



भारत सरकार/ Government of India
विद्युत मंत्रालय/ Ministry of Power
केन्द्रीय विद्युत प्राधिकरण/ Central Electricity Authority
आर. ए. प्रभाग/ Regulatory Affairs Division

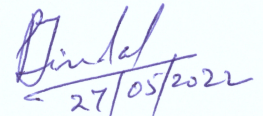
Subject: Monthly Market Monitoring Report for the month of March, 2022-reg.

In the month of March, 2022 a total of 128,478 MU of electricity was transacted in the country out of which 61,907 MU was transacted through ISTS, and the remaining through state controlled generating stations.

A total of 19,169 MU was transacted under Short Term Market, out of which 9,935 MU was transacted through Power Exchanges and remaining happened as bilateral transactions & deviations. Thus, the total short term trade in March, 2022 was 14.92 % of total volume of electricity traded in March, 2022 and 7.73 % was through Power Exchanges.

If we compare these transactions with respect to the electricity supplied through ISTS, the short term transactions constitutes about 30.96 % of ISTS transactions, out of which transaction through the power exchanges constitutes 16.05 %.

The monthly market monitoring report for the month of March, 2022 giving details of electricity transaction happened in the power exchanges and other short term markets is annexed below for reference.


27/05/2022

Pardeep Jindal

Chief Engineer (RA)

To

All Stake holders



सत्यमेव जयते

मार्च, 2022 मासिक मार्केट मॉनिटरिंग रिपोर्ट

Monthly Market Monitoring Report

March, 2022



भारत सरकार/ Government of India

विद्युत मंत्रालय/ Ministry of Power

केन्द्रीय विद्युत प्राधिकरण/ Central Electricity Authority

आर. ए. प्रभाग/ Regulatory Affairs Division

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MARKET MONITORING REPORT
FOR THE MONTH OF MARCH, 2022

SUMMARY

SUMMARY FOR MONTH: MARCH, 2022

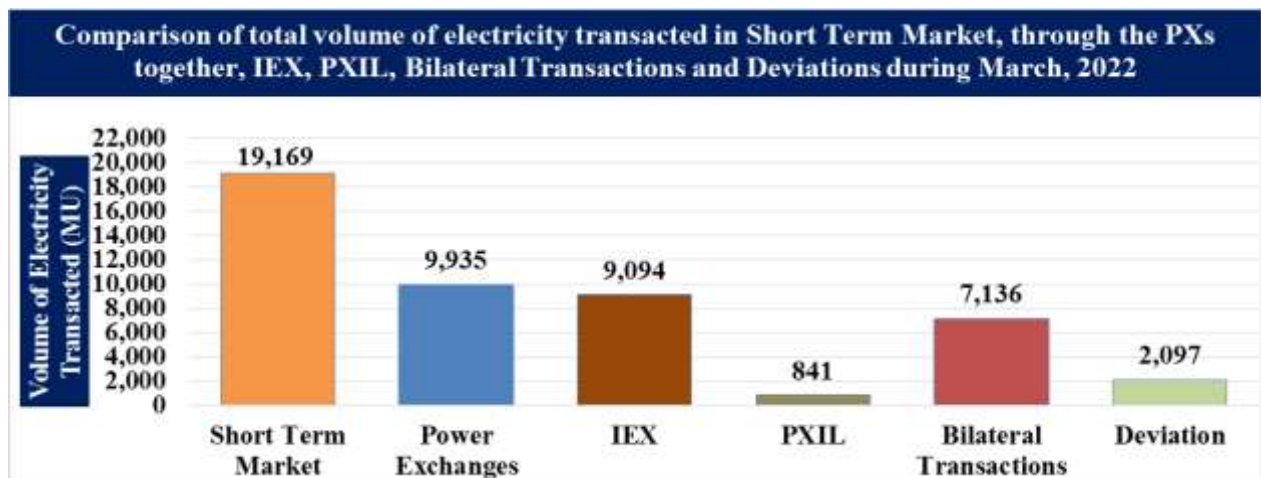
SUMMARY OF ELECTRICITY TRANSACTIONS ON POWER EXCHANGES IN INDIA

- A total volume of **9,935 MU** electricity was transacted in both the power exchanges i.e. IEX & PXIL, during the month of March, 2022. This volume of electricity is on delivery date basis and includes transactions through DAM, GDAM, RTM, TAM and GTAM market segments.

Segment	Transactions happened in PXs (IEX and PXIL combined)			
	FSV (MU)	Average MCP (Rs/kWh)	Congestion	Real Time Curtailment
DAM	5,858.39	8.23	0.00	0.00
GDAM	204.86	8.17	0.00	0.00
RTM	2,020.86	8.17	3.13	0.00
TAM	1,344.81	7.86	58.83	8.53
GTAM	506.21	7.54	0.31	0.00
Total in PXs	9,935.13	8.13*	62.27	8.53

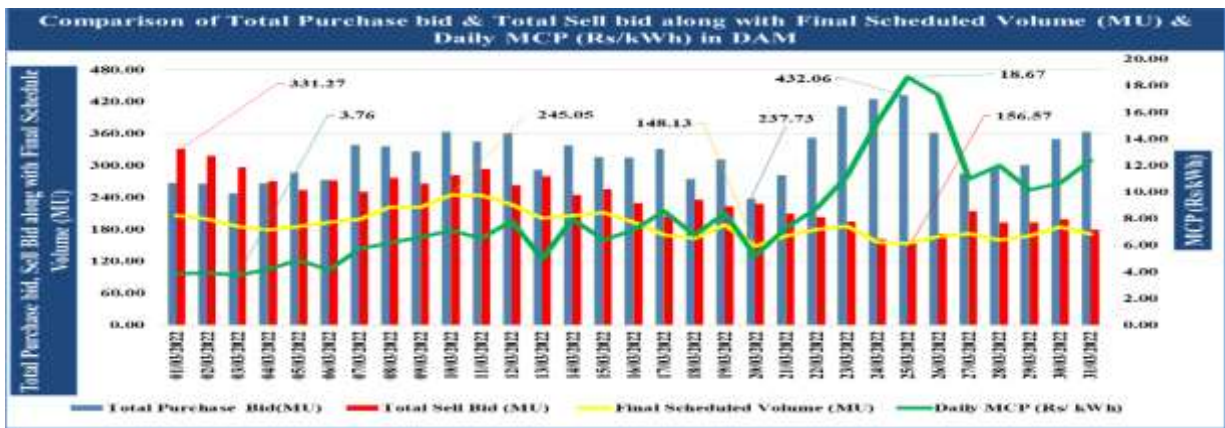
* The total average is weighted average of all market segments.

- Under the Bilateral trade a total of **7,136 MU** of electricity was transacted and **2,097 MU** was transferred as deviation. Thus a total of **19,169 MU** of electricity was transacted as short term trade. In the month of March, 2022 a total of **128,478 MU** of electricity was supplied in the country, thus the share of short term market in the total volume of electricity traded in March, 2022 was **14.92 %**.



- The total volume of congestion that happened during the month of March, 2022 was **62.27 MU** which is only 0.63 % of the total volume of electricity transacted in the power exchanges and 0.049 % of total energy supplied during the month of March, 2022. There was no congestion observed in DAM and GDAM in March, 2022, whereas there was congestion in RTM on 9 days (9th to 12th & 14th to 18th March, 2022), in TAM on 7 days (15th, 19th to 21st, 23rd & 26th to 27th March, 2022) and in GTAM on 2 days (3rd & 13th march, 2022). The total volume of real time curtailment reported in the month of March, 2022 was only **8.53 MU**. The total volume of electricity scheduled at ISTS during the month of March, 2022 was **61,907 MU**. **The total volume of electricity transacted in the short term market was 30.96 % of total volume schedule at ISTS in the month of March, 2022.**
- The variation of Purchase and Sell bids, Final Scheduled Volume and Daily MCP in DAM and RTM during the month of March, 2022 are shown in following figures:

DAM Volume

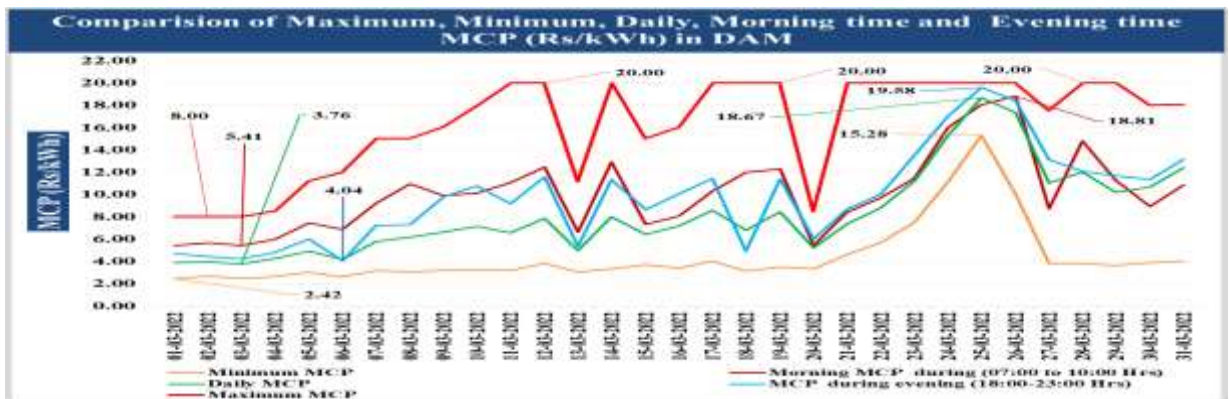


RTM Volume

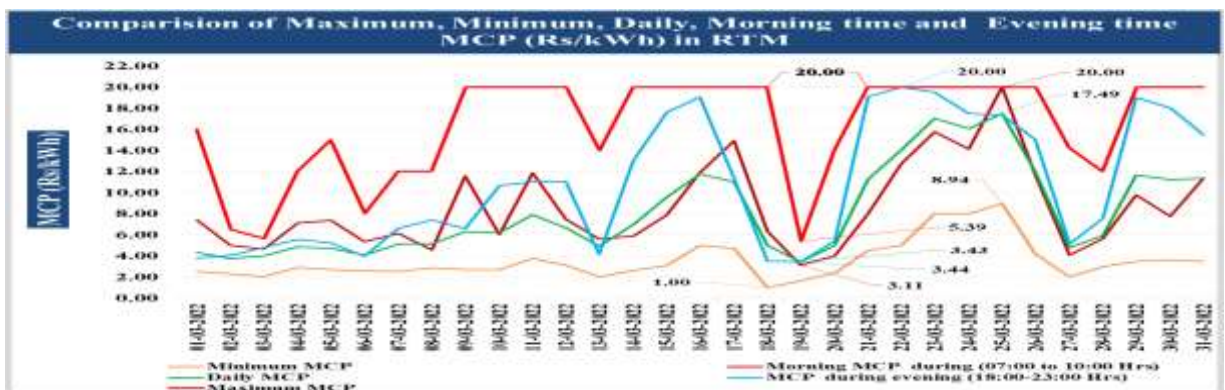


➤ The variation of Maximum, Minimum, Daily, Morning and Evening time MCPs in DAM and RTM during the month of March, 2022 are shown in following figures:

DAM Prices



RTM Prices



**THE MARKET MONITORING
REPORT FOR MARCH, 2022**

ELECTRICITY TRANSACTIONS ON POWER EXCHANGES IN INDIA**1. DAY AHEAD MARKET (DAM)**

- 1.1.** The total volume of electricity transacted on both the power exchanges, viz., IEX and PXIL in the Day Ahead Market (DAM) in the month of March, 2022 was **5,858.59 MU**. The total energy supplied in the country during the month of March, 2022 was 128,478 MU. Thus, the volume of electricity transacted on both the power exchanges in DAM during March, 2022 was 4.56 % of the total energy supplied in the country. Comparing with the total volume of electricity transacted in DAM during the past month .i.e. February, 2022, it was **5,612.83 MU** which was 5.20 % of the total energy supplied [108,032 MU] in the country during February, 2022. Similarly, the total volume of electricity transacted in DAM during previous year .i.e. March, 2021, it was **6,559.88 MU** which was 5.44 % of the total energy supplied [120,635 MU] in the country during March, 2021.
- 1.2.** The volume of electricity transacted on IEX and PXIL during March, 2022 were **5,858.39 MU and 0.20 MU**, respectively, which means that the total volume transacted on IEX was **99.99 %** of the total volume on power exchanges. The volume of electricity transacted on IEX and PXIL during February, 2022 were **5,612.07 MU and 0.76 MU**, respectively, which means that the total volume transacted on IEX was **99.99 %** of the total volume on power exchanges. Also, the volume of electricity transacted on IEX and PXIL during March, 2021, were **6,548.94 MU and 10.94 MU** respectively.
- 1.3.** There was Cross Border Transactions of Electricity of **181.49 MU** (i.e. 147.36 MU buy by Nepal and 34.13 MU buy by Bhutan) happened in DAM in IEX during March, 2022. Whereas, there was Cross Border Transactions of Electricity of **262.01 MU** (157.32 MU buy by Nepal and 104.69 MU buy by Bhutan) happened in DAM in IEX during February, 2022.
- 1.4.** The Average Market Clearing Price (MCP) on IEX during the month of March, 2022 was **Rs 8.23/kWh**, which shows an increase of **85.36 % & 102.21 %** when compared with average MCP's for the month of February, 2022 and March, 2021, which were **Rs 4.44/kWh and Rs 4.07/kWh**, respectively. On PXIL, the average MCP during the month of March, 2022 was **Rs 3.49/kWh**, which shows a decrease of **32.10 % and 19.21 %** when compared with average MCP's for the month of February, 2022 and March, 2021, which were **Rs 5.14/kWh and Rs 4.32/kWh** respectively.

