



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 January, 2022-reg.

In the month of January, 2022 a total of 111,808 MU of electricity was transacted in the country out of which 52,742 MU was transacted through ISTS, and the remaining through state controlled generating stations.

A total of 15,769 MU was transacted under Short Term Market, out of which 7,949 MU was transacted through Power Exchanges and remaining happened as bilateral transactions & deviations. Thus, the total short term trade in January, 2022 was 14.02 % of total volume of electricity traded in January, 2022 and 7.11 % was through Power Exchanges.

If we compare these transactions with respect to the electricity supplied through ISTS, the short term transactions constitutes about 29.73 % of ISTS transactions and power exchanges constitutes 15.07 %.

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

Pardeep Jindal
Chief Engineer (RA)

To
All Stake holders



सत्यमेव जयते

जनवरी, 2022 मासिक मार्केट मॉनिटरिंग रिपोर्ट

Monthly Market Monitoring Report

January, 2022



भारत सरकार/ Government of India

विद्युत मंत्रालय/ Ministry of Power

केन्द्रीय विद्युत प्राधिकरण/ Central Electricity Authority

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दिनांक: 11.04.2022

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MARKET MONITORING REPORT
FOR THE MONTH OF JANUARY, 2022

SUMMARY

SUMMARY FOR MONTH: JANUARY, 2022

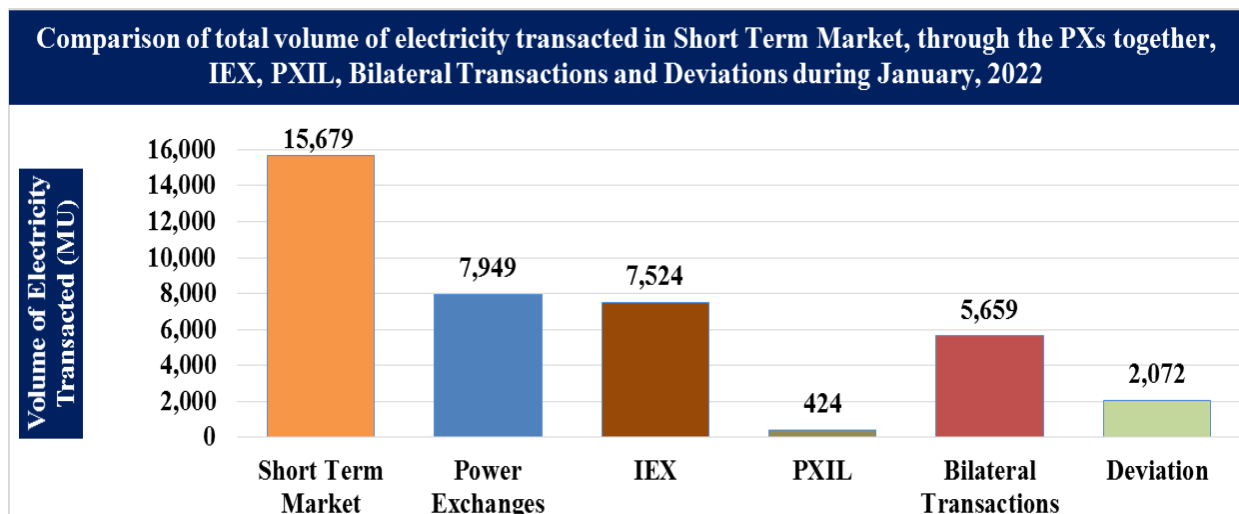
SUMMARY OF ELECTRICITY TRANSACTIONS ON POWER EXCHANGES IN INDIA

- A total volume of **7,948.59 MU** electricity was transacted in both the power exchanges i.e. IEX & PXIL, during the month of January, 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	5,280.26	3.89	-	-
GDAM	198.35	3.93	-	-
RTM	1,575.13	3.45	0.005	-
TAM	655.08	4.30	14.59	17.88
GTAM	239.77	4.72	0.45	-
Total in PXs	7,948.59	3.86*	15.04	17.88

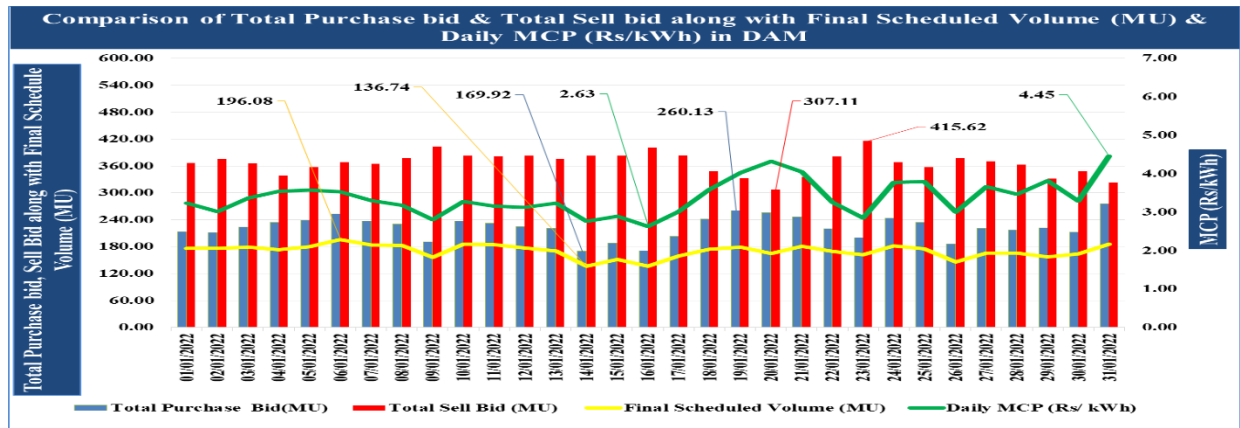
* The total average is weighted average of all market segments.

- Under the Bilateral trade a total of **5,659 MU** of electricity was transacted and **2,072 MU** was transferred as deviation. Thus a total of **15,679 MU** of electricity was transacted as short term trade. In the month of January, 2022 a total of **111,808 MU** of electricity was supplied in the country, thus the share of short term market in the total volume of electricity traded in January, 2022 was **14.02 %**.

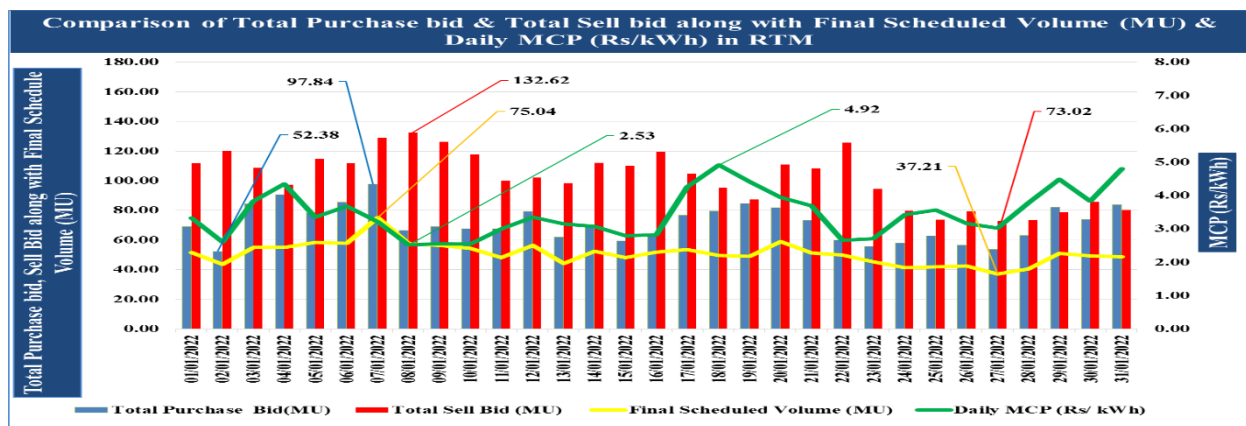


- The total volume of congestion that happened during the month of January, 2022 was **15.04 MU** which is only 0.19 % of the total volume of electricity transacted in the power exchanges and 0.013 % of total energy supplied during the month of January, 2022. There was no congestion observed in DAM and GDAM in January, 2022, whereas there was congestion in RTM on 11th January, 2022, in TAM on 5th & 8th January, 2022 and in GTAM on 17th & 27th January, 2022. The total volume of real time curtailment reported in the month of January, 2022 was only **17.88 MU**. The total volume of electricity scheduled at ISTS during the month of January, 2022 was **52,742 MU**. **The total volume of electricity transacted in the short term market was 29.72 % of total volume schedule at ISTS in the month of January, 2022.**
- The variation of Purchase and Sell bids, Final Scheduled Volume and Daily MCP in DAM and RTM during the month of January, 2022 are shown in following figures:

DAM Volume

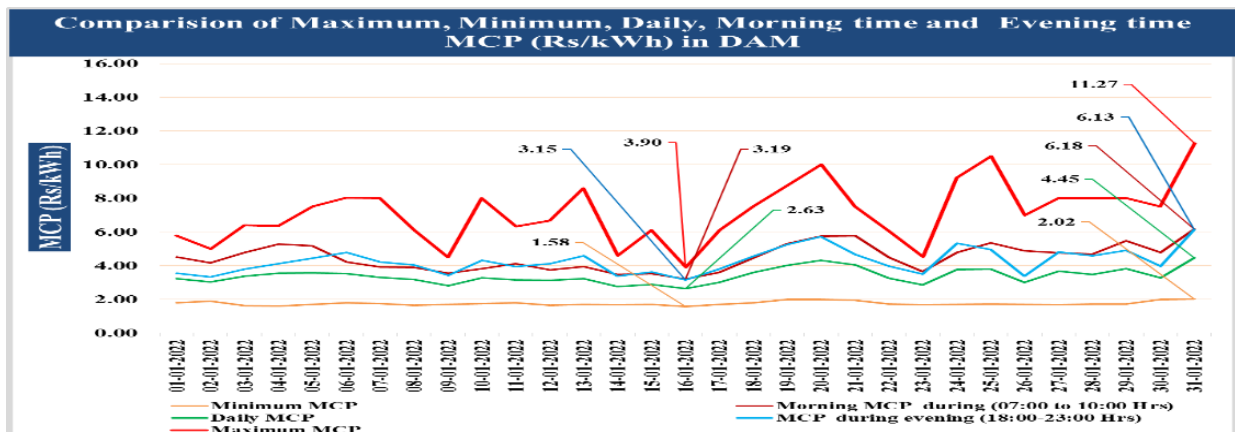


RTM Volume

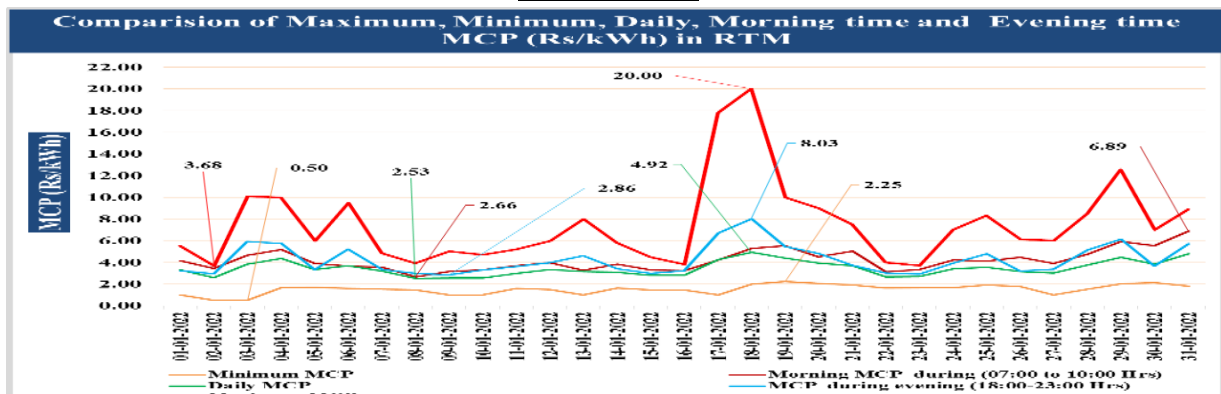


- The variation of Maximum, Minimum, Daily, Morning and Evening time MCPs in DAM and RTM during the month of January, 2022 are shown in following figures:

DAM Prices



RTM Prices



OVERVIEW OF REPORT

REPORT FOR MONTH: JANUARY, 2022

OVERVIEW OF 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 January, 2022 was **5,280.26 MU**. The total energy supplied in the country during the month of January, 2022 was 111,808 MU. Thus, the volume of electricity transacted on both the power exchanges in DAM during January, 2022 was 4.72 % of the total energy supplied in the country. Comparing with the total volume of electricity transacted in DAM during the past month .i.e. December, 2021, it was **5,424.15 MU** which was 4.97% of the total energy supplied [109,177 MU] in the country during December, 2021. Similarly, the total volume of electricity transacted in DAM during previous year .i.e. January, 2021, it was **5,591.70 MU** which was 5.09 % of the total energy supplied [109,767 MU] in the country during January, 2021.
- 1.2. The volume of electricity transacted on IEX and PXIL during January, 2022 were **5,279.70 MU and 0.56 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 December, 2021 were **5,423.27 MU and 0.88 MU**, respectively, which means that the total volume transacted on IEX was **99.98 %** of the total volume on power exchanges. Also, the volume of electricity transacted on IEX and PXIL during January, 2021, were **5,584.07 MU and 7.63 MU** respectively.
- 1.3. There was Cross Border Transactions of Electricity of **259.57 MU** (i.e. 158.29 MU buy by Nepal and 101.28 MU buy by Bhutan) happened in DAM in IEX during January, 2022. Whereas, there was Cross Border Transactions of Electricity of **74.86 MU** (69.03 MU buy and 5.83 MU sell) with Nepal in DAM in IEX during December, 2021.
- 1.4. The Average Market Clearing Price (MCP) on IEX during the month of January, 2022 was **Rs 3.39/kWh**, which shows a decrease of **4.24 %** and an increase of **6.60 %** when compared with average MCP's for the month of December, 2021 and January, 2021, which were **Rs 3.54/kWh and Rs 3.18/kWh**, respectively. On PXIL, the average MCP during the month of January, 2022 was **Rs 4.38/kWh**, which shows an increase of **3.55 %** and **13.77 %** when compared with average MCP's for the month of December, 2021 and January, 2021, which were **Rs 4.23/kWh and Rs 3.85/kWh** respectively.

