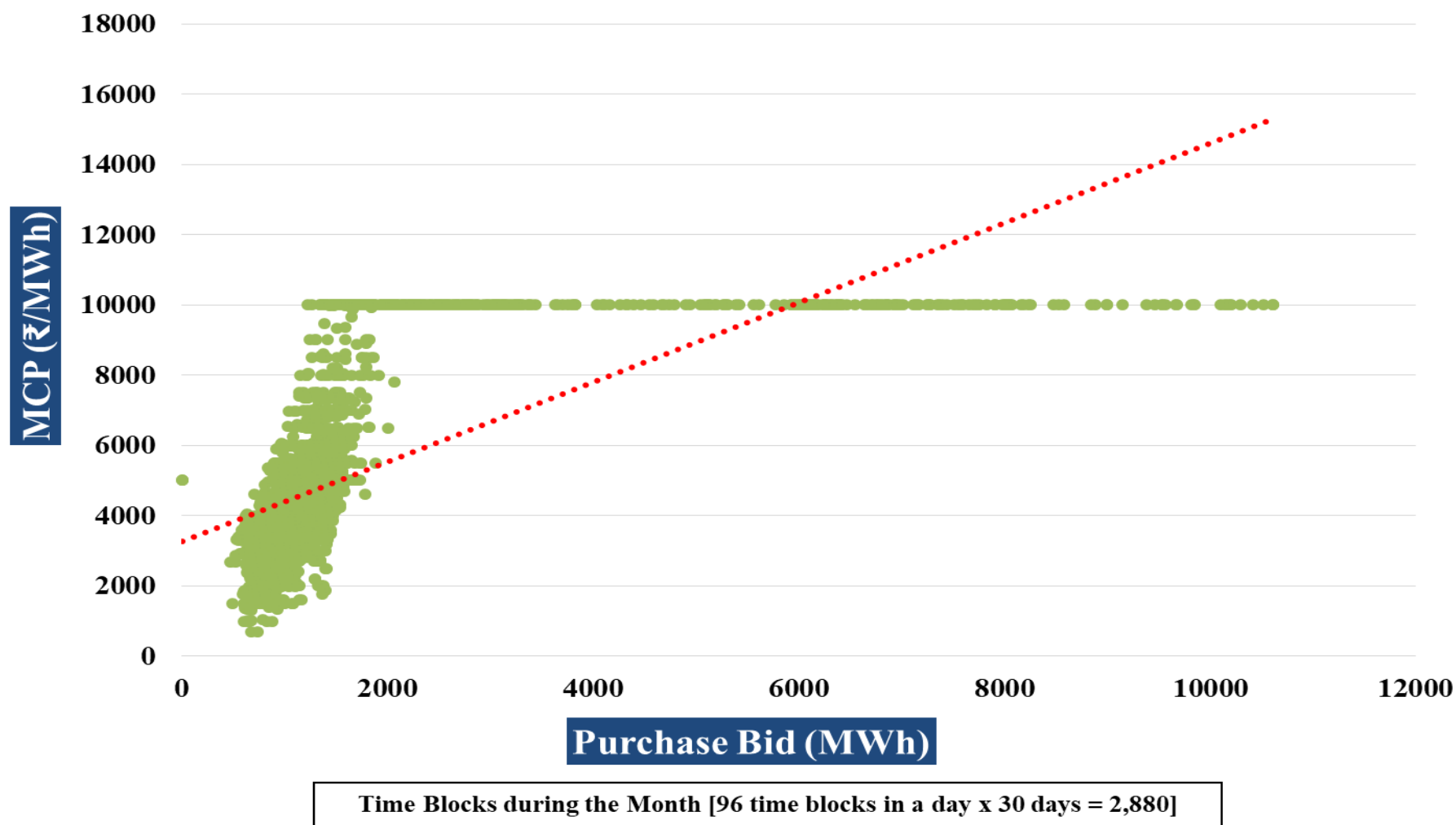
Annexure-VIII**Evening, Day, Night, Morning, Maximum, Minimum, Average MCP (₹/kWh) and Final Scheduled Volume (MU) in RTM**