2. DAM MARKET CLEARING PRICE, AREA CLEARING PRICE AND FINAL SCHEDULED VOLUME OF DAM IN THE POWER EXCHANGES

- 2.1. A comparison of the Minimum, Maximum and Average of Daily MCP during the month of March, 2022 with that of February, 2022 and March, 2021 is given in Table- 1A & 1B:**

(a) March, 2022 vis- a -vis February, 2022

Daily MCP (Rs/kWh)	IEX			PXIL		
	February, 2022	January, 2022	% Change	February, 2022	January, 2022	% Change
Minimum	3.76	3.29	14.29	2.00	4.99	-59.92
Maximum	18.67	6.94	169.02	4.99	5.86	-14.85
Average	8.23	4.44	85.36	3.49	5.14	-32.10

Table: 1A**(b) March, 2022 vis- a –vis March, 2021**

Daily MCP (Rs/kWh)	IEX			PXIL		
	February, 2022	February, 2021	% Change	February, 2022	February, 2021	% Change
Minimum	3.76	2.99	25.75	2.00	3.13	-36.10
Maximum	18.67	5.42	244.46	4.99	5.99	-16.69
Average	8.23	4.07	102.21	3.49	4.32	-19.21

Table: 1B

- 2.2.** The maximum Area Clearing Price (ACP) of **Rs 20.00/kWh** in IEX was observed in all 13 regions on 12th, 14th, 17th to 19th, 23rd to 26th & 28th March, 2022 during multiple time blocks. As there was no congestion in transmission system, the MCP for these time-block dates was also **Rs 20.00/kWh**. However, the Daily MCP in IEX on 12th, 14th, 17th to 19th, 23rd to 26th & 28th March, 2022 were **Rs. 7.84/kWh, Rs. 8.00/kWh, Rs. 8.58/kWh, Rs. 6.77/kWh, Rs. 8.42/kWh, Rs. 11.23/kWh, Rs. 15.27/kWh, Rs. 18.67/kWh, Rs 17.33/kWh & Rs. 12.01/kWh, respectively**. Whereas, in PXIL, the maximum ACP of **Rs 4.99/kWh** was observed in all 13 regions during 7 consecutive time blocks from 06:15-06:30 Hrs to 07:45-08:00 Hrs on 7th March, 2022. As there was no congestion in transmission system, the MCP for these time blocks was also **Rs 4.99/kWh**. Also, the Daily MCP in PXIL on 7th March, 2022 was **Rs 4.99/kWh**.
- 2.3.** The minimum ACP of **Rs 2.42/kWh** in IEX was observed in all 13 regions during the time block **03:45-04:00 Hrs** on 1st March, 2022. As there was no congestion in transmission system, the MCP for this time-block was also **Rs 2.42/kWh**. However, the Daily MCP in IEX on pan India basis on 1st March, 2022 was **Rs 3.86/kWh**. Whereas, in PXIL, the minimum ACP of **Rs 2.00/kWh** was observed in all 13 regions during the 32 consecutive time blocks 00:00-00:15 Hrs to 07:45-08:00 Hrs on 31st March, 2022. As there was no congestion in transmission system, the MCP for these time blocks was also **Rs 2.00/kWh**. Also, the Daily MCP in PXIL on 31st March, 2022 was **Rs 2.00/kWh**.
- 2.4.** A comparison of the Minimum and Maximum Area Clearing Price (ACP) during the months of March, 2022 with that of February, 2022 and March, 2021 is given in Table-2A&2B:

(a) March, 2022 vis- a -vis February, 2022

ACP (Rs/kWh)	IEX			PXIL		
	March, 2022	February, 2022	% Change	March, 2022	February, 2022	% Change
Minimum	2.42	2.00	21.00	2.00	3.99	-49.87
Maximum	20.00	20.00	0.00	4.99	5.99	-16.69

Table: 2A**(b) March, 2022 vis- a- vis March, 2021**

ACP (Rs/kWh)	IEX			PXIL		
	March, 2022	March, 2021	% Change	March, 2022	March, 2021	% Change
Minimum	2.42	2.34	3.42	2.00	2.62	-23.66
Maximum	20.00	9.88	102.43	4.99	7.80	-36.03

Table: 2B

2.5. A comparison of the Minimum, Maximum and Average of Final Scheduled Volume (FSV) of electricity transactions happened on IEX and PXIL for a day during the months of March, 2022 with that of February, 2022 and March, 2021 is given in Table-2C & 2D:

(a) March, 2022 vis- a- vis February, 2022

Final Scheduled Volume (MU)	IEX			PXIL		
	March, 2022	February, 2022	% Change	March, 2022	February, 2022	% Change
Minimum	148.13	172.17	-13.96	0.04	0.01	300.00
Maximum	245.05	226.72	0.08	0.16	0.10	60.00
Average	188.98	200.43	-5.71	0.10	0.03	233.33

Table: 2C**(b) March, 2022 vis- a- vis March, 2021**

Final Scheduled Volume (MU)	IEX			PXIL		
	March, 2022	March, 2021	% Change	March, 2022	March, 2021	% Change
Minimum	148.13	181.14	-18.22	0.04	0.01	300.00
Maximum	245.05	251.01	-2.37	0.16	1.22	-86.89
Average	188.98	211.26	-10.55	0.10	0.41	-75.61

Table: 2D**3. REAL TIME MARKET (RTM)**

The transaction of Electricity in Real Time Market was started from 1st June, 2020 with the approval of the CERC in both the power exchanges - IEX and PXIL. The total volume of electricity transacted on both the power exchanges in Real Time Market in March, 2022 was **2,020.86 MU**, out of which, **2,020.86 MU** (100 %) was transacted in IEX and no transaction happened in PXIL. The Final Scheduled Volume (FSV), Daily Market Clearing Prices (MCP) and Area Clearing Prices (ACP) in Real Time Market during the month of March, 2022 as compared with February, 2022 and March, 2021 are as given in table 3A, 3B & 3C:

(i) Final Scheduled Volume:

Exchange	Period	Final Scheduled Volume (MU)			
		Total	Minimum	Maximum	Average
IEX	March, 2022	2020.86	47.92	96.60	65.19
	February, 2022	1555.78	38.02	88.64	55.56
	Change % (Month over Month)	29.89	26.04	8.98	17.33
	March, 2021	1413.96	34.64	62.77	45.61
	Change % (Year over Year)	42.92	38.34	53.90	42.93
PXIL	March, 2022	-	-	-	-
	February, 2022	-	-	-	-
	Change % (Month over Month)	NA	NA	NA	NA
	March, 2021	-	-	-	-
	Change % (Year over Year)	NA	NA	NA	NA

-: No transaction happened

NA: Not Applicable

Table-3A

(ii) Daily Market Clearing Price (MCP):

Exchange	Period	Daily MCP (Rs/kWh)		
		Minimum	Maximum	Average
IEX	March, 2022	3.43	17.49	8.17
	February, 2022	3.13	7.08	4.35
	Change % (Month over Month)	9.58	147.03	87.82
	March, 2021	2.60	6.20	3.73
	Change % (Year over Year)	31.92	182.10	3119.0
PXIL	March, 2022	-	-	-
	February, 2022	-	-	-
	Change % (Month over Month)	NA	NA	NA
	March, 2021	-	-	-
	Change % (Year over Year)	NA	NA	NA

-: No transaction happened

NA: Not Applicable

Table-3B

(iii) Area Clearing Price (ACP):

Exchange	Period	ACP (Rs/kWh)	
		Minimum	Maximum
IEX	March, 2022	1.00	20.000
	February, 2022	1.64	20.00
	Change % (Month over Month)	-39.02	0.00
	March, 2021	1.43	19.99
	Change % (Year over Year)	-30.07	0.05
PXIL	March, 2022	-	-
	February, 2022	-	-
	Change % (Month over Month)	NA	NA
	March, 2021	-	-
	Change % (Year over Year)	NA	NA

-: No transaction happened

NA: Not Applicable

Table -3C

4. GREEN DAY AHEAD MARKET (GDAM):

The transaction of electricity in Green Day Ahead Market (GDAM) has been started in IEX from 27th October, 2021 with the approval of the CERC. The total volume of electricity transacted in GDAM in the month of March, 2022 was **204.82 MU** at an average price MCP of **Rs 8.09/kWh**. The Final Scheduled Volume (FSV), Daily 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 March, 2022 are given below:

i) Final Scheduled Volume in IEX:

Segment	Period	Final Scheduled Volume (MU)			
		Total	Minimum	Maximum	Average
Solar	March, 2022	67.87	0.47	6.10	2.19
	February, 2022	46.09	0.32	3.38	1.65
	% Change (Month over Month)	47.26	46.88	80.47	32.73
Non Solar	March, 2022	136.95	2.64	6.38	4.42
	February, 2022	145.12	3.99	6.16	5.18
	% Change (Month over Month)	-5.63	-33.83	3.57	-14.67
Hydro	March, 2022	-	-	-	-
	February, 2022	-	-	-	-

-: No transaction happened

NA: Not Applicable

Table-4A

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

Exchange	Period	Prices (Rs/kWh)				
		Daily MCP (Rs/kWh)			ACP (Rs/kWh)	
		Minimum	Maximum	Average	Minimum	Maximum
Solar and Non Solar	March, 2022	4.01	17.34	8.09	3.25	20.00
	February, 2022	3.55	6.68	4.91	2.50	18.00
	% Change (Month over Month)	12.96	159.58	64.77	30.00	11.11

-: No transaction happened

NA: Not Applicable

Table-4B

- 4.1.** In the month of March, 2022, there was no transmission congestion in IEX in Green Day Ahead Market, hence one nation one price was observed for all **31 days** during the month. Similarly, in the month of February, 2022, there was no transmission congestion in IEX in GDAM, hence one nation one price was observed for all **28 days** during the month.
- 4.2.** There was **no** real time curtailment in IEX in Green Day Ahead Market during the month of March, 2022 and February, 2022, respectively.
- 4.3.** The **top 10 sellers** on the power exchanges in **Green Day Ahead Market (GDAM)** in the month of March, 2022 were **Karnataka, Adani Hybrid Energy Jaisalmer Three Limited (Solar), Adani Green Solar Jaisalmer, Madhya Pradesh, Renew Solar Energy (Jharkhand Three) Pvt. Ltd., J&K, Andhra Pradesh, Renew Solar Urja Private Ltd.,**

Azure Power Maple Pvt Ltd and Adani Hybrid Energy Jaisalmer Two Limited (Solar), which constituted **91.66 %** of the market volume.

4.4. The top 10 purchasers on the power exchanges in **Green Day Ahead Market (GDAM)** in the month of March, 2022 were **Assam, Dadra & Nagar Haveli, Maharashtra, Punjab, West Bengal, Jharkhand, Uttar Pradesh, Orissa, Kerala and Delhi**, which constituted **89.14 %** of the market volume.

5. TERM AHEAD MARKET (TAM)

Term Ahead Market (TAM) (on Trade Date Basis)

- 5.1.** The total volume of electricity transacted on both the power exchanges in Term Ahead Market in March, 2022 on trade date basis was **1,316.99 MU**, out of which, **716.62 MU (54.41%)** was transacted on IEX and **600.37 MU (45.59%)** was transacted on PXIL.
- 5.2.** The total volume of electricity transacted on both the power exchanges in Term Ahead Market in February, 2022 on trade date basis was **1,400.36 MU**, out of which, **617.84 MU (44.12%)** was transacted on IEX and **782.52 MU (55.88%)** was transacted on PXIL.
- 5.3.** Similarly, total volume of electricity transacted during March, 2021 in Term Ahead Market on trade date basis on both the power exchanges was **685.38 MU**, out of which, **332.18 MU (48.47%)** was transacted on IEX and **353.20 MU (51.53%)** was transacted on PXIL.
- 5.4.** With respect to the total energy supplied during month of March, 2022 in the country, the volume of electricity traded on power exchanges in TAM on trade date basis represents **1.02 %** of the total energy supplied. The same was **1.30 %** in February, 2022 and **0.57 %** in March, 2021.
- 5.5.** In the month of March, 2022, there was transmission congestion of **53.47 MU** in Day Ahead Contingency contract & **0.15 MU** in Daily/Anyday contract in IEX in TAM. Whereas, In PXIL there was transmission congestion of **5.21 MU** in Daily/ Anyday contract in TAM during the month of March, 2022.
- 5.6. The comparison of total volume of electricity transacted and Average MCP on both the power exchanges in Term Ahead Market (TAM) during March, 2022 with February, 2022 and March, 2021 is given in Table- 5A, 5B & 5C:**

(a) March, 2022 vis- a- vis February, 2022 (on trade Date Basis)

Contract Type	IEX			PXIL		
	March, 2022	February, 2022	% Change	March, 2022	February, 2022	% Change
Intra Day (MU)	2.61	-	NA	1.34	1.41	-4.96
Day Ahead Contingency(MU)	408.44	168.27	142.73	366.64	534.99	-31.47
Daily/ AnyDay (MU)	305.57	449.57	-32.03	232.39	246.12	-5.58
Weekly (MU)	-	-	NA	-	-	NA

- : No Transaction happened

NA: Not Applicable

Table: 5A

(b) March, 2022 vis- a- vis March, 2021 (on trade Date Basis)

Contract Type	IEX			PXIL		
	March, 2022	March, 2021	% Change	March, 2022	February, 2021	% Change
Intra Day (MU)	2.61	3.62	-27.90	1.34	12.07	-88.90
Day Ahead Contingency(MU)	408.44	46.08	786.37	366.64	-	NA
Daily/ AnyDay (MU)	305.57	282.48	8.17	232.39	341.13	-31.88
Weekly (MU)	-	-	NA	-	-	NA

- : No Transaction happened

NA: Not Applicable

Table: 5B**(c) Average MCP, March, 2022 vis- a- vis March, 2021 and February, 2022 (on trade Date Basis)**

Exchange	Period	Average MCP (Rs/kWh)			
		Intra Day	Day Ahead Contingency	Daily or Any Day	Weekly
IEX	March, 2022	13.07	9.63	7.72	-
	February, 2022	-	5.88	4.67	-
	%Change (Month over Month)	NA	63.78	65.31	NA
	March, 2021	4.04	3.97	3.74	-
	%Change Year over Year)	223.51	142.57	106.42	NA
PXIL	March, 2022	12.47	9.05	8.58	-
	February, 2022	5.30	4.48	4.53	-
	%Change (Month over Month)	135.28	102.01	89.40	NA
	March, 2021	4.81	-	3.94	-
	%Change (Year over Year)	159.25	NA	117.77	NA

-: No transaction happened

NA: Not Applicable

Table: 5C**Term Ahead Market (TAM) (on delivery Date Basis)**

- 5.7.** The total volume of electricity transacted on both the power exchanges in Term Ahead Market in March, 2022 on delivery date basis was **1,344.81 MU**, out of which, **822.71 MU** (61.18 %) was transacted on IEX and **522.10 MU** (38.82%) was transacted on PXIL.
- 5.8.** The total volume of electricity transacted on both the power exchanges in Term Ahead Market in February, 2022 on delivery date basis was **1,261.73 MU**, out of which, **526.80 MU** (41.75 %) was transacted on IEX and **734.93 MU** (58.25 %) was transacted on PXIL.
- 5.9.** Similarly, total volume of electricity transacted during March, 2021 in Term Ahead Market on both the power exchanges on delivery date basis was **622.72 MU**, out of which, **234.18 MU** (37.61 %) was transacted on IEX and **388.54 MU** (62.39%) was transacted on PXIL.
- 5.10.** With respect to the total energy supplied during the month of March, 2022 in the country, the volume of electricity traded on the power exchanges in TAM on delivery date basis

represents **1.05 %** of the total energy supplied. The same was **1.17 %** in February, 2022 and **0.52 %** in March, 2021.

5.11. In the month of March, 2022, there was real time curtailment of **8.53 MU** in TAM. Out of which **7.52 MU** happened under Daily/Anyday contract in IEX, whereas, in PXIL there was real time curtailment of **1.01 MU** happened under Daily/Anyday contract in TAM.

5.12. The comparison of total volume of electricity transacted and Average MCP in both the power exchanges in Term Ahead Market (TAM) on delivery date basis during March, 2022 with February, 2022 and March, 2021 is given in Table – 5D, 5E & 5F:

(a) March, 2022 vis- a- vis February, 2022 (on Delivery Date Basis)

Contract Type	IEX			PXIL		
	February, 2022	February, 2022	% Change	February, 2022	February, 2022	% Change
Intra Day (MU)	2.61	-	NA	1.34	1.41	-4.96
Day Ahead Contingency(MU)	387.89	163.00	137.97	377.17	526.84	-28.41
Daily/Any Day (MU)	432.21	363.80	18.80	143.59	206.68	-30.53
Weekly (MU)	-	-	NA	-	-	NA

- : No transaction happened

NA: Not Applicable

Table: 5D

(b) March, 2022 vis- a- vis March, 2021 (on Delivery Date Basis)

Contract Type	IEX			PXIL		
	March, 2022	March, 2021	% Change	March, 2022	March, 2021	% Change
Intra Day (MU)	2.61	3.62	-27.90	1.34	12.07	-88.90
Day Ahead Contingency MU)	387.89	46.66	731.31	377.17	-	NA
Daily/ Any Day (MU)	432.21	183.90	135.02	143.59	376.47	-61.86
Weekly (MU)	-	-	NA	-	-	NA

-: No transaction happened

NA: Not Applicable

Table: 5E

(c) Average MCP, March, 2022 vis- a- vis March, 2021 and February, 2022 (on Delivery Date Basis)

Exchange	Period	Average MCP (Rs/kWh)			
		Intra Day	Day Ahead Contingency	Daily or Any Day	Weekly
IEX	March, 2022	13.07	9.31	6.11	-
	February, 2022	-	5.88	4.10	-
	%Change (Month over Month)	NA	58.33	49.02	NA
	March, 2021	4.04	3.94	3.49	-
	%Change Year over Year)	223.51	136.29	75.07	NA
PXIL	March, 2022	12.47	8.70	6.85	-
	February, 2022	5.30	4.48	4.08	-
	%Change	135.28	94.20	67.89	NA

	(Month over Month)				
	March, 2021	3.99	-	3.33	-
	%Change (Year over Year)	32.83	NA	22.52	NA

-: No transaction happened

NA: Not Applicable

Table: 5F**6. GREEN TERM AHEAD MARKET (GTAM):**

The transaction of electricity in Green Term Ahead Market was started in IEX w.e.f. 21st August, 2020 onwards, whereas, in PXIL, GTAM (Non-Solar) was started w.e.f. 24th March, 2021 and GTAM (Solar) w.e.f. June, 2021 onwards. The total volume of electricity transacted in both the power exchanges in GTAM on trade date basis was **497.46 MU** (189.30 MU in Solar and 308.16 MU in non-Solar), whereas, the same on delivery date basis was **506.21 MU** (191.58 MU in Solar and 314.63 MU in Non-Solar), respectively. The total volume of electricity transacted in Solar Energy Segment in GTAM in Day Ahead Contingency, Intraday, Daily/ Anyday and Weekly contracts during March, 2022 on trade date basis and delivery date basis has been shown in Tables 6A to 6H.