2. SUMMARY OF THE 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 January, 2022 with that of December, 2021 and January, 2021 is given in Table- 1A & 1B:

(a) January, 2022 vis- a -vis December, 2021

Daily MCP (Rs/kWh)	IEX			PXIL		
	January, 2022	December, 2021	% Change	January, 2022	December, 2021	% Change
Minimum	2.63	2.69	-2.23	3.99	2.16	84.72
Maximum	4.45	4.41	0.91	4.99	5.50	-9.27
Average	3.39	3.54	-4.24	4.38	4.23	3.55

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

Daily MCP (Rs/kWh)	IEX			PXIL		
	January, 2022	January, 2021	% Change	January, 2022	January, 2021	% Change
Minimum	2.63	2.66	-1.13	3.99	3.19	25.08
Maximum	4.45	3.85	15.58	4.99	4.71	5.94
Average	3.39	3.18	6.60	4.38	3.85	13.77

Table: 1B

- 2.2.** The maximum Area Clearing Price (ACP) of **Rs 11.27/kWh** in IEX was observed in all 13 regions during the time blocks 18:45-19:00 Hrs on 31st January, 2022. As there was no congestion in transmission system, the MCP for these time-block dates was also **Rs 11.27/kWh**. However, the Daily MCP in IEX on 31st January, 2022 was **Rs 4.45/kWh**. Whereas, in PXIL, the maximum ACP of **Rs 4.99/kWh** was observed in all 13 regions during the multiple time blocks on 8th, 18th, 21st, 22nd, 25th to 28th & 31st January, 2022 [time block wise details are given at **Annexure XIII**. As there was no congestion in transmission system, the MCP for these time blocks was also **Rs 4.90/kWh**. The details of Daily MCP in PXIL on 8th, 18th, 21st, 22nd, 25th to 28th & 31st January, 2022 are also given at **Annexure XIII**.
- 2.3.** The minimum ACP of **Rs 1.58/kWh** in IEX was observed in all 13 regions during the time block **3:30-3:45 Hrs** on 16th January, 2022. As there was no congestion in transmission system, the MCP for this time-block was also **Rs 1.58/kWh**. However, the Daily MCP in IEX on pan India basis on 16th January, 2022 was **Rs 2.63/kWh**. Whereas, in PXIL, the minimum ACP of **Rs 3.99/kWh** was observed in all 13 regions during the multiple time blocks on 6th to 8th, 11th to 13th, 18th to 22nd, 25th & 28th January, 2022 [time block wise details are given at **Annexure XIII**. As there was no congestion in transmission system, the MCP for these time blocks was also **Rs 3.99/kWh**. The details of Daily MCP in PXIL on 6th to 8th, 11th to 13th, 18th to 22nd, 25th & 28th January, 2022 are also given at **Annexure XIII**.
- 2.4.** A comparison of the Minimum and Maximum Area Clearing Price (ACP) during the months of January, 2022 with that of December, 2021 and January, 2021 is given in Table-2A&2B:

(a) January, 2022 vis- a -vis December, 2021

ACP (Rs/kWh)	IEX			PXIL		
	January, 2022	December, 2021	% Change	January, 2022	December, 2021	% Change
Minimum	1.58	1.47	7.48	3.99	1.85	115.68
Maximum	11.27	20.00	-43.65	4.99	5.50	-9.27

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

ACP (Rs/kWh)	IEX			PXIL		
	January, 2022	January, 2021	% Change	January, 2022	January, 2021	% Change
Minimum	1.58	1.55	1.94	3.99	1.51	164.24
Maximum	11.27	8.00	40.88	4.99	6.71	-25.63

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 January, 2022 with that of December, 2021 and January, 2021 is given in Table-3A & 3B:

(a) January, 2022 vis- a- vis December, 2021

Final Scheduled Volume (MU)	IEX			PXIL		
	January, 2022	December, 2021	% Change	January, 2022	December, 2021	% Change
Minimum	136.74	155.60	-12.12	0.01	0.01	0.00
Maximum	196.08	209.33	-6.33	0.10	0.28	-64.29
Average	170.31	174.94	-2.65	0.04	0.05	-20.00

Table: 3A**(b) January, 2022 vis- a- vis January, 2021**

Final Scheduled Volume (MU)	IEX			PXIL		
	January, 2022	January, 2021	% Change	January, 2022	January, 2021	% Change
Minimum	136.74	156.75	-12.77	0.01	0.02	-50.00
Maximum	196.08	199.03	-1.48	0.10	1.22	-91.80
Average	170.31	180.13	-5.45	0.04	0.40	-90.00

Table: 3B**3. TERM AHEAD MARKET (TAM)****Term Ahead Market (TAM) (on Trade Date Basis)**

- 3.1.** The total volume of electricity transacted on both the power exchanges in Term Ahead Market in January, 2022 on trade date basis was **601.76 MU**, out of which, **364.09 MU** (60.50%) was transacted on IEX and **237.67 MU** (39.50%) was transacted on PXIL.
- 3.2.** The total volume of electricity transacted on both the power exchanges in Term Ahead Market in December, 2021 on trade date basis was **721.42 MU**, out of which, **421.34 MU** (58.40%) was transacted on IEX and **300.08 MU** (41.60%) was transacted on PXIL.

- 3.3. Similarly, total volume of electricity transacted during January, 2021 in Term Ahead Market on trade date basis on both the power exchanges was **983.44MU**, out of which, **324.31 MU** (32.98%) was transacted on IEX and **659.13 MU** (67.02%) was transacted on PXIL.
- 3.4. With respect to the total energy supplied during month of January, 2022 in the country, the volume of electricity traded on power exchanges in TAM on trade date basis represents **0.54 %** of the total energy supplied. The same was **0.66%** in December, 2021 and **0.89 %** in January, 2021.
- 3.5. In the month of January, 2022, there was transmission congestion of **14.40 MU** in Daily contract and **0.19 MU** in Dai Ahead Contingency contract in IEX in TAM. Whereas, In PXIL there was transmission congestion TAM in the month of January, 2022.
- 3.6. **The comparison of total volume of electricity transacted and Average MCP on both the power exchanges in Term Ahead Market (TAM) during January, 2022 with December, 2021 and January, 2021 is given in Table- 4A, 4B & 4C:**

(a) January, 2022 vis- a- vis December, 2021 (on trade Date Basis)

Contract Type	IEX			PXIL		
	January, 2022	December, 2021	% Change	January, 2022	December, 2021	% Change
Intra Day (MU)	0.17	0.87	-80.46	0.26	6.05	-95.70
Day Ahead Contingency(MU)	102.18	73.67	38.70	203.81	258.03	-21.01
Daily/ AnyDay (MU)	261.74	346.80	-24.53	33.60	36.00	-6.67
Weekly (MU)	-	-	NA	-	-	NA

- : No Transaction happened

NA: Not Applicable

Table: 4A

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

Contract Type	IEX			PXIL		
	January, 2022	January, 2021	% Change	January, 2022	January, 2021	% Change
Intra Day (MU)	0.17	1.76	-90.34	0.26	33.35	-99.22
Day Ahead Contingency(MU)	102.18	50.53	102.22	203.81	-	NA
Daily/ AnyDay (MU)	261.74	272.02	-3.78	33.60	625.78	-94.63
Weekly (MU)	-	-	NA	-	-	NA

- : No Transaction happened

NA: Not Applicable

Table: 4B

(c) Average MCP, January, 2022 vis- a- vis January, 2021 and December, 2021 (on trade Date Basis)

Exchange	Period	Average MCP (Rs/kWh)			
		Intra Day	Day Ahead Contingency	Daily or Any Day	Weekly
IEX	January, 2022	3.50	4.08	3.39	-
	December, 2021	3.36	4.69	3.28	-
	%Change (Month over Month)	4.17	-13.01	3.35	NA
	January, 2021	3.38	3.21	2.75	NA
	%Change	3.55	27.10	23.27	NA

PXIL	(Year over Year)				
	January, 2022	8.00	3.66	3.41	-
	December, 2021	5.42	4.12	3.10	-
	%Change (Month over Month)	47.60	-11.17	10.00	NA
	January, 2021	3.75	-	3.12	-
	%Change (Year over Year)	115.05	NA	9.29	NA

-: No transaction happened

NA: Not Applicable

Table: 4C

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

- 3.7. The total volume of electricity transacted on both the power exchanges in Term Ahead Market in January, 2022 on delivery date basis was **655.08 MU**, out of which, **390.27 MU** (59.58%) was transacted on IEX and **264.81 MU** (40.42%) was transacted on PXIL.
- 3.8. The total volume of electricity transacted on both the power exchanges in Term Ahead Market in December, 2021 on delivery date basis was **643.00 MU**, out of which, **379.77 MU** (59.06%) was transacted on IEX and **263.23 MU** (40.94%) was transacted on PXIL.
- 3.9. Similarly, total volume of electricity transacted during January, 2021 in Term Ahead Market on both the power exchanges on delivery date basis was **1,150.18 MU**, out of which, **524.08 MU** (45.57 %) was transacted on IEX and **626.10 MU** (54.43 %) was transacted on PXIL.
- 3.10. With respect to the total energy supplied during the month of January, 2022 in the country, the volume of electricity traded on the power exchanges in TAM on delivery date basis represents **0.59 %** of the total energy supplied. The same was **0.59 %** in December, 2021 and **1.05 %** in January, 2021.
- 3.11. In the month of January, 2022, there was real time curtailment of **17.88 MU** under DAC contract in TAM in IEX. Whereas, there was no real time curtailment in PXIL in TAM during the month of January, 2022.
- 3.12. 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 January, 2022 with December, 2021 and January, 2021 is given in Table – 4D, 4E & 4 F:
- (a) January, 2022 vis- a- vis December, 2021 (on Delivery Date Basis)

Contract Type	IEX			PXIL		
	January, 2022	December, 2021	% Change	January, 2022	December, 2021	% Change
Intra Day (MU)	0.17	0.87	-80.46	0.26	6.05	-95.70
Day Ahead Contingency(MU)	102.31	72.90	40.34	205.75	253.58	-18.86
Daily/Any Day (MU)	287.79	276.00	4.27	58.80	3.60	1,533.33
Weekly (MU)	-	-	NA	-	-	NA

- : No transaction happened

NA: Not Applicable

Table: 4D

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

Contract Type	IEX			PXIL		
	January, 2022	January, 2021	% Change	January, 2022	January, 2021	% Change
Intra Day (MU)	0.17	1.76	-90.34	0.26	33.35	-99.22
Day Ahead Contingency MU)	102.31	48.30	111.82	205.75	-	NA
Daily/ Any Day (MU)	287.79	474.02	-39.29	58.80	592.75	-90.08
Weekly (MU)	-	-	NA	-	-	NA

-: No transaction happened

NA: Not Applicable

Table: 4E**(c) Average MCP, January, 2022 vis- a- vis January, 2021 and December, 2021 (on Delivery Date Basis)**

Exchange	Period	Average MCP (Rs/kWh)			
		Intra Day	Day Ahead Contingency	Daily or Any Day	Weekly
IEX	January, 2022	3.50	4.05	3.37	-
	December, 2021	3.36	4.66	3.36	-
	%Change (Month over Month)	4.17	-13.09	0.30	NA
	January, 2021	3.38	3.19	2.66	-
	%Change (Year over Year)	3.55	26.96	26.69	NA
PXIL	January, 2022	8.00	3.65	3.25	-
	December, 2021	5.42	3.85	3.50	-
	%Change (Month over Month)	47.60	-5.19	-7.14	NA
	January, 2021	3.62	-	3.17	-
	%Change (Year over Year)	120.99	NA	2.52	NA

-: No transaction happened

NA: Not Applicable

Table: 4F**4. REAL TIME MARKET (RTM)**

The transaction of Electricity in Real Time Market was started from 1st June, 2021 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 January, 2022 was **1,575.13 MU**, out of which, **1,575.13 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 January, 2022 as compared with December, 2021 and January, 2021 are as given in table 5A, 5B & 5C:

(i) Final Scheduled Volume:

Exchange	Period	Final Scheduled Volume (MU)			
		Total	Minimum	Maximum	Average
IEX	January, 2022	1575.13	37.21	75.04	50.81
	December, 2021	1512.39	33.95	67.45	48.79
	Change % (Month over Month)	4.15	9.60	11.25	4.14

PXIL	January, 2021	1233.31	21.41	55.75	39.78
	Change % (Year over Year)	27.72	73.80	34.60	27.73
	January, 2022	-	-	-	-
	December, 2021	-	-	-	-
	Change % (Month over Month)	NA	NA	NA	NA
	January, 2021	-	-	-	-
	Change % (Year over Year)	NA	NA	NA	NA

-: No transaction happened

NA: Not Applicable

Table-5A

(ii) Daily Market Clearing Price (MCP):

Exchange	Period	Daily MCP (Rs/kWh)		
		Minimum	Maximum	Average
IEX	January, 2022	2.53	4.92	3.45
	December, 2021	2.51	5.12	3.61
	Change % (Month over Month)	0.80	-3.91	-4.43
	January, 2021	2.32	3.99	3.02
	Change % (Year over Year)	9.05	23.31	14.24
PXIL	January, 2022	-	-	-
	December, 2021	-	-	-
	Change % (Month over Month)	NA	NA	NA
	January, 2021	-	-	-
	Change % (Year over Year)	NA	NA	NA

-: No transaction happened

NA: Not Applicable

Table-5B

(iii) Area Clearing Price (ACP):

Exchange	Period	ACP (Rs/kWh)	
		Minimum	Maximum
IEX	January, 2022	0.50	20.00
	December, 2021	0.95	20.00
	Change % (Month over Month)	-47.37	0.00
	January, 2021	0.40	9.00
	Change % (Year over Year)	25.00	122.22
PXIL	January, 2022	-	-
	December, 2021	-	-
	Change % (Month over Month)	NA	NA
	January, 2021	-	-
	Change % (Year over Year)	NA	NA

-: No transaction happened

NA: Not Applicable

Table -5C

5. **GREEN TERM AHEAD MARKET (GTAM):**

The transaction of electricity in Green Term Ahead Market was started in IEX w.e.f. 21st August, 2021 onwards, whereas, in PXIL, GTAM (Non-Solar) was started w.e.f. 24th March, 2022 and GTAM (Solar) w.e.f. June, 2022 onwards. The total volume of electricity transacted in both the power exchanges in GTAM on trade date basis was **237.66 MU** (122.11 MU in Solar and 115.55 MU in non-Solar), whereas, the same on delivery date basis was **239.77 MU** (119.26 MU in Solar and 120.51 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 January, 2022 on trade date basis and delivery date basis has been shown in Tables 6A to 6H.