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)
01-04-2023	3.04	2.42	4.04	2.92	5.50	1.98	3.07	79.49
02-04-2023	3.62	2.38	3.90	4.01	5.50	1.80	3.44	62.10
03-04-2023	3.98	3.27	5.53	3.78	7.36	2.36	4.10	67.90
04-04-2023	4.07	3.33	5.94	4.56	9.46	2.55	4.46	60.97
05-04-2023	4.78	3.46	6.06	4.30	10.00	2.36	4.58	63.23
06-04-2023	3.68	3.98	8.06	4.59	10.00	2.47	5.13	75.91
07-04-2023	4.61	4.17	6.85	6.58	10.00	2.80	5.62	72.08
08-04-2023	5.52	4.21	7.89	6.36	10.00	2.40	5.98	78.11
09-04-2023	4.62	3.16	5.50	6.59	10.00	2.36	4.99	77.65
10-04-2023	4.72	3.86	8.67	5.68	10.00	2.70	5.74	71.60
11-04-2023	6.66	4.36	9.15	10.00	10.00	3.19	7.58	66.91
12-04-2023	5.13	3.77	8.82	8.15	10.00	2.67	6.54	67.59
13-04-2023	5.43	4.45	9.41	8.82	10.00	3.30	7.13	62.46
14-04-2023	5.25	4.94	9.29	8.94	10.00	3.30	7.25	66.25
15-04-2023	4.40	4.82	9.15	8.33	10.00	2.70	6.86	63.02
16-04-2023	4.24	3.13	7.98	10.00	10.00	1.50	6.53	63.04
17-04-2023	4.14	4.26	8.85	8.33	10.00	2.65	6.47	63.31
18-04-2023	6.18	4.96	9.58	10.00	10.00	3.80	7.79	74.89
19-04-2023	3.76	4.30	8.49	8.22	10.00	1.98	6.40	76.89
20-04-2023	3.63	3.34	6.30	6.69	10.00	2.23	5.11	70.28
21-04-2023	3.33	3.35	4.99	4.07	10.00	2.50	3.97	77.18
22-04-2023	3.33	3.13	3.41	3.71	4.80	1.98	3.40	72.40
23-04-2023	2.86	1.42	3.25	3.64	5.50	0.70	2.76	70.67
24-04-2023	3.41	2.77	4.45	3.81	6.00	2.00	3.60	80.49
25-04-2023	3.77	3.35	3.89	4.31	6.00	2.68	3.83	75.08
26-04-2023	3.21	3.18	4.30	3.52	8.00	1.03	3.56	67.04
27-04-2023	3.23	3.80	3.82	3.41	5.50	1.65	3.60	84.95
28-04-2023	3.24	3.34	3.63	3.70	5.00	1.66	3.50	76.30
29-04-2023	2.96	2.90	4.19	3.52	6.00	1.80	3.41	81.76
30-04-2023	2.39	1.99	2.97	3.70	5.00	1.40	2.80	82.90
Maximum	6.66	4.96	9.58	10.00	10.00	3.80	7.79	84.95
Minimum	2.39	1.42	2.97	2.92	4.80	0.70	2.76	60.97
Average	4.11	3.53	6.28	5.81	8.32	2.28	4.97	71.75