6.1. Solar Energy Segment in GTAM (On Trade date basis)

The Final Scheduled Volume and the Price of electricity transacted in GTAM in IEX & PXIL during March, 2022 and its comparison with February, 2022 has been shown in Table 6A & 6B below.

(i) Final Scheduled Volume:

Exch -ange	Solar Energy Contract	Period	Final Scheduled Volume (MU)			
			Total	Minimum	Maximum	Average
IEX	Day Ahead Contingency	March, 2022	43.37	0.03	4.77	1.67
		February, 2022	24.40	0.18	2.12	0.90
		%Change (Month over Month)	77.75	-83.33	125.00	85.56
		March, 2021	21.44	0.06	2.03	0.69
		%Change (Year over Year)	102.29	-50.00	134.98	142.03
	Intraday	March, 2022	-	-	-	-
		February, 2022	1.39	0.05	0.53	0.09
		%Change (Month over Month)	NA	NA	NA	NA
		March, 2021	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
IEX	Daily/ Anyday	March, 2022	5.18	1.49	2.13	1.73
		February, 2022	7.49	7.49	7.49	7.49
		%Change (Month over Month)	-30.84	-80.11	-71.56	-76.90
		March, 2021	-	-	-	-
	%Change (Year over Year)	NA	NA	NA	NA	
	Weekly	March, 2022	-	-	-	-
		February, 2022	6.52	6.52	6.52	6.52
%Change		NA	NA	NA	NA	

		(Month over Month)				
		March, 2021	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
PXIL	Day Ahead Contingency	March, 2022	140.31	1.52	7.71	4.53
		February, 2022	145.06	3.77	7.39	5.18
		%Change (Month over Month)	-3.27	-59.68	4.33	-12.55
	Intraday	March, 2022	-	-	-	-
		February, 2022	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Daily/ Anyday	March, 2022	0.44	0.44	0.44	0.44
		February, 2022	0.59	0.59	0.59	0.59
		%Change (Month over Month)	-25.42	-25.42	-25.42	-25.42
	Weekly	March, 2022	-	-	-	-
		February, 2022	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA

-: No transaction happened

NA: Not Applicable

Table-6A

(ii) Daily Market Clearing Price (MCP):

Exchange	Solar Energy Contract	Period	Prices(Rs/kWh)		
			Minimum	Maximum	Average
IEX	Day Ahead Contingency	March, 2022	3.50	17.54	6.08
		February, 2022	3.61	5.97	4.19
		%Change (Month over Month)	-3.05	193.80	45.11
		March, 2021	3.42	5.00	4.17
		%Change (Year over Year)	2.34	250.8	45.80
	Intraday	March, 2022	-	-	-
		February, 2022	3.60	3.60	3.60
		%Change (Month over Month)	NA	NA	NA
		March, 2021	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Daily/Anyday	March, 2022	5.00	5.20	5.07
		February, 2022	3.96	3.96	3.96
		%Change (Month over Month)	26.26	31.31	28.03
		March, 2021	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Weekly	March, 2022	-	-	-
		February, 2022	3.97	3.97	3.97
		%Change (Month over Month)	NA	NA	NA
		March, 2021	-	-	-

		%Change (Year over Year)	NA	NA	NA
PXIL	Day Ahead Contingency	March, 2022			
		February, 2022	3.77	6.24	4.70
		%Change (Month over Month)	4.24	124.52	40.00
	Intraday	March, 2022	-	-	-
		February, 2022	-	-	-
		%Change (Month over Month)	NA	NA	NA
	Daily/ Anyday	March, 2022	4.60	4.60	4.60
		February, 2022	4.50	4.50	4.50
		%Change (Month over Month)	2.22	2.22	2.22
	Weekly	March, 2022		-	
		February, 2022		-	
		%Change (Month over Month)		NA	

∴ No transaction happened

NA: Not Applicable

Table-6B

6.2. Solar Energy Segment in GTAM (On Delivery date basis)

The Final Scheduled Volume and the Price of electricity transacted in GTAM in IEX & PXIL during March, 2022 and its comparison with February, 2022 has been shown in Table 6C & 6D below.

(i) Final Scheduled Volume:

Exch -ange	Solar Energy Contract	Period	Final Scheduled Volume (MU)			
			Total	Minimum	Maximum	Average
IEX	Day Ahead Contingency	March, 2022	43.64	0.03	4.77	1.68
		February, 2022	22.43	0.15	2.06	0.83
		%Change (Month over Month)	94.56	-80.00	131.55	102.41
		March, 2021	22.18	0.06	2.03	0.72
		%Change (Year over Year)	96.75	-50.00	134.98	133.33
		March, 2022	-	-	-	-
	Intraday	February, 2022	1.39	0.05	0.53	0.09
		%Change (Month over Month)	NA	NA	NA	NA
		March, 2021	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
		March, 2022	3.69	0.12	0.26	0.20
	Daily/Anyday	February, 2022	7.49	0.64	1.55	1.25
		%Change (Month over Month)	-50.73	-81.25	-83.23	-84.00
		March, 2021	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
		March, 2022	-	-	-	-
	Weekly	February, 2022	6.52	0.93	0.93	0.93
		%Change	NA	NA	NA	NA

		(Month over Month)				
		March, 2021	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
PXIL	Day Ahead Contingency	March, 2022	143.23	1.52	7.71	4.62
		February, 2022	145.39	3.77	7.39	5.19
		%Change (Month over Month)	-1.49	-59.68	4.33	-10.98
	Intraday	March, 2022	-	-	-	-
		February, 2022	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Daily/Anyday	March, 2022	1.03	0.06	0.06	0.06
		February, 2022	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Weekly	March, 2022	-			
		February, 2022	-			

-: No transaction happened

NA: Not Applicable

Table-6C

(ii) Daily Market Clearing Price (MCP):

Exchange	Solar Energy Contract	Period	Prices(Rs/kW)		
			Minimum	Maximum	Average
IEX	Day Ahead Contingency	March, 2022	3.50	17.54	5.79
		February, 2022	3.61	5.97	4.20
		%Change (Month over Month)	-3.05	193.80	37.86
		March, 2021	3.42	5.00	4.18
		%Change (Year over Year)	2.34	250.80	38.52
	Intraday	March, 2022	-	-	-
		February, 2022	3.60	3.60	3.60
		%Change (Month over Month)	NA	NA	NA
		March, 2021	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Daily/Anyday	March, 2022	5.00	5.00	5.00
		February, 2022	3.96	3.96	3.96
		%Change (Month over Month)	26.26	26.26	26.26
		March, 2021	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Weekly	March, 2022	-	-	-
		February, 2022	3.97	3.97	3.97
		%Change (Month over Month)	NA	NA	NA
		March, 2021	-	-	-
		%Change (Year over Year)	NA	NA	NA
PXIL	Day Ahead Contingency	March, 2022	3.93	14.01	6.35
		February, 2022	3.77	6.24	4.72
		%Change	4.24	124.52	34.53

		(Month over Month)			
Intraday		March, 2022	-	-	-
		February, 2022	-	-	-
		%Change (Month over Month)	NA		
Daily/Anyday		March, 2022	4.50	4.60	4.54
		February, 2022	-	-	-
		%Change (Month over Month)	NA	NA	NA
Weekly		March, 2022	-		
		February, 2022	-		

:- No transaction happened

NA: Not Applicable

Table-6D

- In March, 2022, there was no transmission congestion in GTAM (Solar) in both IEX and PXIL.
- In March, 2022, there was no real time curtailment in GTAM (Solar) in both IEX & PXIL.

6.3. Non-Solar Energy Segment in GTAM (On Trade date basis)

The total volume of electricity transacted on both the power exchanges in non-Solar Energy Segment in GTAM in Day Ahead Contingency, Intraday, Daily/ Anyday and Weekly contracts during March, 2022 on trade date basis and delivery date basis has been shown in Tables 6E to 6H.

The Final Scheduled Volume and the Price of electricity transacted in Non-Solar GTAM in IEX & PXIL during March, 2022 on trade date basis and its comparison with February, 2022 has been shown in Table 6E & 6F below.

(i) Final Scheduled Volume:

Exchange	Non- Solar Energy Contract	Period	Final Scheduled Volume (MU)			
			Total	Minimum	Maximum	Average
IEX	Day Ahead Contingency	March, 2022	137.03	3.04	6.93	4.42
		February, 2022	216.42	2.24	13.45	7.73
		%Change (Month over Month)	-36.68	35.71	-48.48	-42.82
		March, 2021	29.67	0.22	5.26	1.24
		%Change (Year over Year)	361.85	1281.82	31.75	256.45
		March, 2022	-	-	-	-
	Intraday	February, 2022	0.02	0.02	0.02	0.02
		%Change (Month over Month)	NA	NA	NA	NA
		March, 2021	0.35	0.35	0.35	0.35
		%Change (Year over Year)	NA	NA	NA	NA
		March, 2022	1.43	0.22	0.67	0.48
	Daily/ Anyday	February, 2022	5.22	0.28	2.48	1.31
		%Change (Month over Month)	-72.61	-21.43	-72.98	-63.36
		March, 2021	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
		March, 2022	-	-	-	-
	Weekly	February, 2022	-	-	-	-

		%Change (Month over Month)	NA	NA	NA	NA
		March, 2021	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
PXIL	Day Ahead Contingency	March, 2022	166.87	0.59	10.75	5.38
		February, 2022	248.43	1.13	15.26	8.87
		%Change (Month over Month)	-32.83	-47.79	-29.55	-39.35
	Intraday	March, 2022	2.83	1.27	1.56	1.41
		February, 2022	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Daily/ Anyday	March, 2022	-	-	-	-
		February, 2022	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Weekly	March, 2022	-			
February, 2022		-				

:- No transaction happened

NA: Not Applicable

Table-6E

(ii) Daily Market Clearing Price (MCP):

Exchange	Non- Solar Energy Contract	Period	Prices(Rs/kWh)		
			Minimum	Maximum	Average
IEX	Day Ahead Contingency	March, 2022	3.73	18.87	8.43
		February, 2022	3.96	6.10	4.52
		%Change (Month over Month)	-5.81	209.34	86.50
		March, 2021	4.00	5.10	4.40
		%Change (Year over Year)	-6.75	270.00	91.59
	Intraday	March, 2022	-	-	-
		February, 2022	5.00	5.00	5.00
		%Change (Month over Month)	NA	NA	NA
		March, 2021	5.10	5.10	5.10
		%Change (Year over Year)	NA	NA	NA
	Daily/ Anyday	March, 2022	4.70	6.00	5.23
		February, 2022	4.65	4.70	4.66
		%Change (Month over Month)	1.08	27.66	12.23
		March, 2021	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Weekly	March, 2022	-	-	-
		February, 2022	-	-	-
		%Change (Month over Month)	NA	NA	NA
		March, 2021	-	-	-
		%Change (Year over Year)	NA	NA	NA
		March, 2022	3.73	18.87	8.43

PXIL	Day Ahead Contingency	February, 2022	4.22	19.11	8.88
		% Change (Month over Month)	4.06	6.85	4.95
	Intraday	March, 2022	3.94	178.98	79.39
		February, 2022	7.00	12.02	9.51
		% Change (Month over Month)	-	-	-
	Daily/ Anyday	March, 2022	NA	NA	NA
		February, 2022	-	-	-
		% Change (Month over Month)	-	-	-
	Weekly	March, 2022	-	-	-
		February, 2022	-	-	-

-: No transaction happened

NA: Not Applicable

Table-6F

6.4. Non-Solar Energy Segment in GTAM (On Delivery date basis)

The Final Scheduled Volume and the Price of electricity transacted in GTAM in IEX & PXIL during March, 2022 and its comparison with February, 2022 has been shown in Table 6G & 6H below.

(i) Final Scheduled Volume:

Exch- ange	Non- Solar Energy Contract	Period	Final Scheduled Volume (MU)			
			Total	Minimum	Maximum	Average
IEX	Day Ahead Contingency	March, 2022	138.79	3.04	6.93	4.48
		February, 2022	213.81	2.24	13.45	7.64
		%Change (Month over Month)	-35.09	35.71	-48.48	-41.36
		March, 2021	31.68	0.22	5.26	1.32
		%Change (Year over Year)	338.10	1281.82	31.75	239.39
	Intraday	March, 2022	-	-	-	-
		February, 2022	0.02	0.02	0.02	0.02
		%Change (Month over Month)	NA	NA	NA	NA
		March, 2021	0.35	0.35	0.35	0.35
		%Change (Year over Year)	NA	NA	NA	NA
	Daily/Anyday	March, 2022	1.21	0.07	0.11	0.09
		February, 2022	6.28	0.11	0.30	0.22
		%Change (Month over Month)	-80.73	-36.36	-63.33	-59.09
		March, 2021	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA
	Weekly	March, 2022	-	-	-	-
		February, 2022	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		March, 2021	-	-	-	-
		%Change (Year over Year)	NA	NA	NA	NA

PXIL	Day Ahead Contingency	March, 2022	171.80	1.69	10.75	5.54
		February, 2022	244.01	1.10	15.26	8.71
		%Change (Month over Month)	-29.59	53.64	-29.55	-36.39
	Intraday	March, 2022	2.83	1.27	1.56	1.41
		February, 2022	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Daily/Anyday	March, 2022	-	-	-	-
		February, 2022	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Weekly	March, 2022	-			
		February, 2022	-			

-: No transaction happened

NA: Not Applicable

Table-6G

(ii) Daily Market Clearing Price (MCP):

Exchange	Non- Solar Energy Contract	Period	Prices(Rs/kW)		
			Minimum	Maximum	Average
IEX	Day Ahead Contingency	March, 2022	3.73	18.87	8.13
		February, 2022	3.96	6.10	4.50
		%Change (Month over Month)	-5.81	209.34	80.67
		March, 2021	4.00	5.10	4.40
		%Change (Year over Year)	-6.75	270.00	84.77
	Intraday	March, 2022	-	-	-
		February, 2022	5.00	5.00	5.00
		%Change (Month over Month)	NA	NA	NA
		March, 2021	5.10	5.10	5.10
		%Change (Year over Year)	NA	NA	NA
	Daily/Anyday	March, 2022	4.70	5.00	4.76
		February, 2022	4.65	4.70	4.66
		%Change (Month over Month)	1.08	6.38	2.15
		March, 2021	-	-	-
		%Change (Year over Year)	NA	NA	NA
	Weekly	March, 2022	-	-	-
		February, 2022	-	-	-
		%Change (Month over Month)	NA	NA	NA
		March, 2021	-	-	-
		%Change (Year over Year)	NA	NA	NA
PXIL	Day Ahead Contingency	March, 2022	4.22	19.11	8.56
		February, 2022	4.06	6.85	4.94
		%Change (Month over Month)	3.94	178.98	73.28
	Intraday	March, 2022	7.00	12.02	9.51
		February, 2022	-	-	-
		%Change	NA	NA	NA

		(Month over Month)			
Daily/Anyday		March, 2022	-	-	-
		February, 2022	-	-	-
		%Change (Month over Month)	NA	NA	NA
Weekly		March, 2022		-	
		February, 2022		-	

-: No transaction happened

NA: Not Applicable

Table-6H

- In March, 2022, March, 2022, there was transmission congestion of **0.31 MU** (0.22 in Day Ahead Contingency contract & 0.09 MU in Daily/Any Day contract in GTAM (Non Solar) in IEX. Whereas, there was no transmission congestion in GTAM (Non Solar) in PXIL.
- In March, 2022, there was no real time curtailment in GTAM (Non-Solar) in both IEX & PXIL.