5.1. 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 January, 2022 and its comparison with December, 2021 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	January, 2022	19.39	0.03	2.15	0.67
		December, 2021	60.83	0.15	6.53	1.96
		%Change (Month over Month)	-68.12	-80.00	-67.08	-65.82
		January, 2021	72.92	0.49	5.56	2.35
		%Change (Year over Year)	-73.41	-93.88	-61.33	-71.49
	Intraday	January, 2022	1.23	0.04	0.06	0.04
		December, 2021	4.33	0.02	1.51	0.14
		%Change (Month over Month)	-71.59	100.00	-96.03	-71.43
		January, 2021	0.38	0.38	0.38	0.38
		%Change (Year over Year)	223.68	-89.47	-84.21	-89.47
IEX	Daily/ Anyday	January, 2022	-	-	-	-
		December, 2021	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		January, 2021	2.30	2.30	2.30	2.30
		%Change (Year over Year)	NA	NA	NA	NA
	Weekly	January, 2022	-	-	-	-
		December, 2021	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		January, 2021	16.80	16.80	16.80	16.80
		%Change (Year over Year)	NA	NA	NA	NA
PXIL	Day Ahead Contingency	January, 2022	101.49	0.58	5.87	3.27
		December, 2021	105.60	1.19	9.31	3.52
		%Change (Month over Month)	-3.89	-51.26	-36.95	-7.10
	Intraday	January, 2022	-	-	-	-
		December, 2021	0.15	0.15	0.15	0.15
		%Change (Month over Month)	NA	NA	NA	NA
	Daily/ Anyday	January, 2022	-	-	-	-
		December, 2021	-	-	-	-
		%Change	NA	NA	NA	NA

		(Month over Month)				
	Weekly	January, 2022	-	-	-	-
		December, 2021	-	-	-	-
		%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
-	Day Ahead Contingency	January, 2022	2.39	4.50	3.75
		December, 2021	3.41	4.11	3.73
		%Change (Month over Month)	-29.91	9.49	0.54
		January, 2021	3.71	4.57	4.19
		%Change (Year over Year)	-35.58	-1.53	-10.50
	Intraday	January, 2022	3.50	3.60	3.52
		December, 2021	3.30	3.63	3.43
		%Change (Month over Month)	6.06	-0.83	2.62
		January, 2021	4.35	4.35	4.35
		%Change (Year over Year)	-19.54	-17.24	-19.08
	Daily/Anyday	January, 2022	-	-	-
		December, 2021	-	-	-
		%Change (Month over Month)	NA	NA	NA
		January, 2021	4.36	4.36	4.36
		%Change (Year over Year)	NA	NA	NA
	Weekly	January, 2022	-	-	-
		December, 2021	-	-	-
		%Change (Month over Month)	NA	NA	NA
		January, 2021	4.30	4.30	4.30
		%Change (Year over Year)	NA	NA	NA
PXIL	Day Ahead Contingency	January, 2022	3.46	4.77	3.92
		December, 2021	3.51	4.16	3.79
		%Change (Month over Month)	-1.42	14.66	3.43
	Intraday	January, 2022	-	-	-
		December, 2021	3.41	3.41	3.41
		%Change (Month over Month)	NA	NA	NA
	Daily/ Anyday	January, 2022	-	-	-
		December, 2021	-	-	-
		%Change (Month over Month)	NA	NA	NA
	Weekly	January, 2022	-	-	-
		December, 2021	-	-	-

		%Change (Month over Month)	NA
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-: No transaction happened

NA: Not Applicable

Table-6B

5.2. 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 January, 2022 and its comparison with December, 2021 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	January, 2022	19.82	0.03	2.15	0.64
		December, 2021	66.45	0.15	6.53	2.14
		%Change (Month over Month)	-70.17	-80.00	-67.08	-70.09
		January, 2021	71.18	0.49	5.56	2.30
		%Change (Year over Year)	-72.16	-93.88	-61.33	-72.17
	Intraday	January, 2022	1.23	0.04	0.06	0.04
		December, 2021	4.33	0.02	1.51	0.14
		%Change (Month over Month)	-71.59	100.00	-96.03	-71.43
		January, 2021	0.38	0.38	0.38	0.38
		%Change (Year over Year)	223.68	-89.47	-84.21	-89.47
	Daily/Anyday	January, 2022	-	-	-	-
		December, 2021	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		January, 2021	1.76	0.20	0.27	0.25
		%Change (Year over Year)	NA	NA	NA	NA
	Weekly	January, 2022	-	-	-	-
		December, 2021	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		January, 2021	16.80	2.40	2.40	2.40
		%Change (Year over Year)	NA	NA	NA	NA
PXIL	Day Ahead Contingency	January, 2022	98.21	0.58	5.45	3.17
		December, 2021	103.96	0.96	9.32	3.47
		%Change (Month over Month)	-5.53	-39.58	-41.52	-8.65
	Intraday	January, 2022	-	-	-	-
		December, 2021	0.15	0.15	0.15	0.15
		%Change (Month over Month)	NA	NA	NA	NA
	Daily/Anyday	January, 2022	-	-	-	-
		December, 2021	7.00	1.40	1.40	1.40
		%Change (Month over Month)	NA	NA	NA	NA

	Weekly	January, 2022	-
		December, 2021	-

-: 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	January, 2022	2.39	4.50	3.49
		December, 2021	3.41	4.11	3.73
		%Change (Month over Month)	-29.91	9.49	-6.43
		January, 2021	3.71	4.57	4.18
		%Change (Year over Year)	-35.58	-1.53	-16.51
	Intraday	January, 2022	3.50	3.60	3.52
		December, 2021	3.30	3.63	3.43
		%Change (Month over Month)	6.06	-0.83	2.62
		January, 2021	4.35	4.35	4.35
		%Change (Year over Year)	-19.54	-17.24	-19.08
	Daily/Anyday	January, 2022	-	-	-
		December, 2021	-	-	-
		%Change (Month over Month)	NA	NA	NA
		January, 2021	4.39	4.50	4.44
		%Change (Year over Year)	-29.16	-16.00	-24.10
	Weekly	January, 2022	-	-	-
		December, 2021	-	-	-
		%Change (Month over Month)	NA	NA	NA
		January, 2021	4.30	4.30	4.30
		%Change (Year over Year)	NA	NA	NA
PXIL	Day Ahead Contingency	January, 2022	3.46	4.77	3.88
		December, 2021	3.51	4.16	3.79
		%Change (Month over Month)	-1.42	14.66	2.37
	Intraday	January, 2022	-	-	-
		December, 2021	3.41	3.41	3.41
		%Change (Month over Month)	NA		
	Daily/Anyday	January, 2022	-	-	-
		December, 2021	3.50	3.50	3.50
		%Change (Month over Month)	NA	NA	NA
	Weekly	January, 2022	-		
		December, 2021	-		

-: No transaction happened

NA: Not Applicable

Table-6D

- In January, 2022, there was transmission congestion of **0.28 MU** in GTAM (Solar) in IEX under Day Ahead Contingency Contract. Whereas, there was no transmission congestion in PXIL in GTAM (Solar).

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

5.3. 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 January, 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 January, 2022 on trade date basis and its comparison with December, 2021 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	January, 2022	52.29	0.04	6.33	1.69
		December, 2021	142.14	0.28	9.86	4.59
		%Change (Month over Month)	-63.21	-85.71	-35.80	-63.18
		January, 2021	50.70	0.30	4.69	1.64
		%Change (Year over Year)	3.14	-86.67	34.97	3.05
	Intraday	January, 2022	-	-	-	-
		December, 2021	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		January, 2021	0.38	0.38	0.38	0.38
		%Change (Year over Year)	NA	NA	NA	NA
	Daily/ Anyday	January, 2022	8.52	1.92	2.40	2.13
		December, 2021	0.15	0.15	0.15	0.15
		%Change (Month over Month)	5580.00	1180.00	1500.00	1320.00
		January, 2021	0.50	0.50	0.50	0.50
		%Change (Year over Year)	1604.00	284.00	380.00	326.00
	Weekly	January, 2022	-	-	-	-
		December, 2021	0.65	0.22	0.22	0.22
		%Change (Month over Month)	NA	NA	NA	NA
		January, 2021	16.80	16.80	16.80	16.80
		%Change (Year over Year)	NA	NA	NA	NA
PXIL	Day Ahead Contingency	January, 2022	52.92	0.22	7.59	1.71
		December, 2021	131.67	0.45	9.35	4.25
		%Change (Month over Month)	-59.81	-51.11	-18.82	-59.76
	Intraday	January, 2022	-	-	-	-
		December, 2021	1.40	1.40	1.40	1.40
		%Change (Month over Month)	NA	NA	NA	NA
	Daily/ Anyday	January, 2022	1.82	0.86	0.96	0.91
		December, 2021	0.96	0.96	0.96	0.96
		%Change	89.58	-10.42	0.00	-5.21

		(Month over Month)				
	Weekly	January, 2022	-			
		December, 2021	-			

-: 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	January, 2022	3.75	4.23	3.95
		December, 2021	3.60	4.29	4.00
		%Change (Month over Month)	4.17	-1.40	-1.25
		January, 2021	3.80	5.11	4.32
		%Change (Year over Year)	-1.32	-17.22	-8.56
	Intraday	January, 2022	-	-	-
		December, 2021	-	-	-
		%Change (Month over Month)	NA	NA	NA
		January, 2021	4.35	4.35	4.35
		%Change (Year over Year)	NA	NA	NA
	Daily/ Anyday	January, 2022	4.65	4.65	4.65
		December, 2021	4.65	4.65	4.65
		%Change (Month over Month)	0.00	0.00	0.00
		January, 2021	4.01	4.01	4.01
		%Change (Year over Year)	15.96	15.96	15.96
	Weekly	January, 2022	-	-	-
		December, 2021	4.65	4.65	4.65
		%Change (Month over Month)	NA	NA	NA
		January, 2021	4.30	4.30	4.30
		%Change (Year over Year)	NA	NA	NA
PXIL	Day Ahead Contingency	January, 2022	3.62	4.20	4.04
		December, 2021	3.61	4.31	3.83
		% Change (Month over Month)	0.28	-2.55	5.48
	Intraday	January, 2022	-	-	-
		December, 2021	7.00	7.00	7.00
		% Change (Month over Month)	NA	NA	NA
	Daily/ Anyday	January, 2022	4.25	4.28	4.27
		December, 2021	4.40	4.40	4.40
		% Change (Month over Month)	-3.41	-2.73	-2.95
	Weekly	January, 2022	-		
		December, 2021	-		

-: No transaction happened

NA: Not Applicable

Table-6F

5.4. 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 January, 2022 and its comparison with December, 2021 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	January, 2022	52.75	0.04	6.33	1.70
		December, 2021	141.83	0.28	9.86	4.58
		%Change (Month over Month)	-62.81	-85.71	-35.80	-62.88
		January, 2021	50.12	0.30	4.69	1.62
		%Change (Year over Year)	5.25	-86.68	34.97	4.94
	Intraday	January, 2022	-	-	-	-
		December, 2021	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
		January, 2021	0.38	0.38	0.38	0.38
		%Change (Year over Year)	NA	NA	NA	NA
	Daily/Anyday	January, 2022	7.02	0.12	0.30	0.29
		December, 2021	0.31	0.03	0.03	0.03
		%Change (Month over Month)	2,164.52	300.00	900.00	866.67
		January, 2021	0.36	0.07	0.07	0.07
		%Change (Year over Year)	1,850.00	71.43	328.57	314.29
	Weekly	January, 2022	-	-	-	-
		December, 2021	0.65	0.03	0.03	0.03
		%Change (Month over Month)	NA	NA	NA	NA
		January, 2021	16.80	2.40	2.40	2.40
		%Change (Year over Year)	NA	NA	NA	NA
PXIL	Day Ahead Contingency	January, 2022	57.96	0.22	7.59	1.87
		December, 2021	125.83	0.30	9.35	4.06
		%Change (Month over Month)	-53.94	-26.67	-18.82	-53.94
	Intraday	January, 2022	-	-	-	-
		December, 2021	1.40	1.40	1.40	1.40
		%Change (Month over Month)	NA	NA	NA	NA
	Daily/Anyday	January, 2022	2.78	0.10	0.10	0.10
		December, 2021	-	-	-	-
		%Change (Month over Month)	NA	NA	NA	NA
	Weekly	January, 2022	-			
		December, 2021	-			

-: 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	January, 2022	3.75	4.23	3.94
		December, 2021	3.60	4.40	4.02
		% Change (Month over Month)	4.17	-3.86	-1.99
		January, 2021	3.80	5.11	4.30
		% Change (Year over Year)	-1.32	-17.22	-8.37
		January, 2022	-	-	-
	Intraday	December, 2021	-	-	-
		% Change (Month over Month)	NA	NA	NA
		January, 2021	4.35	4.35	4.35
		% Change (Year over Year)	NA	NA	NA
		January, 2022	4.65	4.65	4.65
	Daily/Anyday	December, 2021	4.65	4.65	4.65
		% Change (Month over Month)	0.00	0.00	0.00
		January, 2021	4.01	4.01	4.01
		% Change (Year over Year)	15.96	15.96	15.96
		January, 2022	-	-	-
	Weekly	December, 2021	4.65	4.65	4.65
		% Change (Month over Month)	NA	NA	NA
		January, 2021	4.30	4.30	4.30
		% Change (Year over Year)	NA	NA	NA
		January, 2022	3.62	4.20	4.02
PXIL	Day Ahead Contingency	December, 2021	3.61	4.31	3.85
		% Change (Month over Month)	0.28	-2.55	4.42
		January, 2022	-	-	-
	Intraday	December, 2021	7.00	7.00	7.00
		% Change (Month over Month)	NA	NA	NA
		January, 2022	4.25	4.40	4.31
	Daily/Anyday	December, 2021	-	-	-
		% Change (Month over Month)	NA	NA	NA
		January, 2022	-	-	-
	Weekly	December, 2021	-	-	-
		January, 2022	-	-	-

-: No transaction happened

NA: Not Applicable

Table-6H

- In January, 2022, there was transmission congestion of 0.17 MU in GTAM (Non-Solar) in IEX under Day Ahead Contingency Contract. Whereas, there was no transmission congestion in PXIL in GTAM (Non-Solar).
- In January, 2022, there was no real time curtailment in GTAM (Non-Solar) in both IEX & PXIL.