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 April, 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
01-04-2023	15:15 - 15:30	1.07	21:00 - 21:15	5.50	18:00 - 18:15	0.57	13:15 - 13:30	1.98
02-04-2023	16:15 - 16:30	0.92	05:15 - 05:30	5.50	01:15 - 01:30	0.39	13:45 - 14:00	1.80
03-04-2023	17:00 - 17:15	1.07	21:15 - 21:30	7.36	20:30 - 20:45	0.42	13:00 - 13:15	2.36
04-04-2023	17:00 - 17:15	1.06	19:00 - 19:15	9.46	08:00 - 08:15	0.29	13:45 - 14:00	2.55
05-04-2023	15:30 - 15:45	0.98	19:00 - 19:15	10.00	08:15 - 08:30	0.42	13:15 - 13:30	2.36
06-04-2023	17:00 - 17:15	1.10	19:00 - 19:15	10.00	08:45 - 09:00	0.63	08:30 - 08:45	2.47
07-04-2023	22:00 - 22:15	1.09	18:45 - 19:00	10.00	09:15 - 09:30	0.50	08:15 - 08:30	2.80
08-04-2023	00:00 - 00:15	1.23	19:00 - 19:15	10.00	18:45 - 19:00	0.54	13:00 - 13:15	2.40
09-04-2023	17:15 - 17:30	1.08	04:30 - 04:45	10.00	07:00 - 07:15	0.54	10:30 - 10:45	2.36
10-04-2023	22:45 - 23:00	0.98	04:45 - 05:00	10.00	07:15 - 07:30	0.52	09:00 - 09:15	2.70
11-04-2023	16:45 - 17:00	0.86	00:00 - 00:15	10.00	13:00 - 13:15	0.49	13:00 - 13:15	3.19
12-04-2023	01:45 - 02:00	1.14	00:00 - 00:15	10.00	08:45 - 09:00	0.39	13:00 - 13:15	2.67
13-04-2023	17:45 - 18:00	1.04	00:00 - 00:15	10.00	23:00 - 23:15	0.40	13:00 - 13:15	3.30
14-04-2023	14:30 - 14:45	0.92	00:00 - 00:15	10.00	18:45 - 19:00	0.39	07:45 - 08:00	3.30
15-04-2023	05:45 - 06:00	1.00	00:00 - 00:15	10.00	23:30 - 23:45	0.47	13:15 - 13:30	2.70
16-04-2023	05:00 - 05:15	1.04	00:00 - 00:15	10.00	00:15 - 00:30	0.46	13:00 - 13:15	1.50
17-04-2023	17:00 - 17:15	1.19	00:00 - 00:15	10.00	00:00 - 00:15	0.35	08:30 - 08:45	2.65
18-04-2023	16:00 - 16:15	1.28	00:00 - 00:15	10.00	00:00 - 00:15	0.37	13:45 - 14:00	3.80
19-04-2023	16:45 - 17:00	1.22	00:00 - 00:15	10.00	00:00 - 00:15	0.49	08:00 - 08:15	1.98
20-04-2023	16:30 - 16:45	1.12	00:00 - 00:15	10.00	04:00 - 04:15	0.53	08:45 - 09:00	2.23
21-04-2023	20:15 - 20:30	1.20	19:15 - 19:30	10.00	04:30 - 04:45	0.54	13:00 - 13:15	2.50
22-04-2023	00:45 - 01:00	1.11	02:15 - 02:30	4.80	11:15 - 11:30	0.54	18:30 - 18:45	1.98
23-04-2023	23:45 - 24:00	1.08	00:00 - 00:15	5.50	06:15 - 06:30	0.52	13:00 - 13:15	0.70
24-04-2023	17:45 - 18:00	1.09	21:15 - 21:30	6.00	08:30 - 08:45	0.56	13:00 - 13:15	2.00
25-04-2023	07:15 - 07:30	1.04	00:00 - 00:15	6.00	16:00 - 16:15	0.53	13:00 - 13:15	2.68
26-04-2023	22:45 - 23:00	1.05	19:15 - 19:30	8.00	07:30 - 07:45	0.34	13:00 - 13:15	1.03
27-04-2023	10:45 - 11:00	1.09	14:30 - 14:45	5.50	22:00 - 22:15	0.63	18:00 - 18:15	1.65
28-04-2023	23:45 - 24:00	1.07	19:15 - 19:30	5.00	14:45 - 15:00	0.53	17:00 - 17:15	1.66
29-04-2023	03:45 - 04:00	1.16	19:15 - 19:30	6.00	18:45 - 19:00	0.40	17:00 - 17:15	1.80
30-04-2023	14:00 - 14:15	1.38	00:15 - 00:30	5.00	08:15 - 08:30	0.54	10:00 - 10:15	1.40

MCP: Market Clearing Price (₹/kWh)

FSV: Final Scheduled Volume (MU)