7. **BILATRAL TRANSACTIONS:**

The total volume of electricity transacted through **Bilateral transactions** in the month of March, 2022 was **7,136.37 MU**. The total buy volume of electricity transacted in bilateral market through direct transactions and traders in the month of March, 2022 were **1,526.31 MU** and **5,610.06 MU** respectively. The details of Bilateral transactions of Electricity happened during March, 2022 have been shown in Table Below:

March, 2022	Direct	Traders	Total Bilateral Transaction (MU)
Total	1,526.31	5,610.06	7,136.37
Minimum	0.73	1.20	-
Maximum	337.69	1246.21	-

Table -7A

The region-wise maximum/ minimum volume of electricity transaction happened bilaterally during March, 2022 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	236.92	710.02	856.66	1510.51	175.24	825.72	257.49	2455.42	0.00	108.39
Minimum	12.63	4.03	0.73	1.25	3.58	1.20	2.57	19.13	0.00	2.80
Maximum	112.32	471.20	337.69	1080.62	132.84	315.07	254.92	1246.21	0.00	67.97

Table-7B

7.1. The **top 5 buyers** on bilateral transaction through direct transactions in the month of March, 2022 were **Maharashtra, Telangana, AMNSIL_WR, Madhya Pradesh and Chhattisgarh**, which constituted **68.40 %** of the market volume. Whereas **top 5 buyers** on bilateral transaction through traders in the month of March, 2022 were **Tamil Nadu, Gujarat, Andhra Pradesh, Odisha and Telangana**, which constituted **67.34 %** of the market volume. [Annexure III]

7.2. The **top 5 sellers** on bilateral transaction through direct transactions in the month of March, 2022 were **Punjab, DB Power, DVC, Delhi and SEIL Project-2**, which constituted **63.13**

% of the market volume. Whereas **top 5 sellers** on bilateral transaction through traders in the month of March, 2022 were **Raipur Energen, Delhi, Punjab, JITPL and Raigarh Energy**, which constituted **41.65 %** of the market volume. [Annexure III]

7.3. Deviation Volume - The volume of Deviation observed in the month of March, 2022 in import and export were **2,104.30 MU** and **2,090.30 MU** respectively. The total volume of Deviation observed in the month of March, 2022 can be taken as **2,097.32 MU**.

7.4. A comparison of volume of electricity transacted through both the Power Exchanges together in DAM, TAM, RTM, GTAM, GDAM (on delivery date basis) with Bilateral transactions and Deviation in the month of March, 2022 is shown in **Figure 1**:

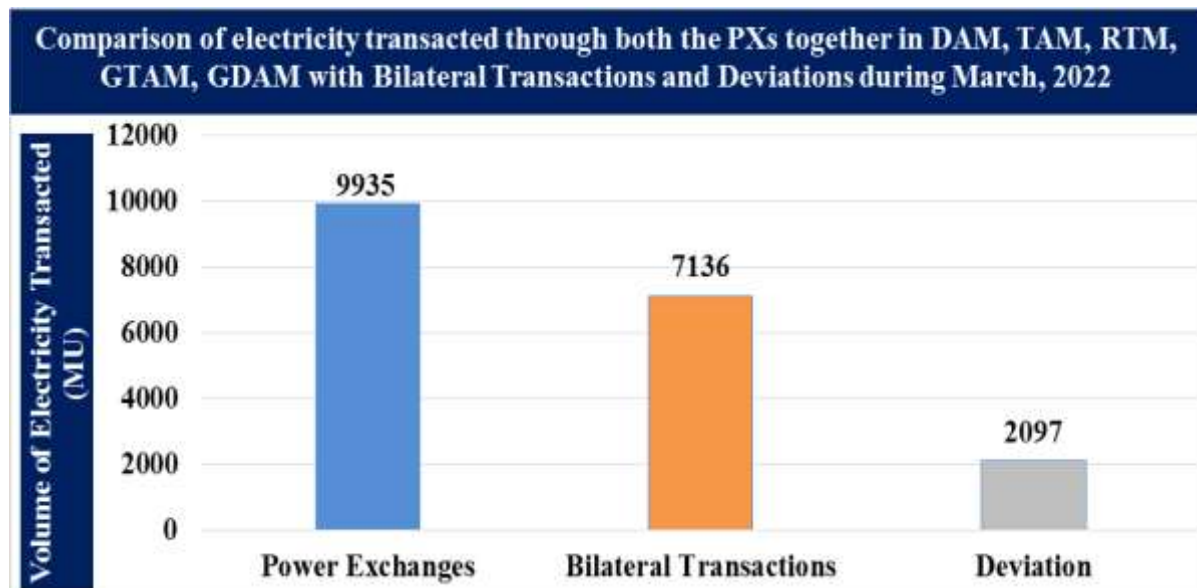


Figure -1

8. ANALYSIS OF MOVEMENT OF PRICES OBSERVED IN DAM DURING MARCH, 2022

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 March, 2022 month. The observations made are as under:

- 8.1.** In order to find out the determinants which are responsible for the Daily MCP, a regression analysis has been carried out where the Daily 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.
- 8.2.** A double log function was used so that elasticity of Daily MCP could be read off from the coefficients of independent variables. The regression analysis revealed that the only significant variable were the total purchase bid and total sell bid, whereas all the other variables were found to be insignificant. Further, the regression analysis revealed that the elasticity of the Daily MCP with respect to total purchase bid was **1.01**, which signifies that there is high multicollinearity among the predictor variables/ independent variables used in regression analysis.

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

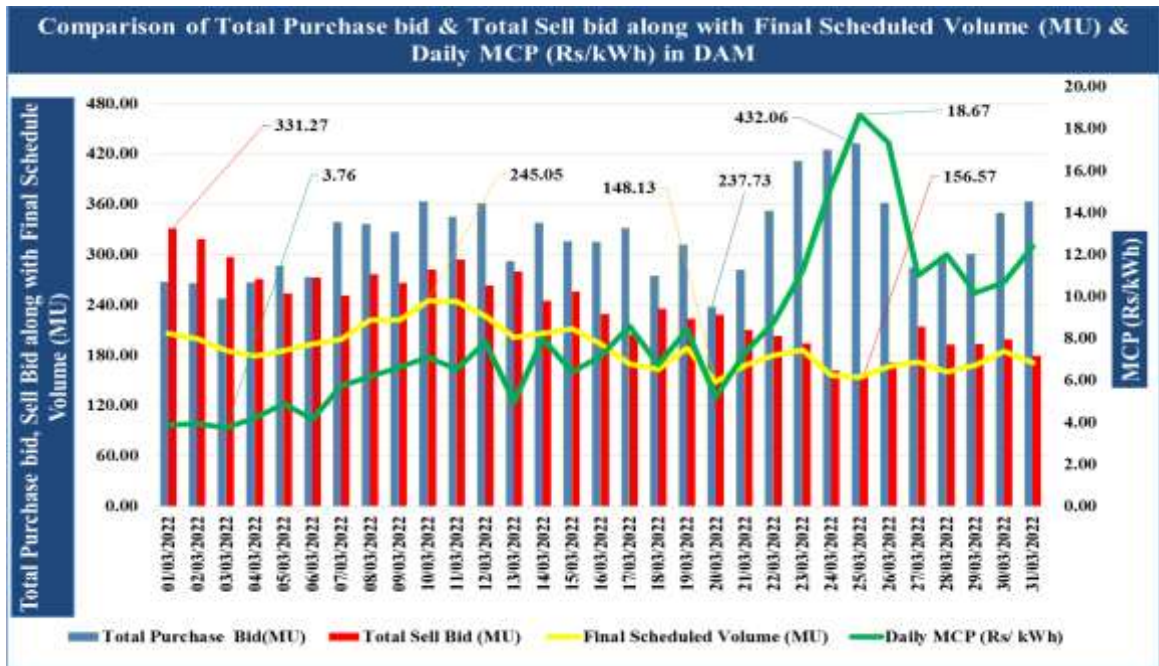


Figure -2

8.4. Invariably, the Final Scheduled Volume (MU) and the Daily MCP (Rs/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 March, 2022, it is observed that on first Sunday (6th March, 2022), FSV showed increasing trend in comparison to first Saturday (5th March, 2022). Similarly, on fourth Monday (28th March, 2022), the FSV showed decreasing trend in comparison to fourth Sunday (27th March, 2022). The detailed analysis on this is given at **Appendix-I**.

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

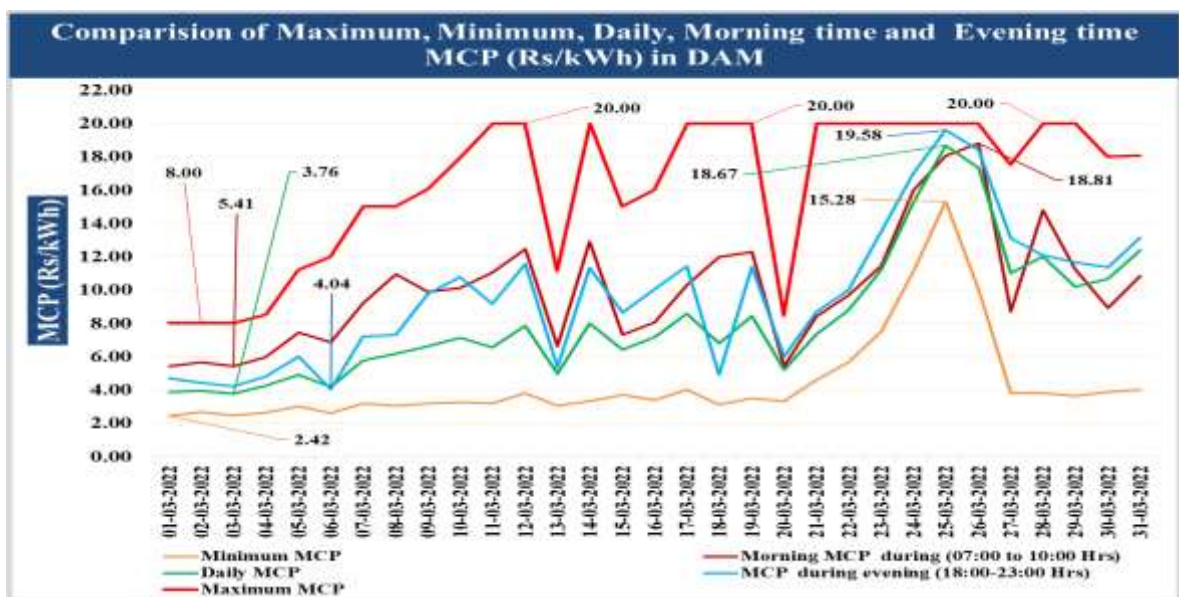


Figure -3

- 8.6. The Market Clearing Price duration curves for time block wise MCP for the month of March, 2022 is shown in **Figure 4**, whereas the day wise MCP duration curve for the period 1st April, 2021 to 31st March, 2022 is shown in **Figure 5**.

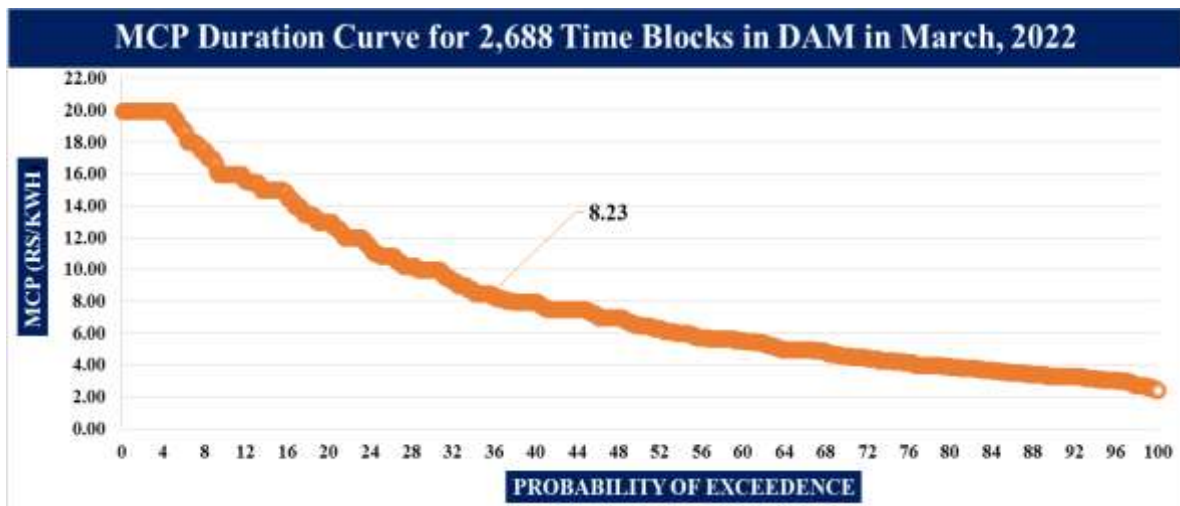


Figure-4

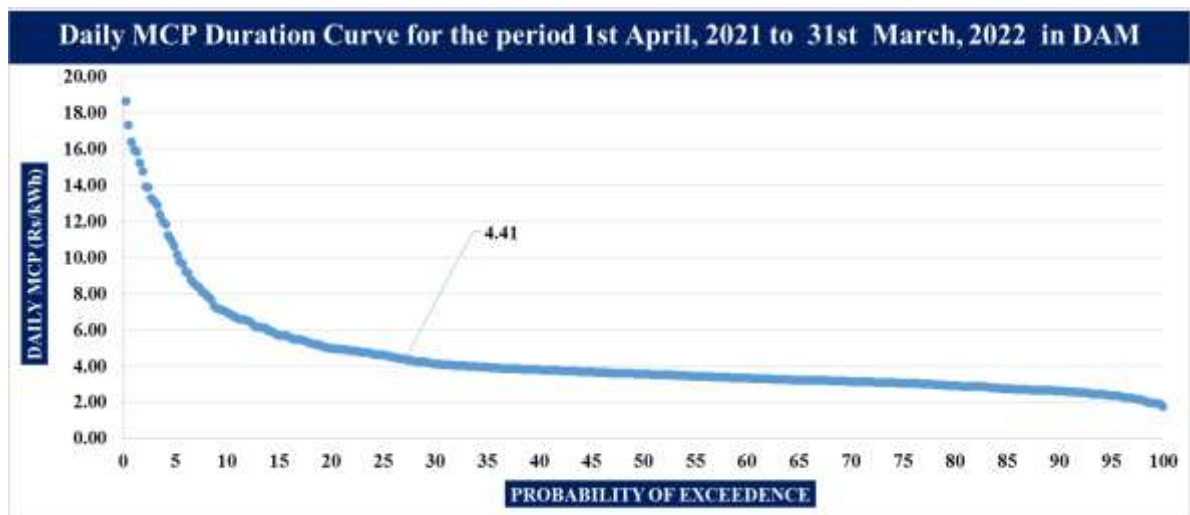


Figure-5

- 8.7. It can be seen in figure 4 above that in the MCP duration curve of March, 2022, for 36.16 % of the time MCP was above average MCP of the month (i.e. **Rs. 8.23/kWh**) and almost 63.84 % of the time MCP was below the average MCP of the month. Similarly, it can be seen in the cumulative MCP duration curve from 1st April, 2021 to 31st March, 2022 (figure-5), that for 27.13 % of the time the daily MCP was above the average MCP for the period (i.e. **Rs. 4.41/kWh**) and for 72.87 % of the time the daily MCP was below the average MCP for the period.
- 8.8. 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 8.1 and 8.2 above**.
- 8.9. In March, 2022, the maximum FSV occurred mostly during the **time period 3-5 PM** (on 10 no. of days). Whereas, the maximum MCP occurred mostly during the **time period 6-8 AM** (on 24 no. of days). Similarly, the minimum FSV occurred mostly during the **time period**