6. GREEN DAY AHEAD MARKET (GDAM):

The transaction of electricity in Green Day Ahead Market (GDAM) has been started in IEX from 27th January, 2022 with the approval of the CERC. The total volume of electricity transacted in GDAM in the month of January, 2022 was **198.35 MU** at an average price MCP of **Rs 4.20/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 January, 2022 are given below:

i) Final Scheduled Volume in IEX:

Segment	Period	Final Scheduled Volume (MU)			
		Total	Minimum	Maximum	Average
Solar	January, 2022	56.63	0.33	3.64	1.83
	December, 2021	102.67	1.45	5.70	3.31
	% Change (Month over Month)	-44.84	-77.24	-36.14	-44.71
Non Solar	January, 2022	141.72	1.37	6.61	4.57
	December, 2021	54.53	1.12	2.17	1.76
	% Change (Month over Month)	159.89	22.32	204.61	159.66
Hydro	January, 2022	-	-	-	-
	December, 2021	-	-	-	-

-: No transaction happened

NA: Not Applicable

Table-7A**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	January, 2022	3.00	4.98	4.20	1.00	8.00
	December, 2021	4.24	5.36	4.72	3.04	13.90
	% Change (Month over Month)	-29.25	-7.09	-11.02	-67.11	-42.45

-: No transaction happened

NA: Not Applicable

Table-7B

- 6.1.** In the month of January, 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 December, 2021, there was no transmission congestion in IEX in GDAM, hence one nation one price was observed for all **31 days** during the month.
- 6.2.** There was **no** real time curtailment in IEX in Green Day Ahead Market during the month of January, 2022 and December, 2021, respectively.
- 6.3.** The **top 10 sellers** on the power exchanges in **Green Day Ahead Market (GDAM)** in the month of January, 2022 were **Karnataka, Madhya Pradesh, Andhra Pradesh, Adani Green Solar Jaisalmer, Adani Hybrid Energy Jaisalmer Three Limited (Solar), Renew Solar Energy (Jharkhand Three) Pvt. Ltd., Renew Solar Urja Private Limited,**

Telangana, Adani Wind Energy Kutchh Five Limited and Adani Hybrid Energy Jaisalmer Two Limited (Solar), which constituted **95.70 %** of the market volume.

6.4. The top 10 purchasers on the power exchanges in **Green Day Ahead Market (GDAM)** in the month of January, 2022 were **Dadra & Nagar Haveli, Odisha, Assam, West Bengal, Maharashtra, Delhi, Kerala, Karnataka, Tamil Nadu and Punjab,** which constituted **96.92 %** of the market volume.

7. BILATRAL TRANSACTIONS:

The total volume of electricity transacted through **Bilateral transactions** in the month of January, 2022 was **6,117.41 MU**. The total buy volume of electricity transacted in bilateral market through direct transactions and traders in the month of January, 2022 were **1,950.87 MU** and **4,166.54 MU** respectively. The details of Bilateral transactions of Electricity happened during January, 2022 have been shown in Table Below:

January, 2022	Direct	Traders	Total Bilateral Transaction (MU)
Total	1,863.72	3,795.00	5,658.72
Minimum	1.98	1.29	-
Maximum	1,071.15	768.04	-

Table -8A

The region-wise maximum/ minimum volume of electricity transaction happened bilaterally during January, 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	225.93	553.96	1457.98	1065.59	120.55	1638.32	59.26	385.66	0.00	151.48
Minimum	11.90	5.15	4.65	3.48	1.98	8.05	15.02	1.29	0.00	2.44
Maximum	140.50	313.63	1,071.15	768.04	94.14	501.64	24.20	160.51	0.00	94.73

Table -8B

7.1. The top 5 buyers on bilateral transaction through direct transactions in the month of January, 2022 were **Madhya Pradesh, Jharkhand, AMNSIL_WR, Maharashtra, and Haryana,** which constituted **82.96 %** of the market volume. Whereas **top 5 buyers** on bilateral transaction through traders in the month of January, 2022 were **Gujarat, Rajasthan, Himachal Pradesh, Odisha and Uttarakhand,** which constituted **61.65 %** of the market volume. [Annexure III]

7.2. The top 5 sellers on bilateral transaction through direct transactions in the month of January, 2022 were **Punjab, Chhattisgarh, Uttar Pradesh, DB Power and Adhunik Power,** which constituted **71.18 %** of the market volume. Whereas **top 5 sellers** on bilateral transaction through traders in the month of January, 2022 were **Raipur Energen, JITPL, Delhi, RKM Power and Haryana,** which constituted **51.87%** of the market volume. [Annexure III]

7.3. Deviation Volume - The volume of Deviation observed in the month of January, 2022 in import and export were **2,001.91 MU** and **2,141.39 MU** respectively. The total volume of Deviation observed in the month of January, 2022 can be taken as **2,071.65 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 January, 2022 is shown in **Figure 1**:

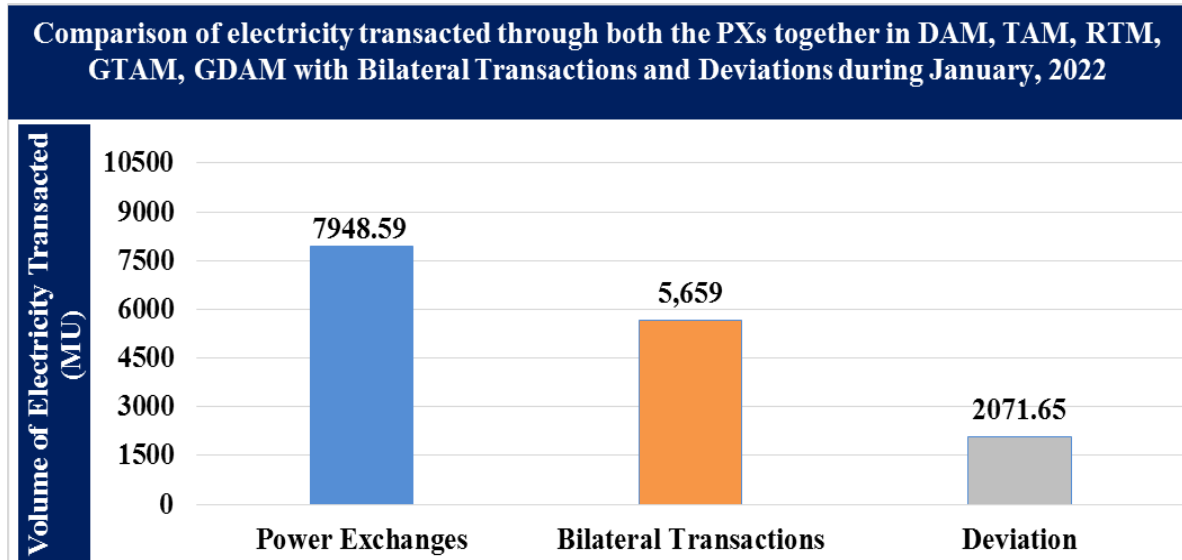


Figure -1

8. ANALYSIS OF MOVEMENT OF PRICES OBSERVED IN DAM DURING JANUARY, 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 January, 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 significant variable were the total purchase bid and 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 **0.52**, In effect, the regression reveals that the most important variable which determines daily market clearing price is the total purchase bid in the month of January, 2022.
- 8.3.** The same relationship is visible from the analysis carried out from the plot in **Figure 2**.

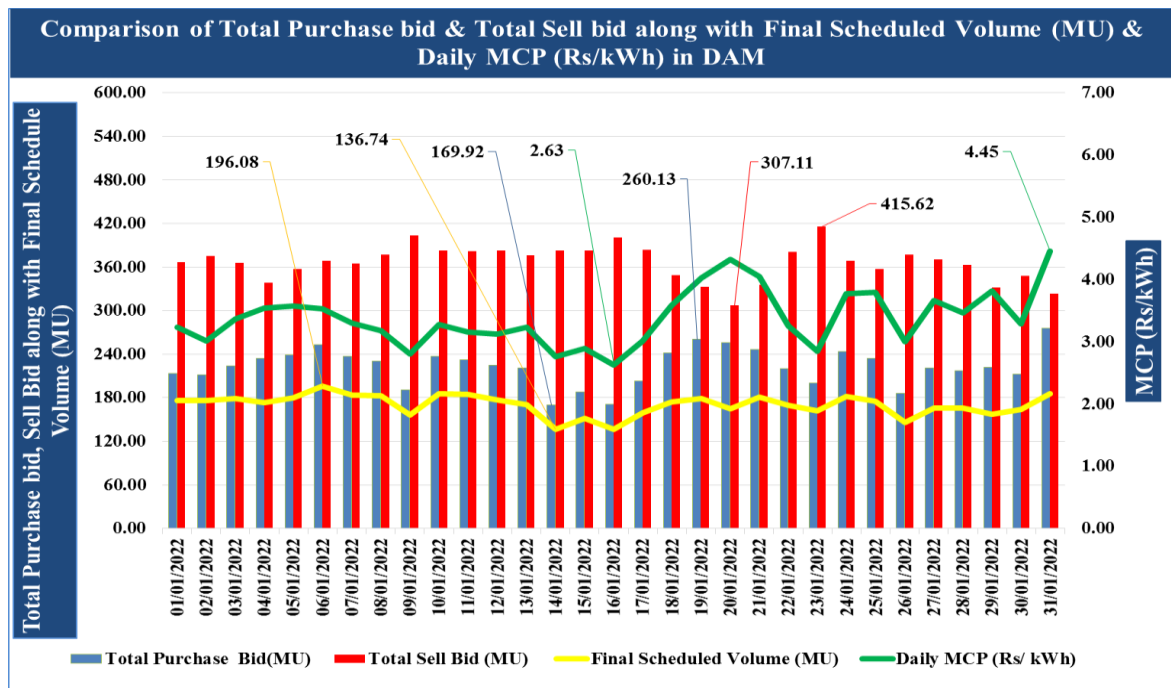


Figure -2

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 January, 2022, it is observed that on fifth Sunday (30th January, 2022), FSV showed increasing trend in comparison to fifth Saturday (29th January, 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**.

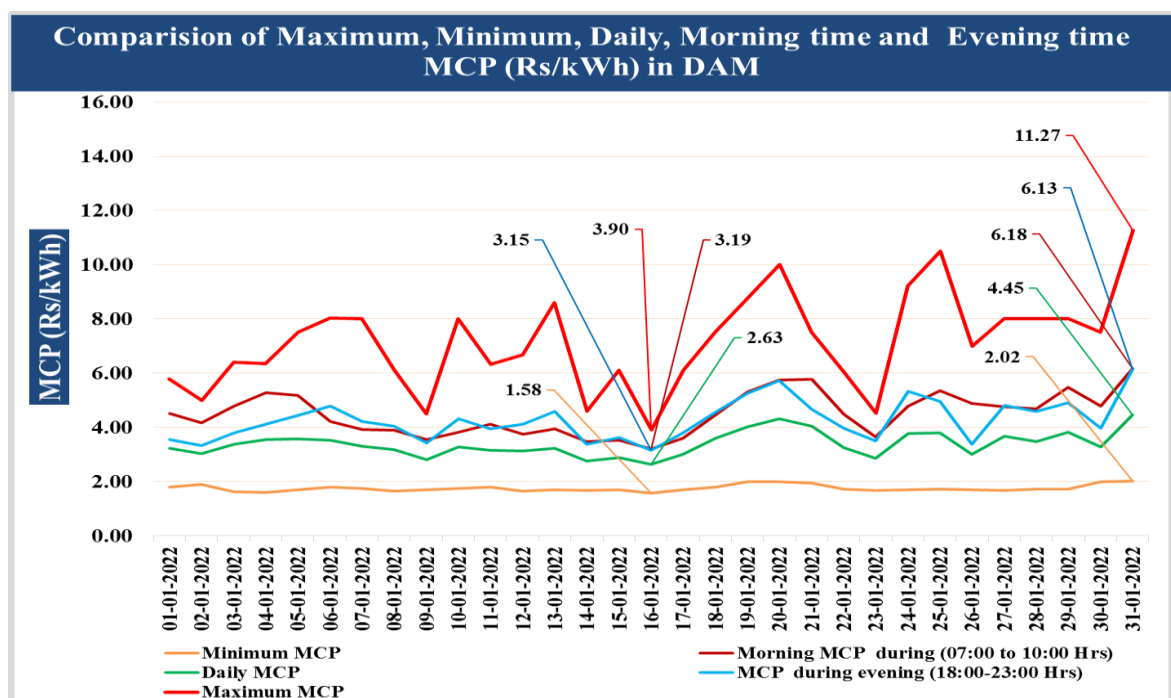


Figure -3

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

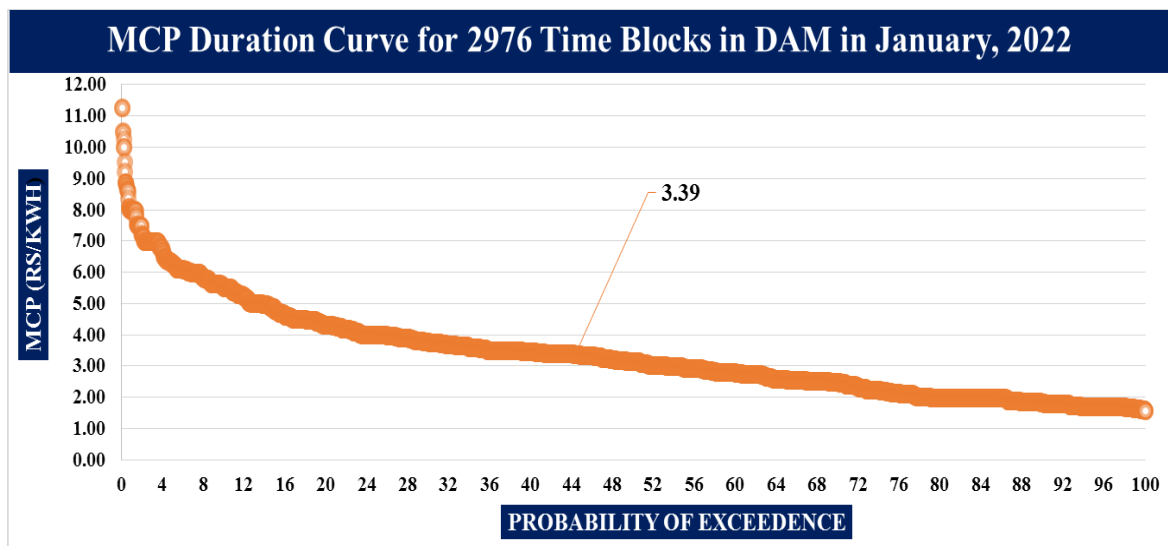


Figure-4

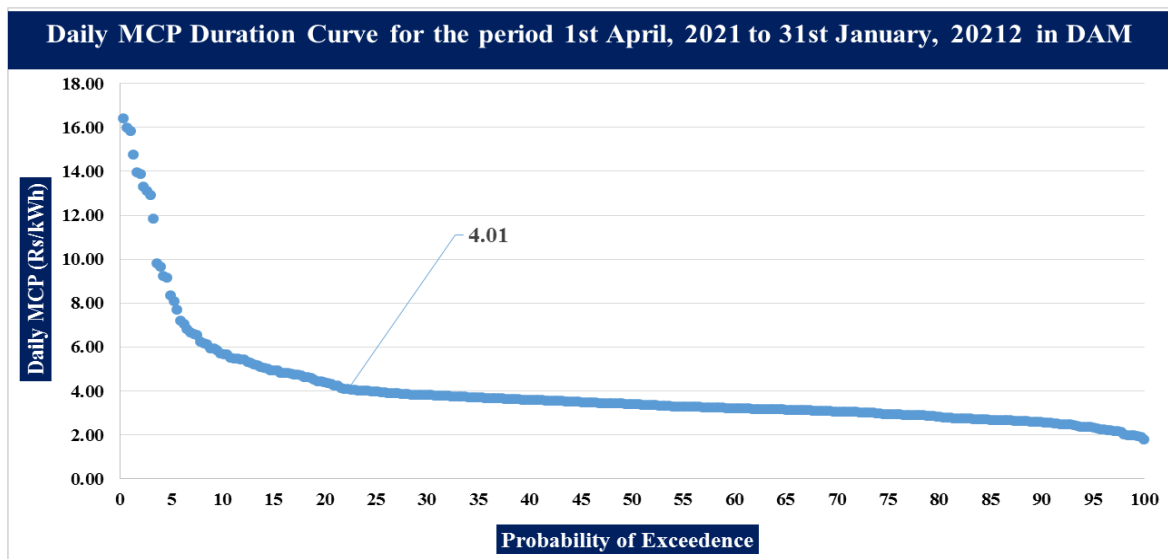


Figure-5

- 8.7. It can be seen in figure 4 above that in the MCP duration curve of January, 2022, for 44.19 % of the time MCP was above average MCP of the month (i.e. **Rs. 3.39/kWh**) and almost 55.81 % 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, 2022 to 31st January, 2022 (figure-5), that for 24.18 % of the time the daily MCP was above the average MCP for the period (i.e. **Rs. 4.01/kWh**) and for 75.82 % 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 January, 2022, the maximum FSV occurred mostly during the **time period 8-9 AM and 9-10 AM** (on 29 no. of days). Whereas, the maximum MCP occurred mostly during the **time**

period 6-7 PM (on 25 no. of days). Similarly, the minimum FSV occurred mostly during the **time period 10-11 PM** (on 20 no. of days). Whereas, the minimum MCP occurred mostly during the **time period 2-3 AM and 3-4 AM** (on 25 no. of days). [Annexure VI]