Sellers and Buyers in Real Time Market (RTM) in the month of April, 2023						
S. No.	Entity Name	Sell		Entity Name	Purchase	
		(MU)	Percent (%)		(MU)	Percent (%)
1	Madhya Pradesh	369.96	17.19%	Telangana	415.21	19.29%
2	NPCIL	282.39	13.12%	Maharashtra	271.67	12.62%
3	Bihar	264.99	12.31%	Punjab	189.65	8.81%
4	Raiasthan	140.69	6.54%	West Bengal	148.33	6.89%
5	Delhi	121.81	5.66%	Gujarat	147.17	6.84%
6	Chhattisgarh	106.20	4.93%	Rajasthan	129.62	6.02%
7	Uttar Pradesh	96.22	4.47%	J&K	128.33	5.96%
8	Odisha	85.91	3.99%	Uttar Pradesh	126.02	5.85%
9	Himachal	66.01	3.07%	Andhra Pradesh	106.63	4.95%
10	West Bengal	59.28	2.75%	Tamil Nadu	84.06	3.91%
11	Maharashtra	50.95	2.37%	Odisha	81.58	3.79%
12	Telangana	33.92	1.58%	Karnataka	55.41	2.57%
13	J&K	26.68	1.24%	Assam	42.34	1.97%
14	Jharkhand	26.42	1.23%	Haryana	24.04	1.12%
15	Haryana	26.27	1.22%	ArcelorMittal Nippon	23.85	1.11%
16	SKS Power	25.75	1.20%	Delhi	22.65	1.05%
17	Kameng HEP	24.18	1.12%	Daman & Diu - Dadra &	21.83	1.01%
18	RKM Power	23.64	1.10%	Uttarakhand	20.89	0.97%
19	Assam	22.11	1.03%	Kerala	15.77	0.73%
20	TRN Energy	21.06	0.98%	Jharkhand	10.68	0.50%
21	DGEN Mega	18.82	0.87%	Tripura	10.60	0.49%
22	Gujarat	17.17	0.80%	Madhya Pradesh	10.06	0.47%
23	Karnataka	17.11	0.79%	DVC	10.01	0.47%
24	ACBIL	15.51	0.72%	Manipur	9.87	0.46%
25	Andhra Pradesh	14.95	0.69%	Meghalaya	7.59	0.35%
26	Palatana	14.92	0.69%	Chhattisgarh	6.58	0.31%
27	Teesta -3	11.73	0.54%	Himachal Pradesh	6.03	0.28%
28	Sasan UMPP	11.50	0.53%	Sikkim	5.98	0.28%
29	Uttarakhand	11.28	0.52%	Bihar	4.49	0.21%
30	Kerala	9.95	0.46%	Railways	3.32	0.15%
31	Dikchu	7.10	0.33%	BHARAT	3.27	0.15%
32	Mahan Energy	6.87	0.32%	Goa WR	2.47	0.11%
33	Tripura	6.82	0.32%	Goa SR	1.75	0.08%
34	Tamil Nadu	6.69	0.31%	Maruti Clean Coal	1.51	0.07%
35	Jindal Power	6.21	0.29%	PARAMPUJYA	1.04	0.05%
36	BAI.CO 2	6.06	0.28%	Arunachal Pradesh	0.46	0.02%
37	NTPC DADRI	6.06	0.28%	Jindal Power	0.42	0.02%
38	NTPL	5.82	0.27%	Coastal Guirat Power	0.39	0.02%
39	MB Power	5.79	0.27%	Gandhar	0.25	0.01%
40	Sembcorp	5.69	0.26%	SKS Power	0.18	0.01%
41	DVC	4.37	0.20%	Kawas	0.16	0.01%
42	Maruti Clean	4.17	0.19%	Jindal Power Ltd. Stg-II	0.14	0.01%
43	Jindal Power	3.74	0.17%	Ratnagiri Gas & Power	0.13	0.01%
44	Raipur Energen	3.70	0.17%	ACBIL	0.13	0.01%
45	Manipur	3.62	0.17%	Sainj HEP	0.04	0.00%
46	Sembcorp	3.35	0.16%			
47	NTPC	3.30	0.15%			
48	Jhabua Power	3.29	0.15%			