8-9 PM & 11 PM -12 AM (on 14 no. of days). Whereas, the minimum MCP occurred mostly during the **time period 3-4 AM & 1-3 PM** (on 27 no. of days). [**Annexure VI**]

- 8.10.** The maximum demand met during the month of March, 2022 in the country occurred on **31st March, 2022 at 199.30 GW**, which is 2.92 % more than the maximum demand occurred during **February, 2022 [i.e. 193.65 GW on 25th February, 2022]** and is 7.13 % more than the maximum demand occurred during **March, 2021 i.e. [186.04 GW on 11th March, 2021]**.
- 8.11.** In the month of March, 2022, One nation One Price was observed in IEX for **all 31 days** during the month, as there was no transmission congestion. Whereas, in PXIL also, there was no congestion in transmission system during March, 2022, so one nation one price was observed on all **2 days** during which transaction of electricity happened (i.e. 7th & 31st March, 2022). While in the month of February, 2022, One nation One Price was observed in IEX for **all 28 days** during the month, as there was no transmission congestion. Whereas, in PXIL also, there was no congestion in transmission system during March, 2022, so one nation one price was observed on all **22 days** during which transaction of electricity happened (i.e. 1st to 19th, 21st, 22nd and 27th March, 2022). Similarly, in the month of March, 2021, One nation One Price was observed in IEX for **9 days** during the month, as there was transmission congestion of **24.34 MU** on account of congestion on 22 days (i.e., 1st to 5th, 11th to 13th, 15th to 16th, 20th to 31st March, 2021). Whereas, in PXIL, there was no congestion in transmission system during March, 2021, so one nation one price was observed on all **27 days** during which transaction of electricity happened (i.e., 1st to 21st, 23rd to 25th and 27th to 29th March, 2021).
- 8.12.** In the month of March, 2022, there was **no** real time curtailment in IEX and PXIL in March, 2022. Further, in the month of February, 2022 also, there was no real time curtailment both IEX and PXIL. In the month of March, 2021, there was no real time curtailment in IEX and PXIL, respectively.
- 8.13.** The **top 10 sellers** on the power exchanges in **Day Ahead Market (DAM)** in the month of March, 2022 were, **Uttar Pradesh, Rajasthan, West Bengal, Bihar, Jindal Power Ltd. Stg-II, Madhya Pradesh, Orissa, Jaypee Nigrie, Jindal Power and JITPL**, which constituted **60.17 %** of the market volume. [**Annexure VII**]
- 8.14.** The **top 10 purchasers** on the power exchanges in **Day Ahead Market (DAM)** in the month of March, 2022 were, **Telangana, Gujarat, Andhra Pradesh, Tamilnadu, Maharashtra, Haryana, Punjab, Uttarakhand, Uttar Pradesh and J&K**, which constituted **83.59 %** of the market volume. [**Annexure VII**]
- 8.15.** The total volume of electricity purchased by Discoms/Licensees in DAM in the month of March, 2022 was **5,767.78 MU**, which constituted **98.45 %** of total volume of electricity purchased on both the power exchanges.
- 8.16.** Similarly, the total volume of electricity sold by Discoms/Licensees in DAM in the month of March, 2022 was **3,558.38 MU**, which constituted **60.74%** of total volume of electricity sold on both the power exchanges.

9. ANALYSIS OF MOVEMENT OF PRICES OBSERVED IN REAL TIME MARKET (RTM) TRANSACTIONS IN MARCH, 2022

- 9.1. 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 were the total purchase bid, total sell bid and Hydro generation, whereas all the other variables were found to be insignificant. Further, the regression analysis revealed that the elasticity of the Daily MCP with respect to total Purchase Bid was **1.03**, which signifies that there is high multicollinearity among the predictor variables/ independent variables used in regression analysis.
- 9.2. 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 9.1 above**.
- 9.3. The Total Purchase Bid, Total Sell Bid, Daily MCP and FSV are shown in Figure-6 below:

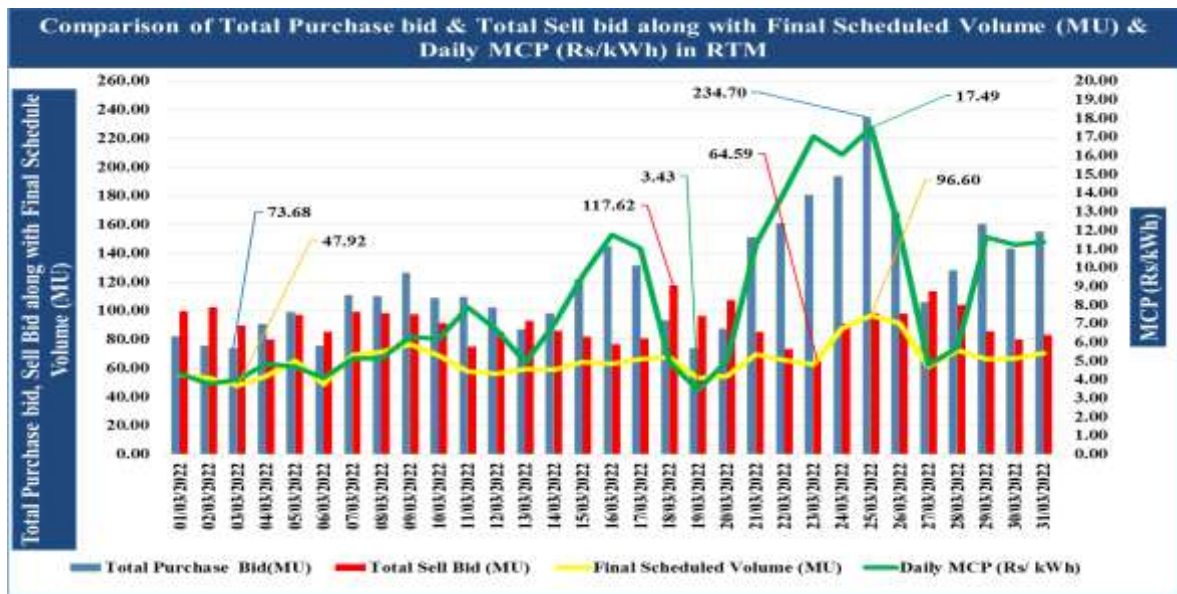


Figure-6

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

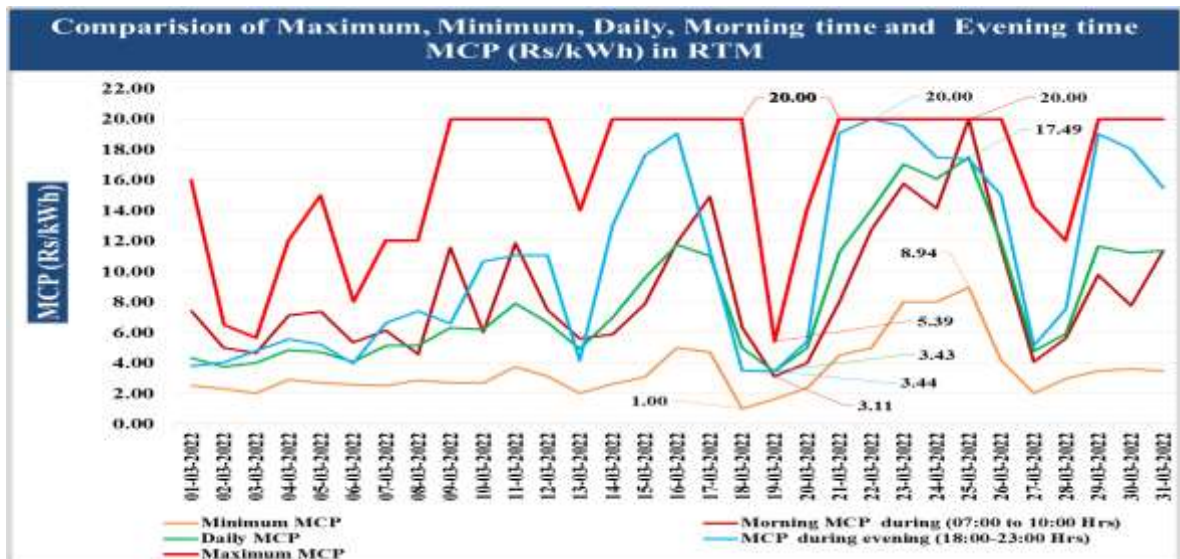


Figure-7

- 9.5. The Market Clearing Price duration curves for time block wise MCP for the month of March, 2022 is shown in **Figure 8**, whereas the day wise MCP duration curve for the period 1st April, 2021 to 31st March, 2022 is shown in **Figure 9**.

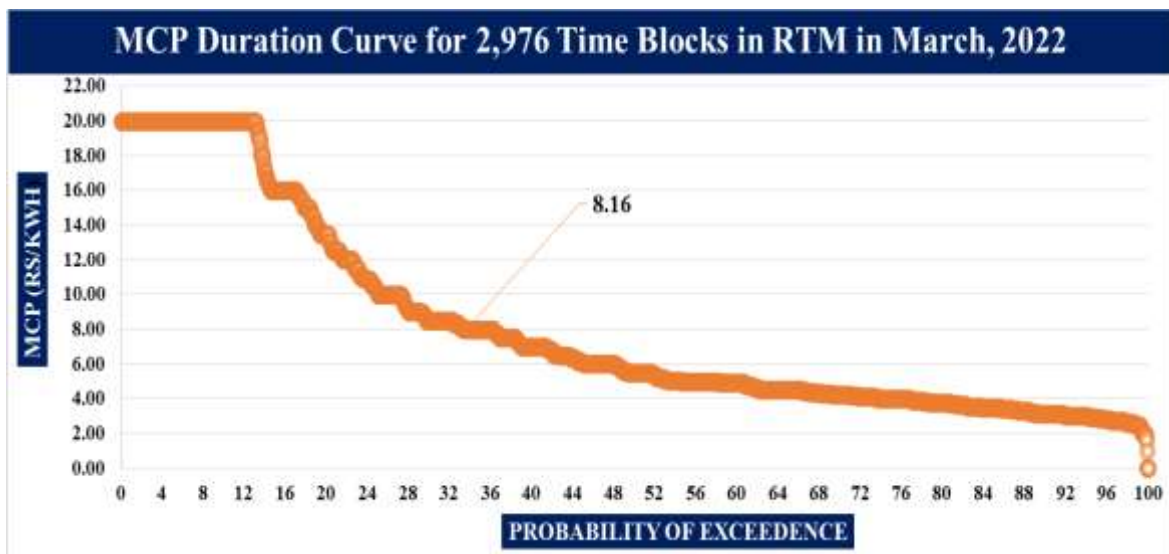


Figure-8

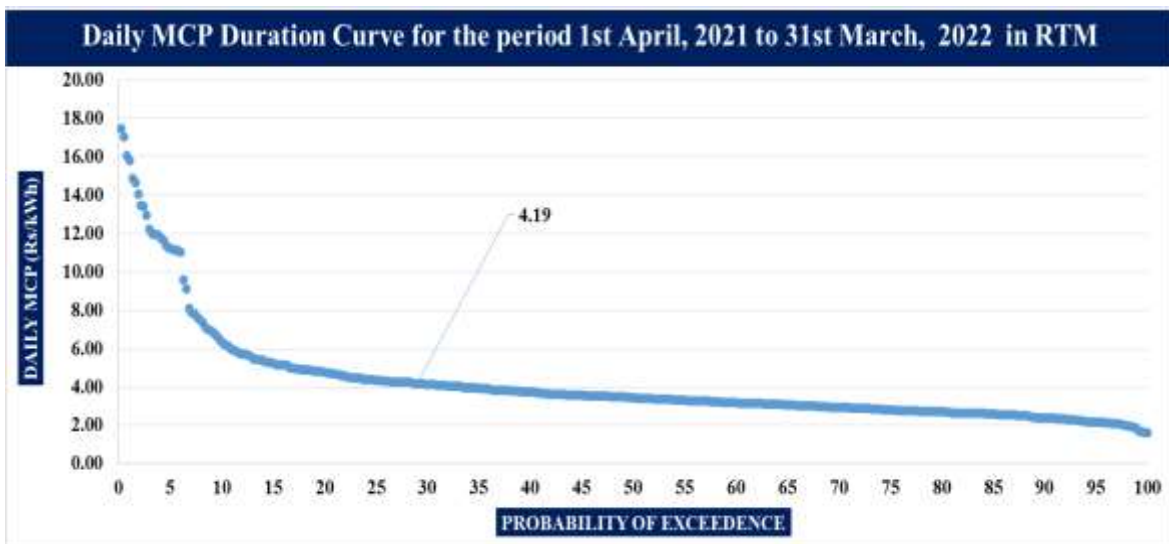


Figure-9

- 9.6. It can be seen in figure 8 above that in the MCP duration curve of March, 2022, for 33.03 % of the time the MCP was above the average MCP of the month (i.e. **Rs. 8.16/kWh**) and for 66.97 % 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, 2021 to 31st March, 2022 (figure 9) that, for 29.04 % of the time the daily MCP was above the average MCP for the period (i.e. **Rs. 4.19/kWh**) and for 70.96 % of the time the daily MCP was below the average MCP for the period.
- 9.7. In March, 2022, the maximum FSV occurred mostly during the **time period 10 PM -12 AM** (on 9 no. of days). Whereas, the maximum MCP also occurred mostly during the **time period 12-1 AM & 7-8 AM** (on 14 no. of days). Similarly, the minimum FSV occurred mostly during the **time period 4-1 7 AM** (on 13 no. of days). Whereas, the minimum MCP occurred mostly during the **time period 3-4 AM & 1-2 PM** (on 19 no. of days). [Annexure X]

- 9.8.** There was **no** real time curtailment in IEX in Real Time Market (RTM) during March, 2022 and February, 2022, whereas, no transaction of electricity happened in PXIL during March, 2022 and February, 2022. Similarly, in March, 2021, there was no real time curtailment in IEX, whereas, no transaction of electricity happened in PXIL during March, 2021 in Real Time Market (RTM).
- 9.9.** In the month of March, 2022, there was congestion of **3.13 MU** in the transmission system in IEX on 9 days ((9th to 12th & 14th to 18th March, 2022), hence one nation one price was observed for **22 days** in IEX during March, 2022, whereas, in PXIL, no transaction of electricity happened in March, 2022. Further, in the month of February, 2022, there was congestion of **0.05 MU** in the transmission system in IEX on 26th & 28th March, 2022, hence one nation one price was observed for **26 days** in IEX, whereas, in PXIL, no transaction of electricity happened in February, 2022. In the month of March, 2021, there was congestion of **7.30 MU** in transmission system in IEX in Real Time Market on account of congestion on 17 days (i.e. 6th, 8th, 10th, 13th, 17th, 19th, 20th, 22nd to 31st March, 2021), hence, one nation one price was observed for **14 days** in IEX. Whereas, in PXIL, no transaction of electricity happened in March, 2021 in Real Time Market.
- 9.10.** The **top 10 sellers** on the power exchanges in **Real Time Market (RTM)** in the month of March, 2022 were **Bihar, West Bengal, Madhya Pradesh, Rajasthan, Orissa, Himachal Pradesh, Chhattisgarh, Uttar Pradesh, Delhi and Kerala**, which constituted **68.12%** of the market volume. [Annexure XI]
- 9.11.** The **top 10 buyers** on the power exchanges in **Real Time Market (RTM)** in the month of March, 2022 were **Tamil Nadu, Andhra Pradesh, Maharashtra, Telangana, J&K, Gujarat, Haryana, Uttar Pradesh, Delhi and Punjab**, which constituted **86.12%** of the market volume. [Annexure XI]
- 9.12.** The total volume of electricity purchased by Discoms/Licensees in RTM in the month of March, 2022 was **2,009.63 MU**, which constituted **99.44 %** of total volume of electricity purchased on both the power exchanges.
- 9.13.** Similarly, the total volume of electricity sold by Discoms/Licensees in RTM in the month of March, 2022 was **1,675.39 MU**, which constituted **82.90 %** of total volume of electricity sold on both the power exchanges.