- 8.10.** The maximum demand met during the month of January, 2022 in the country occurred on **31st January, 2022 at 192.08 GW**, which is 4.74 % more than the maximum demand occurred during **December, 2021 [i.e. 183.39 GW on 24th December, 2021]** and is 1.29 % more than the maximum demand occurred during **January, 2021 i.e. [189.64 GW on 30th January, 2021]**.
- 8.11.** In the month of January, 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 January, 2022, so one nation one price was observed on all **16 days** during which transaction of electricity happened (i.e. 6th to 08th, 11th to 13th, 18th to 22nd, 25th to 28th and 31st January, 2022). While in the month of December, 2021, 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 December, 2021, so one nation one price was observed on all **19 days** during which transaction of electricity happened (i.e. 1st, 4th, 7th, 10th to 12th, 14th to 15th, 17th to 19th, 21st to 25th, 28th to 29th and 31st December, 2021). Similarly, in the month of January, 2021, there was no congestion in transmission system, so One nation One Price was observed for all 31 **days** in IEX in January, 2021. In PXIL, there was no congestion in transmission system during January, 2021, so one nation one price was observed on all 19 days during which transaction of electricity happened (i.e. 3rd to 8th, 14th, 17th and 21st to 31st, January, 2021).
- 8.12.** In the month of January, 2022, there was **no** real time curtailment in IEX and PXIL in January, 2022. Further, in the month of December, 2021 also, there was no real time curtailment both IEX and PXIL. In the month of January, 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 January, 2022 were **West Bengal, Uttar Pradesh, Bihar, Chhattisgarh, Madhya Pradesh, Rajasthan, Sebcorp Gayatri, Jindal Power Ltd. Stg.-II, Delhi and Jindal Power**, which constituted **69.81 %** 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 January, 2022 were, **Gujarat, Andhra Pradesh, Telangana, J&K, Tamil Nadu, Maharashtra, Punjab, Uttarakhand, Rajasthan and Uttar Pradesh**, which constituted **82.21 %** of the market volume. [Annexure VII]
- 8.15.** The total volume of electricity purchased by Discoms/Licensees in DAM in the month of January, 2022 was **4,988.65 MU**, which constituted **94.48 %** 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 January, 2022 was **3,942.45 MU**, which constituted **74.66%** 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 JANUARY, 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 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 **0.79**. In effect, the regression reveals that the most important variable which determines daily market clearing price is the total purchase bid in the month of January, 2022 for RTM transactions.

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:

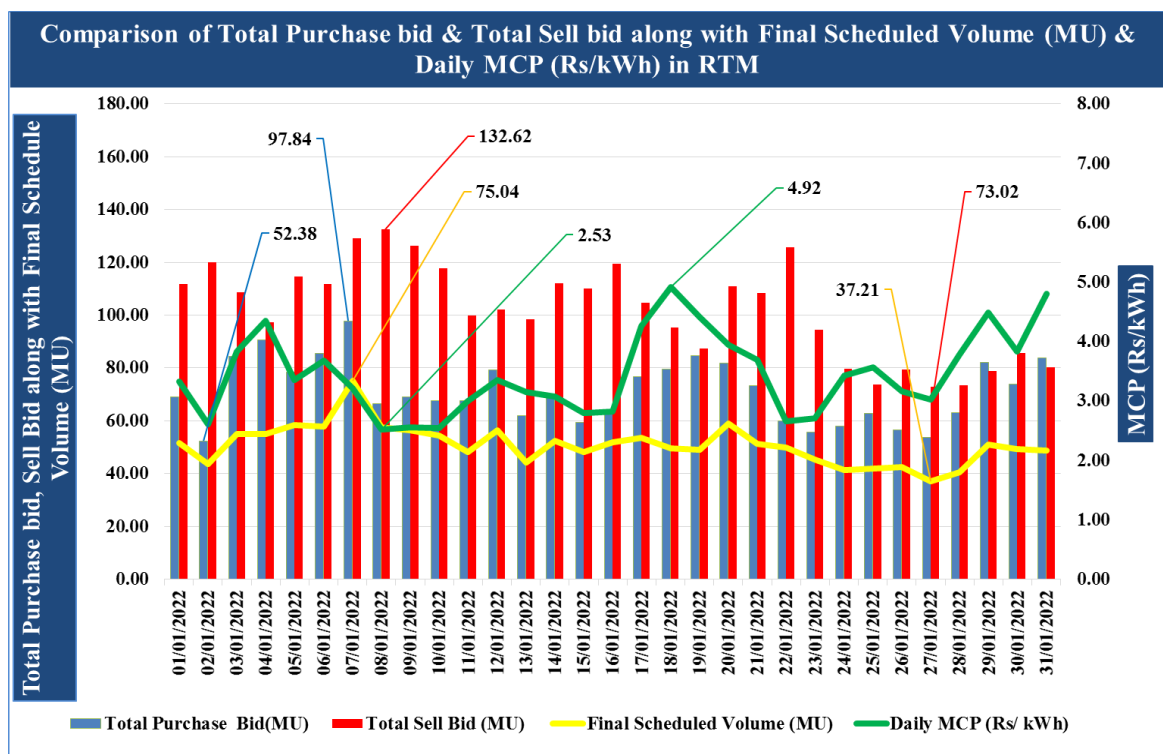


Figure-6

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

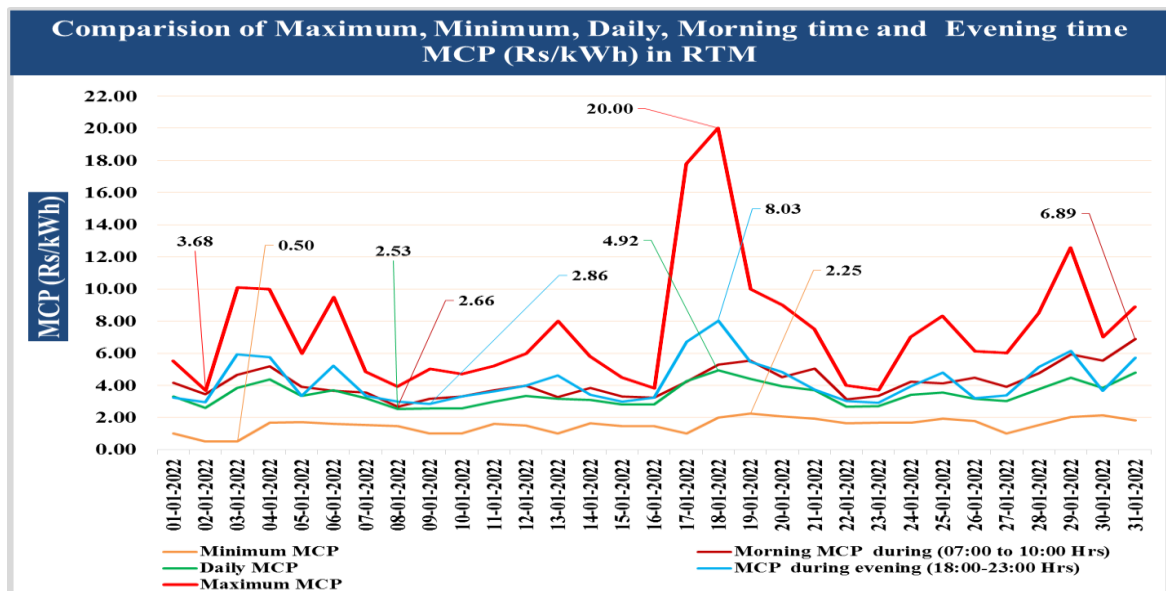


Figure-7

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

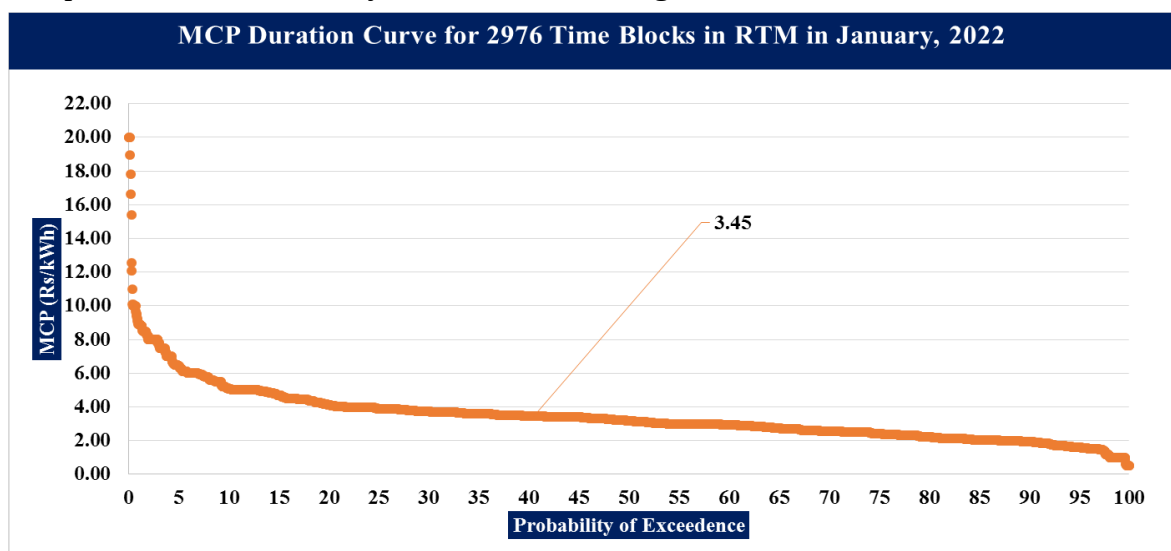


Figure-8

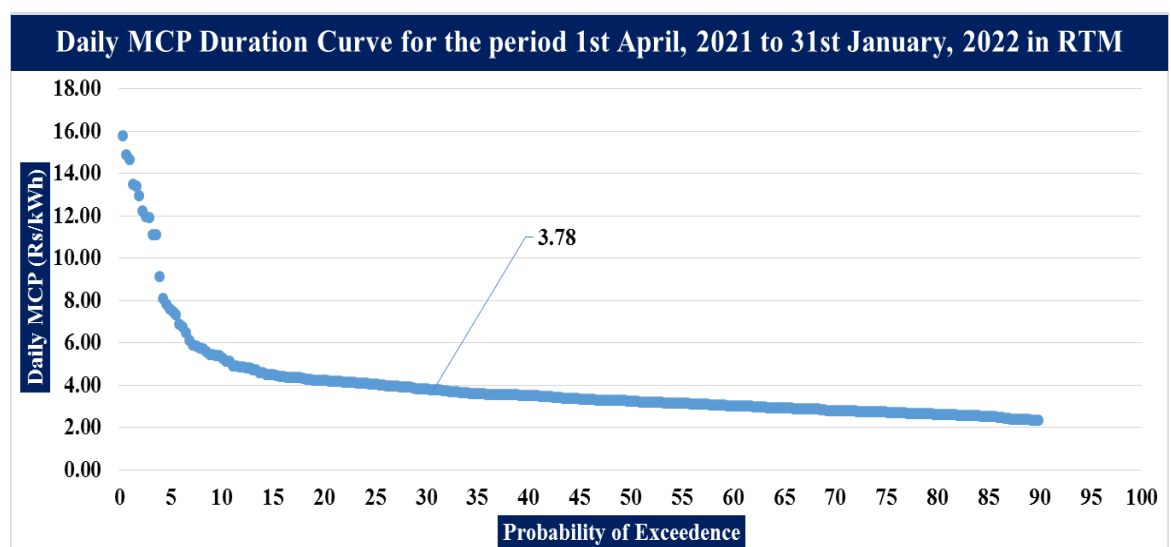


Figure-9

- 9.6. It can be seen in figure 8 above that in the MCP duration curve of January, 2022, for 40.49 % of the time the MCP was above the average MCP of the month (i.e. **Rs. 3.45/kWh**) and for 59.51 % 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, 2022 to 31st January, 2022 (figure 9) that, for 30.72 % of the time the daily MCP was above the average MCP for the period (i.e. **Rs. 3.78/kWh**) and for 69.28 % of the time the daily MCP was below the average MCP for the period.
- 9.7. In January, 2022, the maximum FSV occurred mostly during the **time period 7-8 PM & 8-9 PM** (on 11 no. of days). Whereas, the maximum MCP occurred mostly during the **time period 6-7 PM & 7-8 PM** (on 20 no. of days). Similarly, the minimum FSV occurred mostly during the **time period 12-1 AM, 1-2 AM & 10-11 PM** (on 17 no. of days). Whereas, the minimum MCP occurred mostly during the **time period 2-3 AM, 3-4 AM & 11 PM–12 AM** (on 21 no. of days). [Annexure X]
- 9.8. There was **no** real time curtailment in IEX in Real Time Market (RTM) during January, 2022 and December, 2021, whereas, no transaction of electricity happened in PXIL during January, 2022 and December, 2021. Similarly, in January, 2021, there was no real time curtailment in IEX, whereas, no transaction of electricity happened in PXIL during January, 2021 in Real Time Market (RTM).
- 9.9. In the month of January, 2022, there was congestion of **0.005 MU** in the transmission system in IEX on 11th January, 2022, hence one nation one price was observed for **30 days** in IEX during January, 2022, whereas, in PXIL, no transaction of electricity happened in January, 2022. Further, in the month of December, 2021, there was congestion of **0.06 MU** in the transmission system in IEX on 12th December, 2021, hence one nation one price was observed for **30 days** in IEX during December, 2021, whereas, in PXIL, no transaction of electricity happened in January, 2022. In the month of January, 2021, there was congestion of **2.29 MU** in transmission system in IEX in Real Time Market on account of congestion on **seven days** (i.e. 1st, 7th, 23rd to 25th, 27th and 28th January, 2021), hence, one nation one price was observed for **24 days** in IEX. Whereas, in PXIL, no transaction of electricity happened in January, 2021 in Real Time Market.
- 9.10. The **top 10 sellers** on the power exchanges in **Real Time Market (RTM)** in the month of January, 2022 were **Madhya Pradesh, Bihar, Rajasthan, Uttar Pradesh, West Bengal, Odisha, Chhattisgarh, Delhi, Sasan UMPP and Kameng HEP**, which constituted **68.30%** of the market volume. [Annexure XI]
- 9.11. The **top 10 purchasers** on the power exchanges in **Real Time Market (RTM)** in the month of January, 2022 were **J&K, Telangana, Andhra Pradesh, Maharashtra, Gujarat, Odisha, Rajasthan, Uttar Pradesh, Punjab and Tamil Nadu**, which constituted **86.57%** of the market volume. [Annexure XI]