49	NTPC ANTA	3.18	0.15%			
50	Sikkim	3.06	0.14%			
51	Sainj HEP	3.01	0.14%			
52	Punjab	3.00	0.14%			
53	Jindal Steel	2.97	0.14%			
54	Singoli Bhagwati	2.48	0.12%			
55	GMR Warora	2.23	0.10%			
56	PARAMPUJYA	2.10	0.10%			
57	JITPL	2.04	0.09%			
58	Arunachal	1.97	0.09%			
59	IL&FS	1.80	0.08%			
60	Daman & Diu -	1.58	0.07%			
61	Coastal Gujrat	1.43	0.07%			
62	Renew Surya	1.16	0.05%			
63	Pondicherry	0.75	0.04%			
64	Sorang HEP,	0.75	0.04%			
65	Ostro Kannada	0.74	0.03%			
66	Karcham	0.69	0.03%			
67	Continuum	0.60	0.03%			
68	Jaypee Nigrie	0.59	0.03%			
69	Chuzachen	0.58	0.03%			
70	Raigarh Energy	0.46	0.02%			
71	Chandigarh	0.41	0.02%			
72	Adhunik Power	0.40	0.02%			
73	Costal Energen	0.38	0.02%			
74	AD Hydro	0.35	0.02%			
75	Shree Cement	0.35	0.02%			
76	NTPC Kudgi	0.34	0.02%			
77	NTPC	0.30	0.01%			
78	NTPC Kawas	0.29	0.01%			
79	ADANI WIND	0.29	0.01%			
80	Ramagundam	0.28	0.01%			
81	Bongaigaon	0.26	0.01%			
82	Ramagundam	0.25	0.01%			
83	Nagaland	0.24	0.01%			
84	DB Power	0.23	0.01%			
85	Ratnagiri Gas	0.20	0.01%			
86	Lanco Budhil	0.19	0.01%			
87	Simhapuri	0.12	0.01%			
88	GMR Kamalanga	0.12	0.01%			
89	Ramagundam	0.08	0.00%			
90	SBSR Power	0.07	0.00%			
91	Simhadri Stg-2	0.06	0.00%			
92	Talcher Stg-2	0.06	0.00%			
93	AGBPP	0.05	0.00%			
94	Mizoram	0.03	0.00%			
Total Volume of top 10		1,593.46	74.03%	Total Volume of top 10	1,746.7	81.14%
Total Volume in PXs		2,152.58		Total Volume in PXs	2,152.5	

Cross Border Electricity Transactions in Day Ahead Market (DAM) in IEX with Nepal and Bhutan during the month of April, 2023			
S. No	Delivery Date	Buy Volume By Nepal (MU)	Buy Volume By Bhutan (MU)
1	01-04-2023	0.00	6.26
2	02-04-2023	8.30	4.39
3	03-04-2023	8.39	2.42
4	04-04-2023	7.57	1.28
5	05-04-2023	7.93	1.06
6	06-04-2023	7.99	0.00
7	07-04-2023	8.47	1.53
8	08-04-2023	8.03	2.78
9	09-04-2023	9.00	2.17
10	10-04-2023	8.11	2.85
11	11-04-2023	8.74	1.14
12	12-04-2023	7.96	0.83
13	13-04-2023	4.69	2.35
14	14-04-2023	4.53	1.17
15	15-04-2023	3.77	0.00
16	16-04-2023	4.96	0.00
17	17-04-2023	5.12	0.00
18	18-04-2023	3.94	0.00
19	19-04-2023	4.02	0.00
20	20-04-2023	3.76	0.00
21	21-04-2023	4.81	0.00
22	22-04-2023	6.39	0.00
23	23-04-2023	6.83	0.00
24	24-04-2023	5.95	0.00
25	25-04-2023	4.52	1.86
26	26-04-2023	4.66	3.30
27	27-04-2023	5.80	5.19
28	28-04-2023	6.14	4.20
29	29-04-2023	5.53	2.39
30	30-04-2023	5.91	1.17
Total		181.80	48.33
Grand Total		230.13	

-: No transaction took place

Note: Cross Border Transactions of Electricity of 230.13 MU (i.e. 181.80 MU buy by Nepal and 48.33 MU buy by Bhutan) happened during April, 2023 in IEX, which is included in DAM Volume of April, 2023 in IEX.