-
- Source DAM, TAM and RTM data: IEX and PXIL
 - 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, 2021 to March, 2022 of IEX and PXIL

Quarter	Months	Final Scheduled Volume (MU)		Market Clearing Price (Rs/kWh)		Real Time Curtailment (MU)	
		IEX	PXIL	IEX	PXIL	IEX	PXIL
Quarter -I	April, 2021	5,699.22	4.73	3.70	3.69	0	0
	May, 2021	4,363.88	3.32	2.83	3.06	0	0
	June, 2021	4,314.17	21.91	3.06	3.35	2.35	0
Total Quarter -I	April - June, 2021	14,377.27	29.96			2.35	0
Quarter- II	July, 2021	4,238.25	2.76	2.95	3.02	0	0
	August, 2021	6,648.76	5.12	5.06	4.72	5.13	0
	September, 2021	6,418.27	1.27	4.40	6.52	0	0
Total Quarter- II	July- September, 2021	17,305.28	9.15			5.13	0
Quarter -III	October, 2021	6,568.31	0.37	8.01	7.17	0	0
	November, 2021	4,718.76	0.74	3.08	3.71	0.41	0
	December, 2021	5,423.27	0.88	3.54	4.23	0	0
Total Quarter- III	October- December, 2021	16,710.34	1.99			0.41	0
Quarter -IV	January, 2022	5,279.70	0.56	3.39	4.38	0	0
	February, 2022	5,612.07	0.76	4.44	5.14	0	0
	March, 2022	5,858.39	0.20	8.23	3.49	0	0
Total Quarter- IV	January- March, 2022	16,750.16	1.52			0	0
Total April, 2021 - March, 2022		65,143.05	42.62			7.89	0

Annexure-II**Final Scheduled Volume in Term Ahead Market (TAM) for the months of April, 2021 to March, 2022 of IEX and PXIL (Trade and Delivery date basis)**

Quarter	Months	Final Scheduled Volume (MU) on Trade Date Basis		
		IEX	PXIL	Total
Quarter -I	April, 2021	325.78	651.35	977.13
	May, 2021	425.63	344.03	769.66
	June, 2021	622.42	358.74	981.16
Total Quarter -I	April- June, 2021	1,373.83	1,354.12	2,727.95
Quarter- II	July, 2021	832.44	267.10	1,099.54
	August, 2021	483.31	284.40	767.71
	September, 2021	198.18	209.46	407.64
Total Quarter -II	July- September, 2021	1,513.93	760.96	2,274.89
Quarter- III	October, 2021	298.11	223.78	521.89
	November, 2021	291.20	282.24	573.44
	December, 2021	421.34	300.08	721.42
Total Quarter- III	October- December, 2021	1,010.65	806.10	1,816.75
Quarter -IV	January, 2022	364.09	237.67	601.76
	February, 2022	617.84	782.52	1,400.36
	March, 2022	716.62	600.37	1,316.99
Total Quarter- IV	January- March, 2022	1,698.55	1,620.56	3,319.11
Total April, 2021 - March, 2022		5,596.96	4,541.74	10,138.70

Quarter	Months	Final Scheduled Volume (MU) on Delivery Date Basis		
		IEX	PXIL	Total
Quarter -I	April, 2021	348.58	576.72	925.30
	May, 2021	382.62	419.36	801.98
	June, 2021	640.91	312.66	953.57
Total Quarter -I	April- June, 2021	1,372.11	1,308.74	2,680.85
Quarter- II	July, 2021	761.26	332.72	1,093.98
	August, 2021	617.23	238.63	855.86
	September, 2021	192.87	251.17	444.04
Total Quarter -II	July- September, 2022	1,571.36	822.52	2,393.88
Quarter- III	October, 2021	224.78	234.56	459.34
	November, 2021	302.75	276.38	579.13
	December, 2021	379.77	263.23	643.00
Total Quarter- III	October- December, 2021	907.30	774.17	1,681.47
Quarter -IV	January, 2022	390.27	264.81	655.08
	February, 2022	526.80	734.93	1,261.73
	March, 2022	822.71	522.10	1,344.81
Total Quarter- IV	January- March, 2022	1,739.78	1,521.84	3,261.62
Total April, 2021 - March, 2022		5,612.01	4,415.88	10,027.89

Top Five Entities (Buyers and Sellers) in Bilateral transactions in the month of March, 2022

(i) Top five Buyers in Bilateral transactions

Entity Name	Direct		Entity Name	Through Traders	
	(MU)	Percent		(MU)	Percent
MAHARASHTR	337.69	22.12%	TAMILNADU	1246.21	22.21%
TELANGANA	254.92	16.70%	Gujarat	1080.62	19.26%
AMNSIL_WR	170.25	11.15%	ANDHRA_PRADES	539.71	9.62%
MP	147.24	9.65%	Odisha	471.20	8.40%
CHATTISGARH	133.79	8.77%	TELANGANA	440.02	7.84%
Total Volume	1,043.89	68.39%	Total Volume	3,777.76	67.33%
Total Volume in Bilateral	1,526.31		Total Volume in Bilateral	5,610.06	

(ii) Top five Sellers in Bilateral transactions

Entity Name	Direct		Entity Name	Through Traders	
	(MU)	Percent		(MU)	Percent
Punjab	246.00	16.77%	Raipur Energen	684.97	12.09%
DB Power	211.17	14.40%	Delhi	447.07	7.89%
DVC	174.69	11.91%	Punjab	438.19	7.73%
Delhi	148.80	10.14%	JITPL	400.31	7.07%
SEIL Project-2	145.31	9.91%	Raigarh Energy	388.87	6.86%
Total Volume	925.97	63.14%	Total Volume	2,359.41	41.64%
Total Volume in Bilateral	1,466.84		Total Volume in Bilateral	5,665.03	

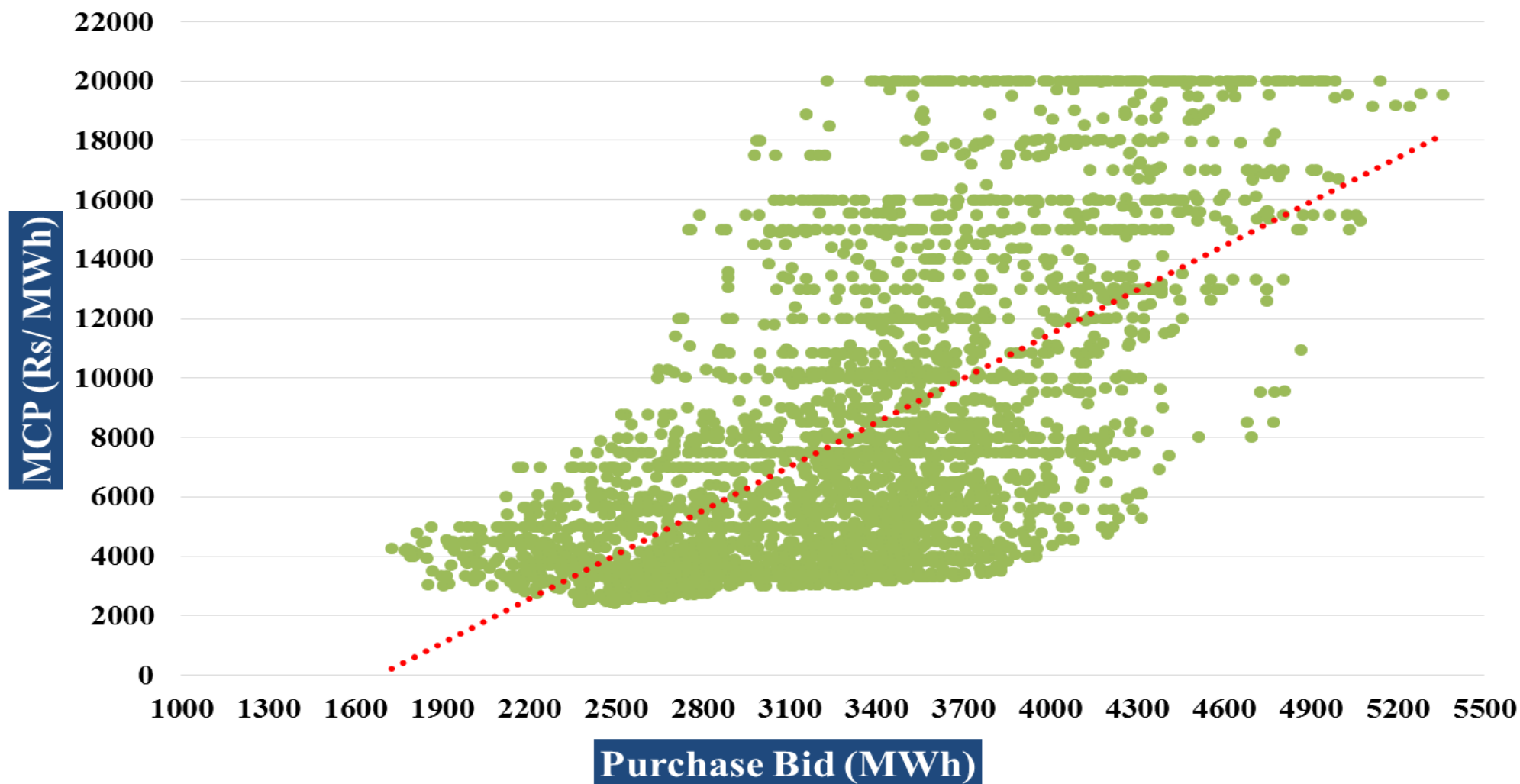
Evening, Day, Night, Morning, Maximum, Minimum, Average MCP (Rs/kWh) and Final Scheduled Volume (MU) in DAM

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)
01-03-2022	5.41	3.37	4.69	2.76	8.00	2.42	3.86	206.18
02-03-2022	5.66	3.51	4.41	2.99	8.00	2.66	3.94	199.40
03-03-2022	5.41	3.36	4.19	2.84	8.00	2.45	3.76	185.84
04-03-2022	5.95	4.00	4.78	3.04	8.52	2.64	4.24	178.94
05-03-2022	7.42	4.05	5.98	3.38	11.20	3.00	4.90	185.42
06-03-2022	6.86	3.43	4.04	3.47	12.00	2.59	4.16	193.22
07-03-2022	9.19	4.63	7.18	3.70	15.00	3.19	5.76	198.70
08-03-2022	10.94	5.09	7.31	3.58	15.01	3.05	6.18	222.32
09-03-2022	9.89	4.97	9.77	3.70	16.05	3.17	6.62	222.33
10-03-2022	10.12	5.42	10.78	3.94	17.97	3.24	7.11	245.05
11-03-2022	11.04	4.20	9.16	4.01	20.00	3.19	6.53	244.39
12-03-2022	12.45	4.59	11.55	5.27	20.00	3.80	7.84	226.40
13-03-2022	6.60	3.49	5.35	5.20	11.11	3.05	4.97	201.42
14-03-2022	12.91	4.88	11.30	5.48	20.00	3.32	8.00	206.49
15-03-2022	7.30	5.03	8.63	5.41	15.00	3.71	6.42	212.00
16-03-2022	8.04	5.17	10.04	6.19	16.00	3.37	7.16	193.45
17-03-2022	10.30	6.27	11.43	7.48	20.00	4.00	8.58	169.76
18-03-2022	11.98	3.79	4.90	8.37	20.00	3.12	6.77	163.25
19-03-2022	12.27	6.11	11.38	6.02	20.00	3.50	8.42	189.07
20-03-2022	5.41	3.78	6.01	5.82	8.46	3.30	5.20	148.13
21-03-2022	8.41	6.73	8.67	6.12	20.00	4.57	7.32	168.32
22-03-2022	9.68	7.50	9.98	8.51	20.00	5.65	8.78	179.92
23-03-2022	11.46	9.28	13.52	11.08	20.00	7.50	11.23	186.17
24-03-2022	15.99	13.93	17.01	14.71	20.00	11.11	15.27	156.46
25-03-2022	18.05	17.71	19.58	19.21	20.00	15.28	18.67	154.18
26-03-2022	18.81	15.99	18.39	16.91	20.00	10.00	17.33	166.37
27-03-2022	8.70	7.69	13.09	13.80	17.50	3.78	10.99	171.92
28-03-2022	14.77	15.37	12.08	7.02	20.00	3.80	12.01	159.88
29-03-2022	11.25	8.17	11.67	10.26	20.00	3.61	10.17	167.93
30-03-2022	8.91	9.48	11.35	12.29	18.00	3.85	10.67	184.55
31-03-2022	10.83	10.84	13.13	14.17	18.06	4.00	12.38	170.93
Maximum	18.81	17.71	19.58	19.21	20.00	15.28	18.67	245.05
Minimum	5.41	3.36	4.04	2.76	8.00	2.42	3.76	148.13
Average	10.04	6.70	9.61	7.08	16.19	4.40	8.10	189.58

MCP: Market Clearing Price (Rs/kWh)

FSV: Final Scheduled Volume (MU)

Comparison of MCP w.r.t. Purchase Bid for 2,976 Time Blocks during the month of March, 2022 in DAM



Time Blocks during the Month [96 time blocks in a day x 31 days = 2,976]

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 (Rs/kWh)		Min FSV (MU)		Min. MCP (Rs/kWh)	
	Time Block	Value	Time Block	Value	Time Block	Value	Time Block	Value
01-03-2022	16:15 - 16:30	2.74	07:15 - 07:30	8.00	23:00 - 23:15	1.59	03:45 - 04:00	2.42
02-03-2022	09:30 - 09:45	2.71	07:15 - 07:30	8.00	22:30 - 22:45	1.35	03:45 - 04:00	2.66
03-03-2022	09:45 - 10:00	2.37	07:15 - 07:30	8.00	20:15 - 20:30	1.20	03:00 - 03:15	2.45
04-03-2022	15:30 - 15:45	2.43	07:15 - 07:30	8.52	20:30 - 20:45	1.05	03:45 - 04:00	2.64
05-03-2022	15:30 - 15:45	2.56	07:15 - 07:30	11.20	20:15 - 20:30	1.19	03:45 - 04:00	3.00
06-03-2022	04:45 - 05:00	2.62	07:15 - 07:30	12.00	20:15 - 20:30	1.02	14:45 - 15:00	2.59
07-03-2022	04:30 - 04:45	2.68	07:15 - 07:30	15.00	20:45 - 21:00	1.32	03:30 - 03:45	3.19
08-03-2022	15:45 - 16:00	2.98	07:00 - 07:15	15.01	19:15 - 19:30	1.61	03:45 - 04:00	3.05
09-03-2022	15:45 - 16:00	2.94	07:00 - 07:15	16.05	19:45 - 20:00	1.40	03:45 - 04:00	3.17
10-03-2022	01:00 - 01:15	3.19	07:00 - 07:15	17.97	18:45 - 19:00	1.79	03:45 - 04:00	3.24
11-03-2022	01:15 - 01:30	2.98	07:00 - 07:15	20.00	20:45 - 21:00	1.95	03:30 - 03:45	3.19
12-03-2022	01:45 - 02:00	2.88	06:45 - 07:00	20.00	21:00 - 21:15	1.77	03:00 - 03:15	3.80
13-03-2022	01:45 - 02:00	2.63	07:00 - 07:15	11.11	22:30 - 22:45	1.51	14:00 - 14:15	3.05
14-03-2022	15:45 - 16:00	2.57	06:30 - 06:45	20.00	22:15 - 22:30	1.58	13:15 - 13:30	3.32
15-03-2022	07:30 - 07:45	2.69	07:00 - 07:15	15.00	23:15 - 23:30	1.70	14:00 - 14:15	3.71
16-03-2022	09:00 - 09:15	2.53	18:45 - 19:00	16.00	23:45 - 24:00	1.31	14:00 - 14:15	3.37
17-03-2022	16:00 - 16:15	2.13	07:00 - 07:15	20.00	00:00 - 00:15	1.40	14:00 - 14:15	4.00
18-03-2022	07:45 - 08:00	2.05	06:15 - 06:30	20.00	23:15 - 23:30	1.22	14:00 - 14:15	3.12
19-03-2022	15:30 - 15:45	2.63	06:30 - 06:45	20.00	23:15 - 23:30	1.22	13:15 - 13:30	3.50
20-03-2022	08:15 - 08:30	2.01	22:45 - 23:00	8.46	23:15 - 23:30	1.19	13:00 - 13:15	3.30
21-03-2022	07:30 - 07:45	2.55	07:00 - 07:15	20.00	03:00 - 03:15	1.11	03:45 - 04:00	4.57
22-03-2022	16:15 - 16:30	2.42	06:45 - 07:00	20.00	04:15 - 04:30	1.48	13:45 - 14:00	5.65
23-03-2022	08:45 - 09:00	2.38	06:30 - 06:45	20.00	17:45 - 18:00	1.57	14:15 - 14:30	7.50
24-03-2022	18:30 - 18:45	2.10	06:00 - 06:15	20.00	08:45 - 09:00	1.38	09:00 - 09:15	11.11
25-03-2022	06:30 - 06:45	1.95	00:00 - 00:15	20.00	22:45 - 23:00	1.40	09:15 - 09:30	15.28
26-03-2022	06:45 - 07:00	2.07	00:00 - 00:15	20.00	23:15 - 23:30	1.55	13:15 - 13:30	10.00
27-03-2022	07:15 - 07:30	2.34	20:45 - 21:00	17.50	04:00 - 04:15	1.38	09:00 - 09:15	3.78
28-03-2022	12:15 - 12:30	2.27	07:30 - 07:45	20.00	02:15 - 02:30	1.04	03:45 - 04:00	3.80
29-03-2022	16:15 - 16:30	2.19	06:00 - 06:15	20.00	09:00 - 09:15	1.44	12:45 - 13:00	3.61
30-03-2022	06:45 - 07:00	2.34	16:45 - 17:00	18.00	08:45 - 09:00	1.48	13:00 - 13:15	3.85
31-03-2022	12:45 - 13:00	2.18	23:45 - 24:00	18.06	20:45 - 21:00	1.45	13:00 - 13:15	4.00