9.12. The total volume of electricity purchased by Discoms/Licensees in RTM in the month of January, 2022 was **1,572.49 MU**, which constituted **99.83 %** 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 January, 2022 was **1,224.41 MU**, which constituted **77.73 %** 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						
	March, 2022						
Total Quarter- IV	January- March, 2022	5,279.70	0.56				
Total April, 2021 - March, 2022		53,672.59	41.66			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			
	March, 2022			
Total Quarter- IV		364.09	237.67	601.76
Total April, 2021 - March, 2022		4,262.50	3,158.85	7,421.35

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- December, 2021	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			
	March, 2022			
Total Quarter- IV	January- March, 2022	390.27	264.81	655.08
Total April, 2021 - March, 2022		4,240.04	3,170.24	7,411.28

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

(i) Top five Buyers in Bilateral transactions

Entity Name	Direct		Entity Name	Through Traders	
	(MU)	Percent		(MU)	Percent
Madhya Pradesh	1,071.15	57.47%	Gujarat	768.04	20.24%
Jharkhand	140.50	7.54%	Rajasthan	501.64	13.22%
AMNSIL_WR	135.98	7.30%	Himachal Pradesh	473.51	12.48%
Maharashtra	104.39	5.60%	Odisha	313.63	8.26%
Haryana	94.14	5.05%	Uttarakhand	282.70	7.45%
Total Volume	1,546.17	82.96%	Total Volume	2,339.53	61.65%
Total Volume in Bilateral	1,863.72		Total Volume in Bilateral	3,795.00	

(ii) Top five Sellers in Bilateral transactions

Entity Name	Direct		Entity Name	Through Traders	
	(MU)	Percent		(MU)	Percent
Punjab	517.79	30.09%	Raipur Energen	665.73	16.92%
Chhattisgarh	202.63	11.78%	JITPL	457.44	11.63%
Uttar Pradesh	201.74	11.72%	Delhi	388.94	9.89%
DB Power	162.02	9.42%	RKM Power	313.57	7.97%
Adhunik Power	140.50	8.17%	Haryana	214.62	5.46%
Total Volume	1,224.69	71.18%	Total Volume	2,040.30	51.87%
Total Volume in Bilateral	1,720.64		Total Volume in Bilateral	3,933.43	

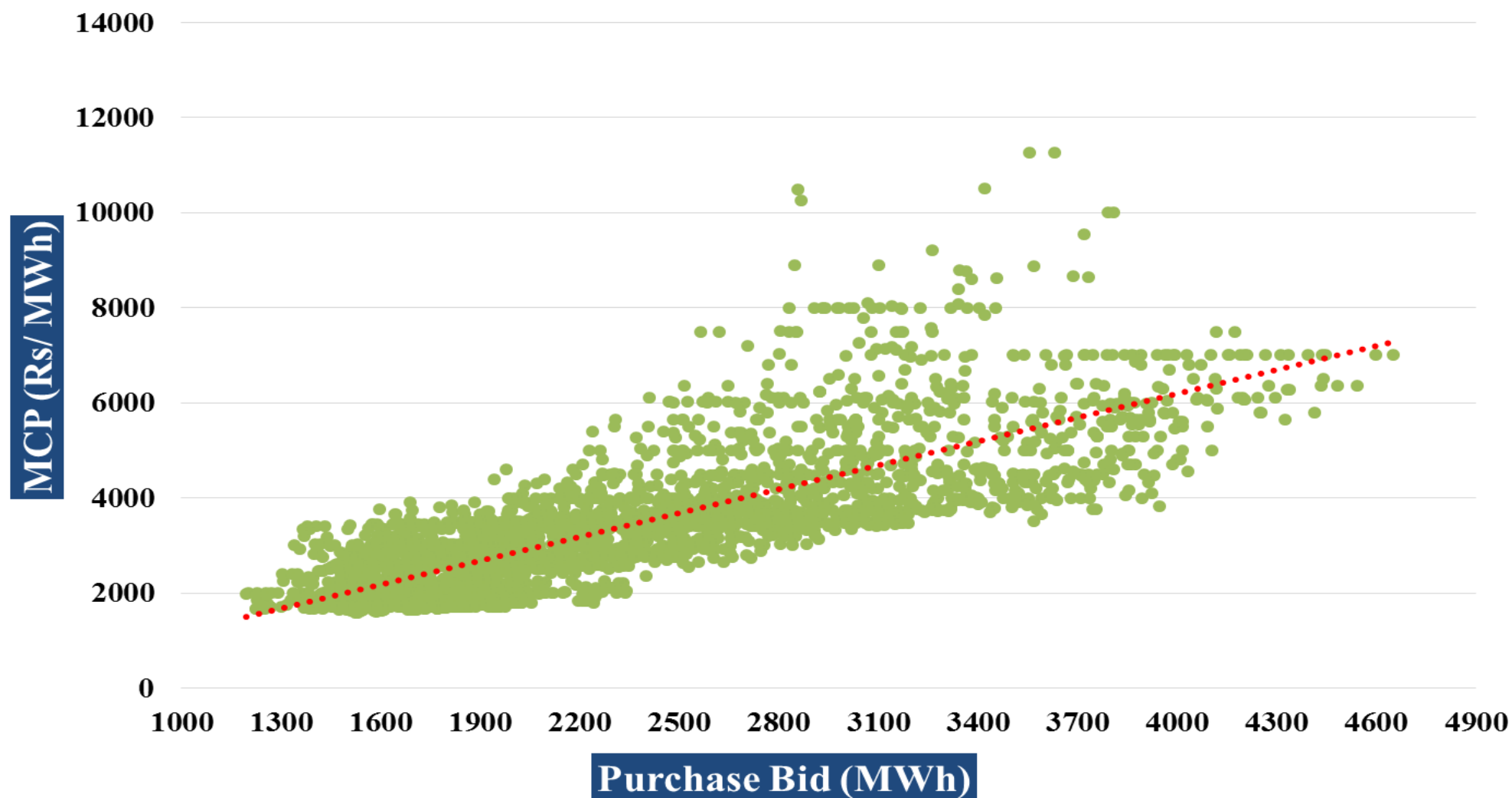
Annexure-IV**Evening, Day, Night, Morning, Maximum, Minimum, Average MCP (Rs/kWh) and Final Scheduled Volume (MU) in DAM**

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)
01-01-2022	4.52	3.40	3.54	2.06	5.77	1.80	3.23	176.47
02-01-2022	4.15	3.07	3.32	2.05	4.99	1.90	3.02	176.31
03-01-2022	4.78	3.71	3.79	1.85	6.40	1.62	3.36	178.83
04-01-2022	5.27	3.71	4.11	1.91	6.35	1.60	3.55	173.18
05-01-2022	5.17	3.62	4.44	1.88	7.52	1.70	3.58	180.14
06-01-2022	4.22	3.51	4.78	2.07	8.03	1.80	3.53	196.08
07-01-2022	3.92	3.44	4.22	2.02	8.00	1.74	3.30	184.09
08-01-2022	3.89	3.35	4.04	1.85	6.10	1.64	3.18	182.78
09-01-2022	3.54	2.74	3.41	1.92	4.50	1.70	2.80	156.73
10-01-2022	3.82	3.34	4.31	2.00	8.00	1.73	3.27	185.54
11-01-2022	4.10	3.09	3.94	2.02	6.34	1.80	3.16	185.10
12-01-2022	3.73	3.18	4.11	1.87	6.67	1.65	3.12	177.50
13-01-2022	3.93	3.05	4.57	1.88	8.60	1.70	3.24	170.77
14-01-2022	3.47	2.77	3.38	1.80	4.60	1.67	2.76	136.74
15-01-2022	3.52	2.92	3.61	1.87	6.10	1.70	2.89	151.22
16-01-2022	3.19	2.73	3.15	1.77	3.90	1.58	2.63	136.89
17-01-2022	3.59	3.19	3.80	1.83	6.10	1.69	3.01	159.32
18-01-2022	4.47	3.75	4.55	2.08	7.50	1.80	3.58	174.18
19-01-2022	5.29	4.08	5.25	2.20	8.76	1.99	4.03	179.40
20-01-2022	5.73	4.48	5.72	2.16	10.00	2.00	4.32	164.63
21-01-2022	5.76	4.48	4.67	2.10	7.50	1.95	4.05	180.85
22-01-2022	4.48	3.26	3.96	1.94	6.03	1.71	3.25	169.68
23-01-2022	3.63	2.84	3.50	1.86	4.52	1.67	2.85	162.45
24-01-2022	4.79	3.66	5.32	1.97	9.21	1.70	3.77	181.38
25-01-2022	5.35	3.68	4.96	2.01	10.49	1.71	3.79	175.19
26-01-2022	4.88	2.65	3.37	1.95	7.00	1.70	3.00	146.41
27-01-2022	4.76	3.83	4.80	1.87	8.00	1.67	3.66	165.43
28-01-2022	4.69	3.35	4.57	1.94	8.00	1.71	3.47	166.02
29-01-2022	5.47	3.70	4.90	2.05	8.00	1.71	3.81	157.33
30-01-2022	4.78	2.97	3.98	2.15	7.50	2.00	3.28	163.76
31-01-2022	6.18	4.18	6.13	2.30	11.27	2.02	4.45	185.27
Maximum	5.76	4.48	5.72	2.20	10.49	2.00	4.32	196.08
Minimum	3.19	2.65	3.15	1.77	3.90	1.58	2.63	136.74
Average	4.43	3.39	4.20	1.96	7.02	1.74	3.35	169.81

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 January, 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
01-01-2022	08:30 - 08:45	3.36	08:45 - 09:00	5.77	22:30 - 22:45	1.06	02:45 - 03:00	1.80
02-01-2022	08:45 - 09:00	3.25	08:00 - 08:15	4.99	22:15 - 22:30	1.25	02:45 - 03:00	1.90
03-01-2022	08:30 - 08:45	3.30	18:15 - 18:30	6.40	22:30 - 22:45	1.23	03:30 - 03:45	1.62
04-01-2022	08:30 - 08:45	3.20	08:30 - 08:45	6.35	22:45 - 23:00	1.19	02:45 - 03:00	1.60
05-01-2022	08:30 - 08:45	3.17	18:15 - 18:30	7.52	22:30 - 22:45	1.39	03:00 - 03:15	1.70
06-01-2022	07:45 - 08:00	2.88	18:15 - 18:30	8.03	22:45 - 23:00	1.58	04:00 - 04:15	1.80
07-01-2022	07:30 - 07:45	2.74	18:30 - 18:45	8.00	22:45 - 23:00	1.37	02:45 - 03:00	1.74
08-01-2022	08:00 - 08:15	2.99	18:30 - 18:45	6.10	22:30 - 22:45	1.28	03:15 - 03:30	1.64
09-01-2022	08:30 - 08:45	2.74	18:30 - 18:45	4.50	22:30 - 22:45	1.05	02:45 - 03:00	1.70
10-01-2022	09:15 - 09:30	3.09	18:30 - 18:45	8.00	23:00 - 23:15	1.28	02:45 - 03:00	1.73
11-01-2022	09:00 - 09:15	3.05	18:30 - 18:45	6.34	22:45 - 23:00	1.17	02:45 - 03:00	1.80
12-01-2022	09:30 - 09:45	3.01	18:30 - 18:45	6.67	02:45 - 03:00	1.18	02:45 - 03:00	1.65
13-01-2022	09:00 - 09:15	3.14	18:30 - 18:45	8.60	02:45 - 03:00	1.11	03:15 - 03:30	1.70
14-01-2022	09:00 - 09:15	2.67	18:45 - 19:00	4.60	03:15 - 03:30	0.91	03:15 - 03:30	1.67
15-01-2022	09:45 - 10:00	2.71	18:30 - 18:45	6.10	22:30 - 22:45	1.05	03:15 - 03:30	1.70
16-01-2022	09:30 - 09:45	2.65	18:45 - 19:00	3.90	22:30 - 22:45	1.07	03:30 - 03:45	1.58
17-01-2022	09:45 - 10:00	2.96	18:30 - 18:45	6.10	05:15 - 05:30	1.05	03:30 - 03:45	1.69
18-01-2022	08:30 - 08:45	2.85	18:30 - 18:45	7.50	05:15 - 05:30	1.30	03:45 - 04:00	1.80
19-01-2022	09:00 - 09:15	2.70	18:30 - 18:45	8.76	22:45 - 23:00	1.15	03:15 - 03:30	1.99
20-01-2022	08:15 - 08:30	2.76	18:30 - 18:45	10.00	22:45 - 23:00	1.09	03:15 - 03:30	2.00
21-01-2022	08:15 - 08:30	2.80	09:45 - 10:00	7.50	22:45 - 23:00	1.22	02:45 - 03:00	1.95
22-01-2022	08:00 - 08:15	2.84	09:45 - 10:00	6.03	22:30 - 22:45	1.15	03:00 - 03:15	1.71
23-01-2022	08:30 - 08:45	2.85	18:45 - 19:00	4.52	13:15 - 13:30	1.14	04:00 - 04:15	1.67
24-01-2022	08:30 - 08:45	2.98	18:45 - 19:00	9.21	05:00 - 05:15	1.37	04:00 - 04:15	1.70
25-01-2022	08:30 - 08:45	2.90	18:30 - 18:45	10.49	22:45 - 23:00	1.34	03:45 - 04:00	1.71
26-01-2022	08:00 - 08:15	2.45	08:30 - 08:45	7.00	13:00 - 13:15	1.10	03:45 - 04:00	1.70
27-01-2022	08:30 - 08:45	2.94	18:45 - 19:00	8.00	03:00 - 03:15	1.06	04:00 - 04:15	1.67
28-01-2022	09:00 - 09:15	2.85	18:30 - 18:45	8.00	22:45 - 23:00	1.07	03:45 - 04:00	1.71
29-01-2022	09:00 - 09:15	2.72	18:15 - 18:30	8.00	22:45 - 23:00	1.03	04:00 - 04:15	1.71
30-01-2022	08:15 - 08:30	2.81	18:45 - 19:00	7.50	22:30 - 22:45	1.11	04:00 - 04:15	2.00
31-01-2022	08:45 - 09:00	2.62	18:45 - 19:00	11.27	23:45 - 24:00	1.38	03:15 - 03:30	2.02