Details of Time Blocks in which Maximum ACP occurred in IEX during April, 2023

In IEX, during the month of April, 2023 the maximum ACP of ₹10.00/kWh were observed on many days during several time blocks. The details of time blocks are shown below:

ACP	Date	Time Blocks	Daily MCP (₹/kWh)
Maximum ACP (₹ 10.00/kWh)	08.04.2023	19:00 - 19:15 & 19:15 - 19:30 Hrs	4.98
	09.04.2023	00:00 - 00:15 to 01:00 - 01:15 Hrs	4.98
	10.04.2023	00:15 - 00:30, 00:30 - 00:45, 18:30 - 18:45 to 23:45 - 24:00 Hrs	6.14
	11.04.2023	00:00 - 00:15 to 01:30 - 01:45, 18:15 - 18:30 to 23:45 - 24:00 Hrs	6.29
	12.04.2023	00:00 - 00:15 to 02:45 - 03:00, 04:00 - 04:15 to 06:15 - 06:30, 18:15 - 18:30 to 23:45 - 24:00 Hrs	6.28
	13.04.2023	00:00 - 00:15 to 02:45 - 03:00, 04:00 - 04:15 to 06:15 - 06:30, 18:30 - 18:45 to 23:45 - 24:00 Hrs	6.07
	14.04.2023	00:00 - 00:15 to 06:15 - 06:30, 18:30 - 18:45 to 23:45-24:00 Hrs	6.25
	15.04.2023	00:00 - 00:15 to 06:15 - 06:30, 18:15 - 18:30 to 23:45-24:00 Hrs	6.32
	16.04.2023	00:00 - 00:15 to 05:45 - 06:00, 19:15 - 19:30 to 23:45-24:00 Hrs	6.18
	17.04.2023	00:00 - 00:15 to 05:45 - 06:00, 17:45 - 18:00 to 23:45-24:00 Hrs	6.39
	18.04.2023	00:00 - 00:15 to 05:45 - 06:00, 06:15 - 06:30 to 07:00 - 07:15, 16:45 - 17:00, 17:00 - 17:15, 17:30 - 17:45 to 23:45-24:00 Hrs	6.74
	19.04.2023	00:00 - 00:15 to 07:30 - 07:45, 15:30 - 15:45 to 23:45-24:00 Hrs	7.03
	20.04.2023	00:00 - 00:15 to 05:45 - 06:00, 15:00 - 15:15 to 15:30 - 15:45, 16:00 - 16:15 to 23:45-24:00 Hrs	6.01
	21.04.2023	00:00 - 00:15 to 05:45 - 06:00, 06:30 - 06:45, 06:45 - 07:00, 16:15 - 16:30 to 23:45 - 24:00 Hrs	6.07
	22.04.2023	00:00 - 00:15 to 02:30 - 02:45, 05:30 - 05:45, 05:45 - 06:00, 16:45 - 17:00, 17:30 - 17:45, 17:45 - 18:00, 18:45 - 19:00 to 23:45 - 24:00 Hrs	5.64
	24.04.2023	19:00 - 19:15 to 19:30 - 19:45, 22:00 - 22:15 to 23:45 - 24:00 Hrs	4.91

Analysis for change in trend of Final Scheduled Volume in DAM on 2nd Sunday of April, 2023 (i.e. 09th April, 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 April, 2023, it is observed that on second Sunday (09th April, 2023), FSV showed increasing trend in comparison to second Saturday (08th April, 2023).

- (i) On second Sunday (09th April, 2023), although there was decrease in purchase on power exchange by some of the States in comparison to second Saturday (08th April, 2023) by **14.69 MU** [i.e. ArcelorMittal Nippon steel (ESIL) (4.85 MU), West Bengal (4.46 MU), Punjab (2.59 MU), Himachal Pradesh (0.75 MU) and Druk Green Power Corporation Limited (DGPCL-Bhutan) (0.62 MU), etc.], there was also increase in purchase on power exchange by some of the States by **40.12 MU** [i.e. Andhra Pradesh (19.73 MU), Gujarat (8.07 MU), Rajasthan (2.81 MU), J&K (2.05 MU) and Tamil Nadu (1.71 MU), etc.]. This resulted in an overall increase in FSV by **25.43 MU** on Sunday (09th April, 2023) as compared to Saturday (08th April, 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).