MCP: Market Clearing Price (Rs/kWh)

FSV: Final Scheduled Volume (MU)

Annexure-VII**Sellers and Buyers in Day Ahead Market (DAM) in the month of March, 2022**

S. No.	Entity Name	Sell		Entity Name	Purchase	
		(MU)	Percent (%)		(MU)	Percent (%)
1.	Uttar Pradesh	911.20	15.55%	Telangana	1012.64	17.28%
2.	Rajasthan	437.35	7.47%	Gujarat	799.65	13.65%
3.	West Bengal	361.36	6.17%	Andhra Pradesh	770.43	13.15%
4.	Bihar	357.16	6.10%	Tamilnadu	764.84	13.05%
5.	Jindal Power Ltd. Stg-II	297.25	5.07%	Maharashtra	523.41	8.93%
6.	Madhya Pradesh	274.87	4.69%	Haryana	249.40	4.26%
7.	Orissa	267.12	4.56%	Punjab	215.37	3.68%
8.	Jaypee Nigrie	228.88	3.91%	Uttarakhand	192.51	3.29%
9.	Jindal Power	196.63	3.36%	Uttar Pradesh	191.28	3.26%
10.	JITPL	193.32	3.30%	J&K	177.68	3.03%
11.	Sembcorp Gayatri	182.77	3.12%	NVVN (SNA) - NEA	118.25	2.02%
12.	RKM Power	134.20	2.29%	Delhi	104.43	1.78%
13.	MB Power	128.48	2.19%	Karnataka	104.15	1.78%
14.	Teesta -3	127.52	2.18%	West Bengal	98.39	1.68%
15.	Himachal Pradesh	125.47	2.14%	ArcelorMittal Nippon steel	86.72	1.48%
16.	Karnataka	116.55	1.99%	Rajasthan	80.66	1.38%
17.	ACBIL	100.46	1.71%	Madhya Pradesh	62.02	1.06%
18.	Chhattisgarh	98.00	1.67%	Assam	61.51	1.05%
19.	Essar Power MP Ltd	95.07	1.62%	Dadra & Nagar Haveli	52.90	0.90%
20.	Delhi	94.34	1.61%	DGPCL Bhutan	34.13	0.58%
21.	Maharashtra	83.41	1.42%	NEA-NR	29.11	0.50%
22.	Kerala	71.88	1.23%	Orissa	23.10	0.39%
23.	Telangana	70.75	1.21%	Chhattisgarh	22.74	0.39%
24.	Sembcorp Energy India Ltd.	58.98	1.01%	Meghalaya	11.76	0.20%
25.	Raipur Energen	53.57	0.91%	Goa WR	11.73	0.20%
26.	Adhunik Power	52.57	0.90%	Jharkhand	11.39	0.19%
27.	Shree Cement	50.26	0.86%	Bihar	11.27	0.19%
28.	Jharkhand	44.23	0.75%	Himachal Pradesh	9.29	0.16%
29.	Assam	43.22	0.74%	Daman & Diu	7.57	0.13%
30.	Kameng HEP	43.18	0.74%	Kerala	7.48	0.13%
31.	Maruti Clean Coal Power	42.08	0.72%	Goa SR	6.97	0.12%
32.	DVC	40.78	0.70%	BALCO 2	3.16	0.05%
33.	Jhabua Power	34.83	0.59%	Nagaland	1.58	0.03%
34.	Tamilnadu	31.70	0.54%	Railways	0.74	0.01%
35.	GMR Kamalanga	29.67	0.51%	Gandhar_NAPM	0.20	0.00%
36.	Tripura	25.97	0.44%	Arunachal Pradesh	0.15	0.00%
37.	Renew Surya Ravi Private	25.79	0.44%			
38.	Andhra Pradesh	24.56	0.42%			
39.	AD Hydro	23.52	0.40%			
40.	Sikkim	19.65	0.34%			

41.	Adani Hybrid Energy Jaisalmer	16.45	0.28%		
42.	DB Power	15.45	0.26%		
43.	Karcham Wangtoo	14.94	0.25%		
44.	Sainj HEP	13.61	0.23%		
45.	Mizoram	11.32	0.19%		
46.	J&K	10.78	0.18%		
47.	Arunachal Pradesh	10.76	0.18%		
48.	Adani Green Solar Jaisalmer	10.51	0.18%		
49.	NLC TPS-II	10.42	0.18%		
50.	Goa WR	9.99	0.17%		
51.	Jorethang	9.67	0.17%		
52.	Singoli Bhagwati	9.51	0.16%		
53.	Tashiding HEP	8.91	0.15%		
54.	SKS Power	7.75	0.13%		
55.	Renew Solar Energy (Jharkhand	7.29	0.12%		
56.	Palatana	7.26	0.12%		
57.	Adani Hybrid Energy Jaisalmer	7.15	0.12%		
58.	RGPPL	6.71	0.11%		
59.	Dikchu	6.29	0.11%		
60.	Raigarh Energy Ltd.	6.28	0.11%		
61.	Adani Hybrid Energy Jaisalmer	5.87	0.10%		
62.	KSK Mahanadi	5.77	0.10%		
63.	Gujarat	5.75	0.10%		
64.	NLC TPS-II Stg-2	5.46	0.09%		
65.	Sorang HEP, (Himachal Sorang	4.96	0.08%		
66.	Jindal Steel	4.80	0.08%		
67.	Punjab	4.03	0.07%		
68.	Costal Energen	3.74	0.06%		
69.	Adani Green Energy Nineteen	2.72	0.05%		
70.	BALCO 2	2.63	0.04%		
71.	Dadra & Nagar Haveli	2.21	0.04%		
72.	Uttarakhand	1.98	0.03%		
73.	Renew Solar Urja Private	1.86	0.03%		
74.	Chuzachen	1.56	0.03%		
75.	Dhariwal	1.48	0.03%		
76.	Nagaland	1.22	0.02%		
77.	Haryana	0.74	0.01%		
78.	Lanco Budhil	0.71	0.01%		
79.	GMR Warora	0.48	0.01%		
80.	Bongaigaon	0.46	0.01%		
81.	Ostro Energy Private Limited (OEPL)	0.31	0.01%		
Total Volume of top 10		3,525.12	60.17%	Total Volume of top 10	4,897.21 83.59%
Total Volume in PXs		5,858.59		Total Volume in PXs	5,858.59

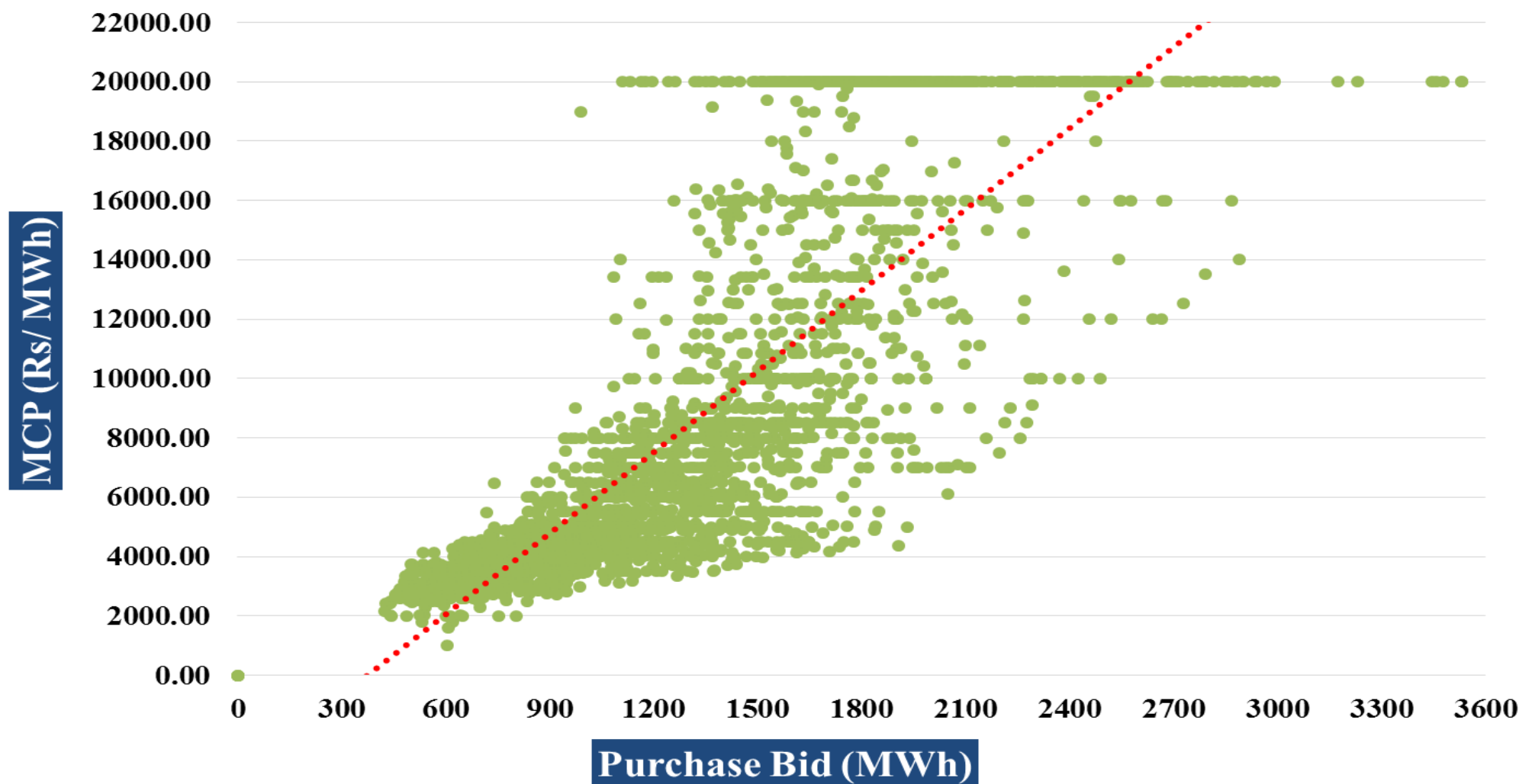
Annexure-VIII**Evening, Day, Night, Morning, Maximum, Minimum, Average MCP (Rs/kWh) and Final Scheduled Volume (MU) in RTM**

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)
01-03-2022	7.38	3.93	3.79	3.36	16.00	2.50	4.30	55.29
02-03-2022	4.97	3.78	4.04	2.83	6.50	2.29	3.77	53.33
03-03-2022	4.63	3.97	4.76	3.03	5.64	2.02	4.00	47.92
04-03-2022	7.13	4.25	5.55	3.54	12.00	2.90	4.85	54.46
05-03-2022	7.38	3.99	5.19	3.42	15.00	2.68	4.69	65.05
06-03-2022	5.36	3.76	3.96	3.77	8.00	2.57	4.08	48.59
07-03-2022	6.12	5.30	6.63	3.15	12.00	2.51	5.14	68.98
08-03-2022	4.57	4.90	7.41	3.74	12.00	2.87	5.14	71.10
09-03-2022	11.59	5.37	6.59	3.97	20.00	2.70	6.30	76.54
10-03-2022	6.01	4.91	10.67	3.69	20.00	2.70	6.18	68.75
11-03-2022	11.86	5.95	11.03	4.87	20.00	3.75	7.89	57.47
12-03-2022	7.47	4.24	11.05	4.82	20.00	3.12	6.65	56.15
13-03-2022	5.60	3.07	4.15	7.05	14.00	2.02	4.92	59.20
14-03-2022	5.88	5.00	13.03	4.41	20.00	2.60	6.98	58.89
15-03-2022	7.87	5.73	17.58	7.51	20.00	3.07	9.57	64.04
16-03-2022	11.90	8.60	19.05	8.61	20.00	5.00	11.77	63.08
17-03-2022	14.92	9.93	11.37	9.59	20.00	4.70	11.02	66.42
18-03-2022	6.34	3.21	3.49	7.24	20.00	1.00	4.98	67.68
19-03-2022	3.11	3.48	3.44	3.57	5.39	1.61	3.43	53.24
20-03-2022	4.01	3.37	5.43	6.83	14.03	2.36	5.00	54.37
21-03-2022	7.99	9.75	19.10	7.89	20.00	4.50	11.25	69.47
22-03-2022	12.74	10.72	20.00	13.05	20.00	5.00	14.06	65.63
23-03-2022	15.75	12.71	19.50	20.00	20.00	8.00	17.04	62.68
24-03-2022	14.13	14.95	17.48	17.07	20.00	8.00	16.06	87.69
25-03-2022	20.00	14.79	17.36	18.86	20.00	8.94	17.49	96.60
26-03-2022	11.63	6.75	15.02	14.73	20.00	4.18	11.96	91.44
27-03-2022	4.06	3.76	5.14	5.88	14.23	2.00	4.77	60.89
28-03-2022	5.64	4.41	7.55	5.44	12.00	2.99	5.89	72.30
29-03-2022	9.76	4.66	19.01	13.34	20.00	3.48	11.63	66.45
30-03-2022	7.75	5.39	18.00	13.22	20.00	3.62	11.22	66.69
31-03-2022	11.37	4.89	15.46	14.35	20.00	3.48	11.37	70.47
Maximum	20.00	14.95	20.00	20.00	20.00	8.94	17.49	96.60
Minimum	3.11	3.07	3.44	2.83	5.39	1.00	3.43	47.92
Average	8.55	6.11	10.70	7.83	16.35	3.52	8.17	65.19

MCP: Market Clearing Price (Rs/kWh)

FSV: Final Scheduled Volume (MU)

Comparison of MCP w.r.t. Purchase Bid for 2,976 Time Blocks during the month of March, 2022 in RTM



Time Blocks during the Month [96 time blocks in a day x 31 days = 2,976]