MCP: Market Clearing Price (Rs/kWh)

FSV: Final Scheduled Volume (MU)

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

S. No.	Entity Name	Sell		Entity Name	Purchase	
		(MU)	Percent (%)		(MU)	Percent (%)
1.	West Bengal	1011.22	19.15%	Gujarat	701.74	13.29%
2.	Uttar Pradesh	629.38	11.92%	Andhra Pradesh	557.76	10.56%
3.	Bihar	469.38	8.89%	Telangana	554.31	10.50%
4.	Chhattisgarh	372.68	7.06%	J&K	483.65	9.16%
5.	Madhya Pradesh	321.26	6.08%	Tamilnadu	437.32	8.28%
6.	Rajasthan	308.45	5.84%	Maharashtra	416.68	7.89%
7.	Sembcorp Gayatri	160.05	3.03%	Punjab	388.11	7.35%
8.	Jindal Power Ltd. Stg-II	140.70	2.66%	Uttarakhand	308.46	5.84%
9.	Delhi	137.61	2.61%	Rajasthan	251.53	4.76%
10.	Jindal Power	135.25	2.56%	Uttar Pradesh	241.28	4.57%
11.	Orissa	134.13	2.54%	NVVN (SNA) - NEA	157.94	2.99%
12.	Teesta -3	115.93	2.20%	Haryana	148.36	2.81%
13.	Essar Power MP Ltd	110.07	2.08%	Orissa	124.24	2.35%
14.	Karnataka	109.27	2.07%	DGPCL Bhutan	101.28	1.92%
15.	Kerala	101.09	1.91%	Delhi	96.91	1.84%
16.	RKM Power	85.55	1.62%	Assam	49.78	0.94%
17.	ACBIL	73.76	1.40%	Himachal Pradesh	49.78	0.94%
18.	DB Power	61.88	1.17%	Karnataka	46.96	0.89%
19.	Himachal Pradesh	61.83	1.17%	Madhya Pradesh	46.53	0.88%
20.	Assam	59.65	1.13%	ArcelorMittal Nippon	31.47	0.60%
21.	Jaypee Nigrie	58.98	1.12%	Kerala	22.92	0.43%
22.	MB Power	58.49	1.11%	Meghalaya	18.80	0.36%
23.	Telangana	37.98	0.72%	Dadra & Nagar Haveli	18.76	0.36%
24.	Haryana	37.35	0.71%	Daman & Diu	7.00	0.13%
25.	Talcher Stg-2	29.35	0.56%	Chandigarh	5.61	0.11%
26.	Goa WR	29.14	0.55%	West Bengal	4.08	0.08%
27.	Maruti Clean Coal Power	26.28	0.50%	Bihar	2.79	0.05%
28.	Palatana	25.70	0.49%	Goa WR	2.21	0.04%
29.	Sembcorp Energy India Ltd.	22.77	0.43%	Jharkhand	1.52	0.03%
30.	Maharashtra	22.51	0.43%	Manipur	0.78	0.01%
31.	Jharkhand	21.46	0.41%	Sikkim	0.56	0.01%
32.	Adhunik Power	19.50	0.37%	Gandhar_RLNG Fuel	0.46	0.01%
33.	GMR Kamalanga	18.93	0.36%	NEA-NR	0.36	0.01%
34.	DVC	18.55	0.35%	Goa SR	0.21	0.00%
35.	Andhra Pradesh	17.91	0.34%	Gandhar_NAPM	0.10	0.00%
36.	Ramagundam Stg-1	17.54	0.33%			
37.	Tripura	16.86	0.32%			
38.	Tashiding HEP	16.24	0.31%			
39.	AD Hydro	14.56	0.28%			
40.	NLC TPS-II	14.13	0.27%			

41.	Jorethang	13.94	0.26%			
42.	Karcham Wangtoo	13.29	0.25%			
43.	NLC TPS-II Stg-2	13.21	0.25%			
44.	JITPL	10.81	0.20%			
45.	Kameng HEP	10.29	0.19%			
46.	NTPC Kudgi	10.26	0.19%			
47.	Arunachal Pradesh	9.45	0.18%			
48.	Sainj HEP	8.20	0.16%			
49.	Jhabua Power	7.86	0.15%			
50.	Simhadri Stg-2	6.26	0.12%			
51.	NLC	6.07	0.11%			
52.	Tamilnadu	5.59	0.11%			
53.	Ramagundam Stg-3	5.39	0.10%			
54.	RGPPPL	4.98	0.09%			
55.	J&K	4.26	0.08%			
56.	Neyveli New Thermal Power	4.12	0.08%			
57.	BALCO 2	3.03	0.06%			
58.	Gujarat	3.01	0.06%			
59.	Singoli Bhagwati	2.32	0.04%			
60.	Raipur Energen	1.83	0.03%			
61.	Renew Solar Energy (Jharkhand	1.78	0.03%			
62.	NLC TPS-II Expn	1.59	0.03%			
63.	Chuzachen	1.46	0.03%			
64.	Sorang HEP, (Himachal Sorang	1.21	0.02%			
65.	Nagaland	1.09	0.02%			
66.	Dikchu	1.08	0.02%			
67.	Renew Solar Urja Private Limited	0.79	0.02%			
68.	Raigarh Energy Ltd.	0.77	0.01%			
69.	Manipur	0.63	0.01%			
70.	Lanco Budhil	0.38	0.01%			
71.	Dhariwal	0.38	0.01%			
72.	Sikkim	0.36	0.01%			
73.	Adani Green Solar Jaisalmer	0.33	0.01%			
74.	Punjab	0.30	0.01%			
75.	Adani Hybrid Energy Jaisalmer Three Limited (Solar)	0.27	0.01%			
76.	Adani Hybrid Energy Jaisalmer	0.09	0.00%			
77.	Bongaigaon	0.09	0.00%			
78.	Dadra & Nagar Haveli	0.05	0.00%			
79.	Ostro Energy Private Limited	0.04	0.00%			
80.	Adani Wind Energy Kutchh Five Limited	0.03	0.00%			
81.	Talcher	0.01	0.00%			
82.	Farakka	0.01	0.00%			
Total Volume of top 10		3,722.32	68.63%	Total Volume of top 10	4,635.67	85.46%
Total Volume in PXs		5,424.15		Total Volume in PXs	5,424.15	

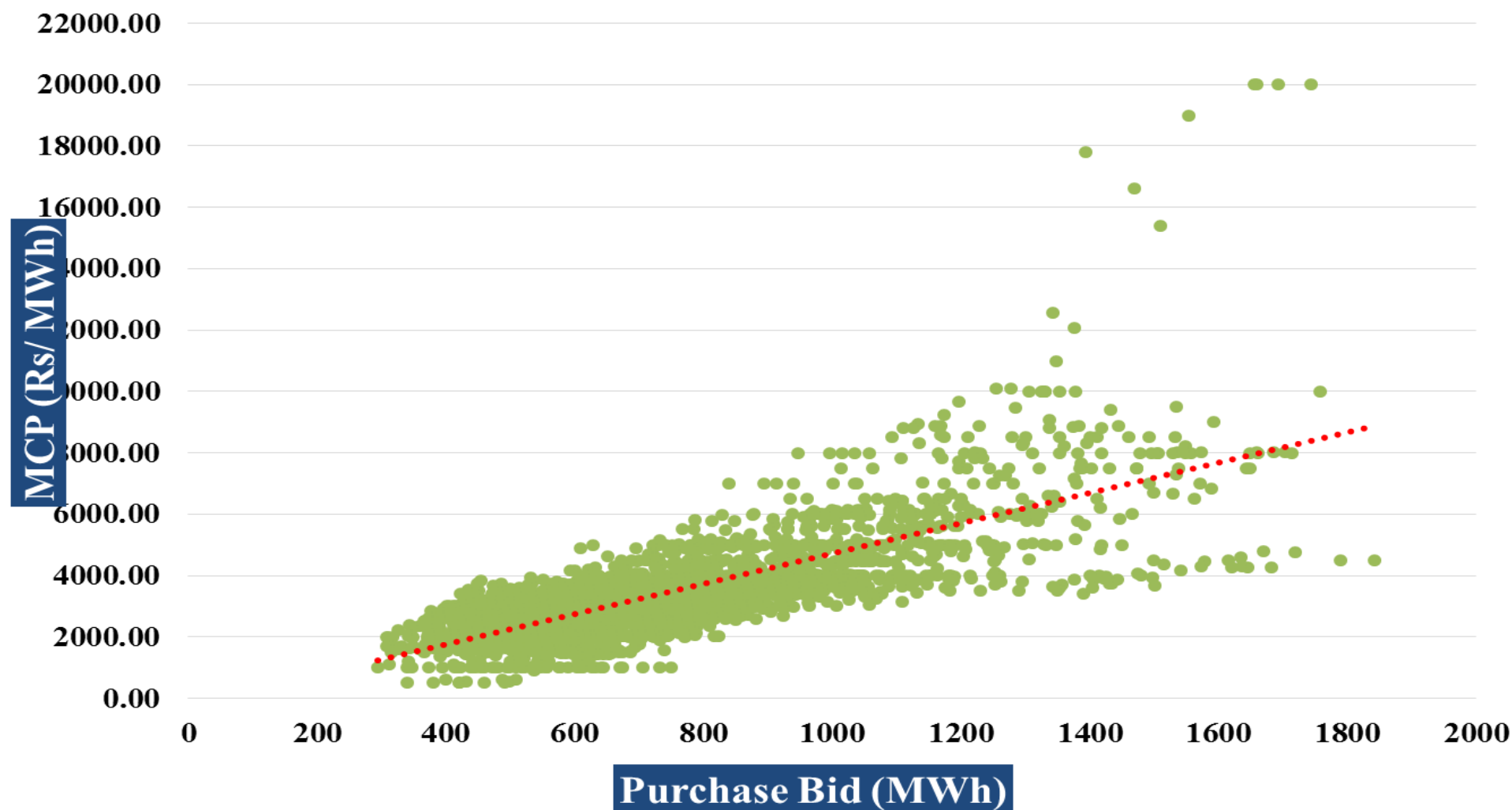
Annexure-VIII**Evening, Day, Night, Morning, Maximum, Minimum, Average MCP (Rs/kWh) and Final Scheduled Volume (MU) in RTM**

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
01-01-2022	4.15	3.97	3.25	2.27	5.51	1.00	3.32	51.54
02-01-2022	3.44	2.97	2.95	1.47	3.68	0.51	2.61	43.56
03-01-2022	4.65	4.08	5.92	1.33	10.10	0.50	3.83	54.98
04-01-2022	5.17	4.68	5.74	2.37	10.00	1.67	4.35	54.86
05-01-2022	3.93	3.94	3.36	2.41	5.98	1.72	3.35	58.31
06-01-2022	3.67	3.99	5.23	2.05	9.50	1.62	3.68	57.73
07-01-2022	3.54	4.04	3.33	2.09	4.85	1.55	3.21	75.04
08-01-2022	2.66	2.88	2.97	1.71	3.94	1.45	2.53	57.56
09-01-2022	3.17	2.94	2.86	1.57	5.04	1.00	2.56	56.33
10-01-2022	3.30	2.79	3.30	1.23	4.71	1.00	2.55	54.47
11-01-2022	3.70	3.01	3.63	2.05	5.20	1.59	3.00	48.06
12-01-2022	3.98	3.58	3.98	2.21	6.00	1.50	3.35	56.28
13-01-2022	3.26	3.12	4.63	1.87	8.00	1.00	3.16	44.07
14-01-2022	3.84	3.24	3.40	2.21	5.79	1.65	3.08	52.36
15-01-2022	3.31	3.14	3.00	1.97	4.49	1.46	2.79	48.23
16-01-2022	3.22	3.05	3.22	2.01	3.84	1.46	2.82	51.79
17-01-2022	4.23	4.56	6.71	1.88	17.80	1.00	4.26	53.53
18-01-2022	5.31	4.60	8.03	2.36	20.00	2.00	4.92	49.65
19-01-2022	5.54	4.65	5.48	2.60	10.00	2.25	4.41	49.09
20-01-2022	4.52	4.37	4.84	2.43	9.00	2.05	3.94	59.10
21-01-2022	5.05	4.22	3.72	2.37	7.50	1.94	3.69	51.19
22-01-2022	3.14	2.72	3.02	2.00	4.00	1.65	2.66	49.82
23-01-2022	3.34	2.77	2.92	2.10	3.70	1.68	2.71	45.20
24-01-2022	4.24	3.77	3.96	2.16	7.00	1.68	3.43	41.29
25-01-2022	4.12	3.45	4.78	2.33	8.32	1.94	3.57	42.01
26-01-2022	4.47	3.14	3.19	2.43	6.11	1.78	3.17	42.40
27-01-2022	3.89	3.42	3.36	1.85	6.00	1.00	3.03	37.21
28-01-2022	4.76	3.58	5.16	2.23	8.50	1.55	3.78	40.55
29-01-2022	5.94	4.11	6.15	2.63	12.57	2.02	4.49	51.01
30-01-2022	5.54	4.06	3.65	2.79	7.00	2.14	3.83	49.31
31-01-2022	6.89	5.27	5.73	2.35	8.89	1.81	4.80	48.62
Maximum	6.89	5.27	8.03	2.79	20.00	2.25	4.92	75.04
Minimum	2.66	2.72	2.86	1.23	3.68	0.50	2.53	37.21
Average	4.19	3.68	4.24	2.11	7.52	1.52	3.45	50.81