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

Date	Max. FSV (MU)		Max. MCP (Rs/kWh)		Min FSV (MU)		Min. MCP (Rs/kWh)	
	Time Block	Value	Time Block	Value	Time Block	Value	Time Block	Value
01-03-2022	08:45 - 09:00	0.95	07:30 - 07:45	16.00	03:15 - 03:30	0.33	21:30 - 21:45	2.50
02-03-2022	08:15 - 08:30	0.88	07:30 - 07:45	6.50	04:30 - 04:45	0.36	14:45 - 15:00	2.29
03-03-2022	09:30 - 09:45	0.87	19:30 - 19:45	5.64	05:30 - 05:45	0.28	03:15 - 03:30	2.02
04-03-2022	21:15 - 21:30	1.02	07:30 - 07:45	12.00	05:15 - 05:30	0.29	13:00 - 13:15	2.90
05-03-2022	09:30 - 09:45	0.88	07:15 - 07:30	15.00	04:15 - 04:30	0.51	04:00 - 04:15	2.68
06-03-2022	09:30 - 09:45	0.69	06:30 - 06:45	8.00	23:45 - 24:00	0.30	14:00 - 14:15	2.57
07-03-2022	22:30 - 22:45	1.35	17:30 - 17:45	12.00	04:00 - 04:15	0.29	02:30 - 02:45	2.51
08-03-2022	22:30 - 22:45	1.08	18:45 - 19:00	12.00	04:15 - 04:30	0.36	03:15 - 03:30	2.87
09-03-2022	20:45 - 21:00	1.37	07:00 - 07:15	20.00	06:45 - 07:00	0.52	13:00 - 13:15	2.70
10-03-2022	07:30 - 07:45	1.01	19:00 - 19:15	20.00	04:45 - 05:00	0.37	03:30 - 03:45	2.70
11-03-2022	23:30 - 23:45	0.86	18:30 - 18:45	20.00	06:15 - 06:30	0.39	13:00 - 13:15	3.75
12-03-2022	08:00 - 08:15	0.83	18:30 - 18:45	20.00	03:45 - 04:00	0.37	03:15 - 03:30	3.12
13-03-2022	23:45 - 24:00	0.87	00:30 - 00:45	14.00	05:45 - 06:00	0.46	14:00 - 14:15	2.02
14-03-2022	22:30 - 22:45	1.20	18:45 - 19:00	20.00	02:30 - 02:45	0.29	00:45 - 01:00	2.60
15-03-2022	03:30 - 03:45	0.86	18:30 - 18:45	20.00	16:30 - 16:45	0.45	13:30 - 13:45	3.07
16-03-2022	23:45 - 24:00	1.09	07:00 - 07:15	20.00	19:15 - 19:30	0.44	04:00 - 04:15	5.00
17-03-2022	23:45 - 24:00	0.83	06:00 - 06:15	20.00	18:15 - 18:30	0.51	21:45 - 22:00	4.70
18-03-2022	06:00 - 06:15	1.03	06:45 - 07:00	20.00	22:00 - 22:15	0.43	17:30 - 17:45	1.00
19-03-2022	07:00 - 07:15	0.97	23:30 - 23:45	5.39	14:45 - 15:00	0.39	08:45 - 09:00	1.61
20-03-2022	23:00 - 23:15	0.92	23:15 - 23:30	14.03	14:45 - 15:00	0.30	17:30 - 17:45	2.36
21-03-2022	14:15 - 14:30	1.14	16:30 - 16:45	20.00	07:15 - 07:30	0.42	04:00 - 04:15	4.50
22-03-2022	14:30 - 14:45	1.31	06:30 - 06:45	20.00	06:45 - 07:00	0.26	13:00 - 13:15	5.00
23-03-2022	14:00 - 14:15	1.31	00:00 - 00:15	20.00	00:30 - 00:45	0.29	13:00 - 13:15	8.00
24-03-2022	13:30 - 13:45	1.47	00:00 - 00:15	20.00	00:00 - 00:15	0.46	18:00 - 18:15	8.00
25-03-2022	13:00 - 13:15	1.67	00:00 - 00:15	20.00	18:45 - 19:00	0.53	18:00 - 18:15	8.94
26-03-2022	15:30 - 15:45	1.70	00:00 - 00:15	20.00	00:00 - 00:15	0.51	14:30 - 14:45	4.18
27-03-2022	15:00 - 15:15	1.12	00:15 - 00:30	14.23	05:00 - 05:15	0.41	09:00 - 09:15	2.00
28-03-2022	14:45 - 15:00	1.22	18:45 - 19:00	12.00	06:15 - 06:30	0.45	13:00 - 13:15	2.99
29-03-2022	13:00 - 13:15	1.14	05:30 - 05:45	20.00	19:15 - 19:30	0.34	13:00 - 13:15	3.48
30-03-2022	13:15 - 13:30	0.99	00:00 - 00:15	20.00	00:00 - 00:15	0.32	13:00 - 13:15	3.62
31-03-2022	23:00 - 23:15	0.97	00:00 - 00:15	20.00	17:30 - 17:45	0.42	13:00 - 13:15	3.48

MCP: Market Clearing Price (Rs/kWh)

FSV: Final Scheduled Volume (MU)

Annexure-XI**Sellers and Buyers in Real Time Market (RTM) in the month of March, 2022**

S. No.	Entity Name	Sell		Entity Name	Purchase	
		(MU)	Percent (%)		(MU)	Percent (%)
1.	Bihar	315.33	15.60%	Tamilnadu	277.88	13.75%
2.	West Bengal	237.96	11.78%	Andhra Pradesh	264.14	13.07%
3.	Madhya Pradesh	187.72	9.29%	Maharashtra	258.35	12.78%
4.	Rajasthan	183.43	9.08%	Telangana	204.21	10.10%
5.	Orissa	111.60	5.52%	J&K	202.30	10.01%
6.	Himachal Pradesh	78.95	3.91%	Gujarat	164.67	8.15%
7.	Chhattisgarh	76.04	3.76%	Haryana	158.57	7.85%
8.	Uttar Pradesh	68.80	3.40%	Uttar Pradesh	106.18	5.25%
9.	Delhi	60.08	2.97%	Delhi	58.60	2.90%
10.	Kerala	56.62	2.80%	Punjab	45.50	2.25%
11.	Telangana	50.69	2.51%	Rajasthan	43.46	2.15%
12.	Karnataka	41.72	2.06%	West Bengal	41.08	2.03%
13.	Kameng HEP	36.54	1.81%	Uttarakhand	29.48	1.46%
14.	RKM Power	34.47	1.71%	Assam	21.33	1.06%
15.	Assam	34.25	1.69%	Chhattisgarh	20.17	1.00%
16.	MB Power	33.15	1.64%	Orissa	17.81	0.88%
17.	Manipur	31.90	1.58%	Karnataka	17.49	0.87%
18.	Tripura	30.99	1.53%	Madhya Pradesh	16.25	0.80%
19.	DVC	30.18	1.49%	Jharkhand	15.14	0.75%
20.	Jindal Power Ltd. Stg-	30.17	1.49%	Meghalaya	9.47	0.47%
21.	Sembcorp Gayatri	30.02	1.49%	Himachal Pradesh	8.98	0.44%
22.	GMR Warora	27.27	1.35%	ArcelorMittal Nippon	8.12	0.40%
23.	Jindal Power	18.84	0.93%	Bihar	8.09	0.40%
24.	Raipur Energen	16.61	0.82%	DVC	5.33	0.26%
25.	Maharashtra	14.57	0.72%	Kerala	5.25	0.26%
26.	Andhra Pradesh	14.51	0.72%	Dadra & Nagar Haveli	4.23	0.21%
27.	Essar Power MP Ltd	14.28	0.71%	Daman & Diu	2.02	0.10%
28.	Sembcorp Energy India	13.01	0.64%	Goa WR	1.94	0.10%
29.	J&K	11.15	0.55%	Maruti Clean Coal	1.63	0.08%
30.	Sikkim	10.95	0.54%	Goa SR	1.47	0.07%
31.	Bongaigaon	10.29	0.51%	BALCO 2	0.80	0.04%
32.	Jharkhand	9.00	0.45%	Railways	0.60	0.03%
33.	Jhabua Power	6.83	0.34%	Manipur	0.16	0.01%
34.	KSK Mahanadi	6.70	0.33%	Jindal Power Ltd. Stg-II	0.08	0.00%
35.	SKS Power	6.40	0.32%	Tripura	0.05	0.00%
36.	Teesta -3	5.38	0.27%	Sikkim	0.02	0.00%
37.	Tamilnadu	4.56	0.23%			
38.	Gujarat	4.29	0.21%			
39.	Dadri TPS	4.02	0.20%			
40.	Meghalaya	3.93	0.19%			
41.	GMR Kamalanga	3.80	0.19%			

42.	Dikchu	3.62	0.18%			
43.	NLC TPS-II	3.51	0.17%			
44.	Neyveli New Thermal	3.05	0.15%			
45.	Singoli Bhagwati	3.04	0.15%			
46.	Renew Solar Energy	2.86	0.14%			
47.	NLC TPS-II Stg-2	2.75	0.14%			
48.	Palatana	2.44	0.12%			
49.	ACBIL	2.43	0.12%			
50.	Adhunik Power	2.32	0.11%			
51.	Raigarh Energy Ltd.	1.97	0.10%			
52.	NLC	1.78	0.09%			
53.	Goa WR	1.71	0.08%			
54.	Jorethang	1.60	0.08%			
55.	Karcham Wangtoo	1.42	0.07%			
56.	Sainj HEP	1.42	0.07%			
57.	BALCO 2	1.26	0.06%			
58.	Sasan UMPP	1.24	0.06%			
59.	AD Hydro	1.18	0.06%			
60.	Sorang HEP,	1.13	0.06%			
61.	Uttarakhand	1.09	0.05%			
62.	DB Power	1.01	0.05%			
63.	RGPPL_Others	0.97	0.05%			
64.	Ostro Energy Private	0.90	0.04%			
65.	Dadra & Nagar Haveli	0.89	0.04%			
66.	Haryana	0.85	0.04%			
67.	Maruti Clean Coal	0.84	0.04%			
68.	Nagaland	0.83	0.04%			
69.	Jindal Steel	0.81	0.04%			
70.	Adani Hybrid Energy	0.66	0.03%			
71.	Arunachal Pradesh	0.63	0.03%			
72.	RGPPL_IR	0.63	0.03%			
73.	Adani Hybrid Energy	0.42	0.02%			
74.	Renew Solar Urja	0.42	0.02%			
75.	Renew Surya Ravi	0.39	0.02%			
76.	RGPPL	0.38	0.02%			
77.	Lanco Budhil	0.21	0.01%			
78.	AGTPP	0.20	0.01%			
79.	Shree Cement	0.18	0.01%			
80.	Ramagundam Floating	0.17	0.01%			
Total Volume of top 10		1,376.53	68.12%		1,740.40	86.12%
Total Volume in PXs		2,020.86		Total Volume in PXs	2,020.86	

Annexure-XII**Cross Border Electricity Transactions in Day Ahead Market (DAM) in IEX with Nepal and Bhutan during the month of March, 2022**

S. No	Delivery Date	Buy Volume By Nepal (MU)	Buy Volume by Bhutan (MU)
1	01-03-2022	8.10	3.94
2	02-03-2022	7.62	3.62
3	03-03-2022	8.37	3.75
4	04-03-2022	7.64	3.75
5	05-03-2022	5.55	3.70
6	06-03-2022	8.51	3.42
7	07-03-2022	6.73	3.34
8	08-03-2022	6.69	2.54
9	09-03-2022	6.82	1.62
10	10-03-2022	6.51	1.00
11	11-03-2022	6.78	0.91
12	12-03-2022	4.93	0.77
13	13-03-2022	8.33	0.52
14	14-03-2022	5.70	0.48
15	15-03-2022	6.66	0.39
16	16-03-2022	4.72	0.37
17	17-03-2022	1.73	-
18	18-03-2022	4.58	-
19	19-03-2022	1.94	-
20	20-03-2022	4.00	-
21	21-03-2022	1.83	-
22	22-03-2022	1.17	-
23	23-03-2022	0.25	-
24	24-03-2022	0.67	-
25	25-03-2022	6.21	-
26	26-03-2022	3.19	-
27	27-03-2022	2.70	-
28	28-03-2022	2.53	-
29	29-03-2022	2.21	-
30	30-03-2022	2.31	-
31	31-03-2022	2.34	-
Total		147.36	34.13
		181.49	

-: No

transaction happened.

Note: *Cross Border Transactions of Electricity of 181.49 MU (147.36 MU purchase by Nepal and 34.13 MU purchase by Bhutan) happened during March, 2022 in IEX, which is included in DAM Volume of March, 2022 in IEX*

Analysis for change in trend of Final Scheduled Volume in DAM on 1st Sunday & 4th Monday of March, 2022 (i.e. 6th March, 2022 & 28th March, 2022)

Final Scheduled Volume (MU) and the Daily MCP (Rs/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 March, 2022, it is observed that on first Sunday (06th March, 2022), FSV showed increasing trend in comparison to first Saturday (05th March, 2022) and FSV on fourth Monday (28th March, 2022) showed decreasing trend in comparison to fourth Sunday (27th March, 2022). On analysis, it has been found as under:

- (i) On first Sunday (06th March, 2022), although there was decrease in purchase on power exchange by some of the States in comparison to first Saturday (05th March, 2022) by **12.05 MU** [i.e. Haryana (4.25 MU), Tamil Nadu (3.97 MU), Punjab (2.40 MU) and Gujarat (1.69 MU), etc.], there was also increase in purchase on power exchange by some of the States by **19.84 MU** [i.e. Telangana (6.20 MU), Andhra Pradesh (4.40 MU), NVVN(SNA)-NEA (2.84 MU), Karnataka (2.23 MU), Maharashtra (1.90 MU) and Rajasthan (1.42 MU), etc.]. This resulted in an overall increase in FSV by **7.79 MU** on Sunday (06th March, 2022) as compared to Saturday (05th March, 2022).
- (ii) On fourth Monday (28th March, 2022), although there was increase in purchase on power exchange by some of the States in comparison to Sunday (27th March, 2022) by **28.39 MU** [i.e. Andhra Pradesh (13.56 MU), Telangana (10.26 MU), Tamil Nadu (4.55 MU) and Delhi (0.21 MU), etc.], there was also decrease in purchase on power exchange by some of the States by **40.43 MU** [i.e. Maharashtra (11.98 MU), Punjab (9.85 MU), Uttar Pradesh (6.96 MU), Gujarat (5.81 MU) and Haryana (5.54 MU), etc.]. This resulted in an overall decrease in FSV by **12.04 MU** on Monday (28th March, 2022).

Appendix-II**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.
13 Bid area 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 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 MCP** is the average of MCP of all 96 Time Blocks of the day during which transaction happened.
5. **Day-Ahead Market (DAM)** on the power exchanges are market for electricity where market participants purchase and sell electricity at financially binding day-ahead prices for the following day.
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 through Intra-Day Contracts, Day ahead contingency Contracts, Daily Contracts and Weekly Contracts for both solar and non-Solar Renewable Energy (RE) generation. GTAM is a market-based mechanism, where RE surplus and RE deficit States can trade RE Power and balance their RPO targets.
10. **Green Day Ahead Market (GDAM)** is based on the principles of current Term Ahead Market (TAM), where market participants purchase and sell electricity generated from renewable sources at financially binding day-ahead prices for the following day.
11. **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.

- 12. Real Time Market (RTM)** on the power exchanges is the market for electricity where market participants buy/ sell electricity on a half-hourly market and would commence with the end of the right to revision of schedule or declared capability and would end with gate closure. The auction sessions would be conducted every half an hour for the delivery of power for the duration of 30 minutes in two time blocks of 15 minutes each to commence from one hour after the closure of the RTM trading session.
- 13. Term Ahead Market (TAM)** on the power exchanges is the market for electricity where market participants buy/sell electricity on a term basis ranging from 3 hours before actual despatch (i.e. intra-day) and up to 11 days in advance. There are 4 types of contracts in TAM, namely; Intra-day, Day Ahead Contingency, Daily and Weekly.