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 January, 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
01-01-2022	19:15 - 19:30	0.76	11:00 - 11:15	5.51	02:30 - 02:45	0.37	03:15 - 03:30	1.00
02-01-2022	10:30 - 10:45	0.69	10:45 - 11:00	3.68	00:15 - 00:30	0.29	02:00 - 02:15	0.51
03-01-2022	20:15 - 20:30	0.76	18:45 - 19:00	10.10	01:30 - 01:45	0.34	01:30 - 01:45	0.50
04-01-2022	20:30 - 20:45	0.83	19:00 - 19:15	10.00	18:30 - 18:45	0.33	03:00 - 03:15	1.67
05-01-2022	20:15 - 20:30	0.86	10:15 - 10:30	5.98	01:30 - 01:45	0.41	03:00 - 03:15	1.72
06-01-2022	17:00 - 17:15	0.96	18:30 - 18:45	9.50	04:30 - 04:45	0.33	03:30 - 03:45	1.62
07-01-2022	12:00 - 12:15	1.25	18:15 - 18:30	4.85	01:15 - 01:30	0.33	23:30 - 23:45	1.55
08-01-2022	07:30 - 07:45	0.82	18:00 - 18:15	3.94	22:45 - 23:00	0.30	04:30 - 04:45	1.45
09-01-2022	10:30 - 10:45	0.94	10:30 - 10:45	5.04	00:00 - 00:15	0.28	06:00 - 06:15	1.00
10-01-2022	10:45 - 11:00	0.87	18:15 - 18:30	4.71	22:15 - 22:30	0.25	02:15 - 02:30	1.00
11-01-2022	10:00 - 10:15	0.79	18:30 - 18:45	5.20	00:15 - 00:30	0.27	05:00 - 05:15	1.59
12-01-2022	08:30 - 08:45	0.93	18:30 - 18:45	6.00	23:15 - 23:30	0.30	03:30 - 03:45	1.50
13-01-2022	17:45 - 18:00	0.69	18:45 - 19:00	8.00	00:00 - 00:15	0.25	04:00 - 04:15	1.00
14-01-2022	19:45 - 20:00	0.76	19:15 - 19:30	5.79	12:45 - 13:00	0.35	23:30 - 23:45	1.65
15-01-2022	14:45 - 15:00	0.66	10:45 - 11:00	4.49	10:30 - 10:45	0.35	03:00 - 03:15	1.46
16-01-2022	16:45 - 17:00	0.86	18:15 - 18:30	3.84	22:15 - 22:30	0.33	02:30 - 02:45	1.46
17-01-2022	15:15 - 15:30	0.83	19:00 - 19:15	17.80	03:45 - 04:00	0.33	03:00 - 03:15	1.00
18-01-2022	19:45 - 20:00	0.86	18:15 - 18:30	20.00	00:15 - 00:30	0.33	02:00 - 02:15	2.00
19-01-2022	07:30 - 07:45	0.83	19:00 - 19:15	10.00	22:30 - 22:45	0.30	03:30 - 03:45	2.25
20-01-2022	19:30 - 19:45	0.91	18:15 - 18:30	9.00	00:45 - 01:00	0.37	23:45 - 24:00	2.05
21-01-2022	09:45 - 10:00	0.94	09:30 - 09:45	7.50	00:15 - 00:30	0.32	05:00 - 05:15	1.94
22-01-2022	18:15 - 18:30	0.76	18:00 - 18:15	4.00	02:15 - 02:30	0.26	03:45 - 04:00	1.65
23-01-2022	12:30 - 12:45	0.73	08:45 - 09:00	3.70	18:00 - 18:15	0.27	13:30 - 13:45	1.68
24-01-2022	09:45 - 10:00	0.62	19:15 - 19:30	7.00	23:45 - 24:00	0.25	23:45 - 24:00	1.68
25-01-2022	19:45 - 20:00	0.71	18:45 - 19:00	8.32	00:15 - 00:30	0.21	03:15 - 03:30	1.94
26-01-2022	08:30 - 08:45	0.59	08:30 - 08:45	6.11	04:15 - 04:30	0.31	23:30 - 23:45	1.78
27-01-2022	03:45 - 04:00	0.62	10:30 - 10:45	6.00	22:00 - 22:15	0.25	01:45 - 02:00	1.00
28-01-2022	20:15 - 20:30	0.60	18:30 - 18:45	8.50	05:45 - 06:00	0.25	01:30 - 01:45	1.55
29-01-2022	20:45 - 21:00	0.89	19:15 - 19:30	12.57	01:15 - 01:30	0.32	02:30 - 02:45	2.02
30-01-2022	19:00 - 19:15	0.73	08:15 - 08:30	7.00	08:15 - 08:30	0.27	01:30 - 01:45	2.14
31-01-2022	12:15 - 12:30	0.77	09:00 - 09:15	8.89	06:15 - 06:30	0.32	23:45 - 24:00	1.81

MCP: Market Clearing Price (Rs/kWh)

FSV: Final Scheduled Volume (MU)

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

S. No.	Entity Name	Sell		Entity Name	Purchase	
		(MU)	Percent (%)		(MU)	Percent (%)
1.	Madhya Pradesh	277.77	17.63%	J&K	437.12	27.75%
2.	Bihar	160.78	10.21%	Telangana	205.60	13.05%
3.	Rajasthan	114.69	7.28%	Andhra Pradesh	111.50	7.08%
4.	Uttar Pradesh	113.80	7.23%	Maharashtra	106.40	6.76%
5.	West Bengal	99.95	6.35%	Gujarat	104.43	6.63%
6.	Orissa	99.91	6.34%	Orissa	93.16	5.91%
7.	Chhattisgarh	70.04	4.45%	Rajasthan	79.84	5.07%
8.	Delhi	48.97	3.11%	Uttar Pradesh	76.84	4.88%
9.	Sasan UMPP	48.10	3.05%	Punjab	74.56	4.73%
10.	Kameng HEP	41.84	2.66%	Tamilnadu	74.19	4.71%
11.	Karnataka	40.90	2.60%	Delhi	52.95	3.36%
12.	Tripura	39.75	2.52%	Haryana	37.63	2.39%
13.	Kerala	39.73	2.52%	West Bengal	34.26	2.17%
14.	RKM Power	38.50	2.44%	Assam	28.84	1.83%
15.	Telangana	31.38	1.99%	Himachal Pradesh	10.03	0.64%
16.	Sembcorp Gayatri	21.62	1.37%	Uttarakhand	8.07	0.51%
17.	Jindal Power Ltd. Stg-	20.48	1.30%	Karnataka	7.68	0.49%
18.	Himachal Pradesh	19.09	1.21%	Manipur	7.56	0.48%
19.	Neyveli New Thermal	17.06	1.08%	Kerala	6.24	0.40%
20.	NLC TPS-II	15.73	1.00%	Bihar	5.61	0.36%
21.	NLC TPS-II Stg-2	14.72	0.93%	Madhya Pradesh	3.98	0.25%
22.	Ramagundam Stg-1	11.89	0.75%	Meghalaya	2.10	0.13%
23.	Jindal Power	11.17	0.71%	Sikkim	1.46	0.09%
24.	Manipur	11.09	0.70%	ArcelorMittal Nippon	1.33	0.08%
25.	Maharashtra	10.99	0.70%	Goa WR	0.69	0.04%
26.	J&K	10.74	0.68%	Dadra & Nagar Haveli	0.52	0.03%
27.	MB Power	10.21	0.65%	Daman & Diu	0.51	0.03%
28.	Bongaigaon	9.39	0.60%	Maruti Clean Coal	0.49	0.03%
29.	NTPC Kudgi	9.18	0.58%	Railways	0.43	0.03%
30.	Jharkhand	8.53	0.54%	Jindal Power	0.40	0.03%
31.	Assam	8.24	0.52%	Goa SR	0.23	0.01%
32.	NLC	8.07	0.51%	Jharkhand	0.20	0.01%
33.	DB Power	7.54	0.48%	Arunachal Pradesh	0.18	0.01%
34.	Jhabua Power	7.27	0.46%			
35.	Sembcorp Energy India	5.97	0.38%			
36.	NTPC Gadarwara	5.85	0.37%			
37.	Sikkim	5.41	0.34%			
38.	Khargone STPP	5.25	0.33%			
39.	GMR Warora	5.03	0.32%			
40.	Gujarat	4.28	0.27%			
41.	KBUNL(MTPS-II)	4.07	0.26%			

42.	Andhra Pradesh	3.99	0.25%			
43.	Barh Stg-2	3.62	0.23%			
44.	Ramagundam Stg-3	2.73	0.17%			
45.	NLC TPS-II Expn	2.51	0.16%			
46.	Renew Solar Urja	2.37	0.15%			
47.	GMR Kamalanga	2.25	0.14%			
48.	Raipur Energen	2.02	0.13%			
49.	JITPL	1.94	0.12%			
50.	Haryana	1.63	0.10%			
51.	Renew Solar Energy	1.57	0.10%			
52.	BALCO 2	1.56	0.10%			
53.	Palatana	1.54	0.10%			
54.	Tanda Stg-2	1.48	0.09%			
55.	Talcher Stg-2	1.48	0.09%			
56.	Sorang HEP,	1.28	0.08%			
57.	Singoli Bhagwati	1.20	0.08%			
58.	Barh STPS Stg - I	0.87	0.06%			
59.	Punjab	0.75	0.05%			
60.	DVC	0.73	0.05%			
61.	Dadra & Nagar Haveli	0.73	0.05%			
62.	ACBIL	0.63	0.04%			
63.	Tamilnadu	0.54	0.03%			
64.	Ayana Renewable	0.45	0.03%			
65.	AGBPP	0.38	0.02%			
66.	RGPPPL_Others	0.29	0.02%			
67.	RGPPPL	0.28	0.02%			
68.	Jorethang	0.27	0.02%			
69.	Ostro Energy Private	0.23	0.01%			
70.	Karcham Wangtoo	0.19	0.01%			
71.	Dhariwal	0.15	0.01%			
72.	Sainj HEP	0.09	0.01%			
73.	SKS Power	0.09	0.01%			
74.	Lanco Budhil	0.07	0.00%			
75.	Maruti Clean Coal	0.07	0.00%			
76.	AGTPP	0.06	0.00%			
77.	Ramagundam Floating	0.06	0.00%			
78.	NTPC Simhadri 25	0.04	0.00%			
79.	Tashiding HEP	0.02	0.00%			
80.	Nagaland	0.01	0.00%			
81.	AD Hydro	0.01	0.00%			
82.	Uttarakhand	0.01	0.00%			
Total Volume of top 10		952.59	62.99%	Total Volume of top 10	1,283.95	84.90%
Total Volume in PXs		1,512.39		Total Volume in PXs	1,512.39	

Annexure-XII

Cross Border Electricity Transactions in Day Ahead Market (DAM) in IEX with Nepal during the month of January, 2022

S. No	Delivery Date	Buy Volume By Nepal (MU)	Buy Volume by Bhutan (MU)
1	01-01-2022	3.51	1.93
2	02-01-2022	4.40	2.78
3	03-01-2022	4.31	2.56
4	04-01-2022	4.07	2.53
5	05-01-2022	4.54	2.79
6	06-01-2022	5.08	3.48
7	07-01-2022	4.76	3.15
8	08-01-2022	3.67	2.85
9	09-01-2022	4.26	2.93
10	10-01-2022	4.73	2.90
11	11-01-2022	4.95	2.87
12	12-01-2022	5.15	3.17
13	13-01-2022	5.21	3.04
14	14-01-2022	5.37	3.10
15	15-01-2022	4.54	3.33
16	16-01-2022	5.60	3.21
17	17-01-2022	5.59	3.59
18	18-01-2022	5.28	2.67
19	19-01-2022	5.04	3.26
20	20-01-2022	4.81	3.80
21	21-01-2022	4.97	3.52
22	22-01-2022	5.46	3.68
23	23-01-2022	6.01	3.65
24	24-01-2022	5.96	3.61
25	25-01-2022	6.06	3.89
26	26-01-2022	6.59	3.96
27	27-01-2022	5.82	3.39
28	28-01-2022	6.26	4.17
29	29-01-2022	4.73	3.71
30	30-01-2022	6.17	3.77
31	31-01-2022	5.40	3.97
Total		158.29	101.28
		259.57	

∴ No transaction happened.

Note: *Cross Border Transactions of Electricity of 259.57 MU (158.29 MU purchase by Nepal and 101.28 MU purchase by Bhutan) happened during January, 2022 in IEX, which is included in DAM Volume of January, 2022 in IEX*

Annexure-XIII

Details of Time Blocks in which Maximum & Minimum ACP occurred in PXIL during January, 2022

In PXIL, during the month of January, 2022 the maximum ACP of Rs 4.99/kWh and minimum ACP of Rs 3.99/kWh were observed on many days during several time blocks. The details of time blocks are shown below:

ACP	Date	Time Blocks	Daily MCP (Rs/kWh)
Maximum ACP (Rs 4.99/kWh)	08.01.2022	17:45-18:00 Hrs	4.13
	18.01.2022	17:30-17:45 to 17:45-18:00	4.49
	21.01.2022	07:30-07:45 to 08:30-08:45, 17:00-17:15 to 17:45-18:00 Hrs	4.89
	22.01.2022	07:15-07:30 to 07:45-08:00 Hrs	4.49
	25.01.2022	07:30-07:45 to 07:45-08:00 Hrs	4.49
	26.01.2022	07:30-07:45 to 07:45-08:00 Hrs	4.99
	27.01.2022	07:00-07:15 to 07:45-08:00 Hrs	4.99
	28.01.2022	07:30-07:45 to 07:45-08:00 Hrs	4.66
Minimum ACP (Rs 3.99/kWh)	31.01.2022	06:15-06:30 to 07:45-08:00 Hrs	4.99
	06.01.2022	06:45-07:00 to 07:45-08:00 Hrs	3.99
	07.01.2022	06:30-06:45 to 07:45-08:00 Hrs	3.99
	08.01.2022	06:30-06:45 to 07:45-08:00 Hrs	4.13
	11.01.2022	06:45-07:00 to 11:15-11:30 Hrs	3.99
	12.01.2022	06:45-07:00 to 11:15-11:30 & 20:00-20:15 Hrs	3.99
	13.01.2022	20:00-20:15 Hrs	3.99
	18.01.2022	07:00-07:15 to 07:15-07:30 Hrs	4.49
	19.01.2022	06:45-07:00 to 07:45-08:30 & 20:00-20:15 to 20:15-20:15-20:30 Hrs	3.99
	20.01.2022	06:45-07:00 to 07:45-08:30 & 20:00-20:15 to 20:15-20:15-20:30 Hrs	3.99
	21.01.2022	20:00-20:15 Hrs	4.89
	22.01.2022	20:00-20:15 Hrs & 20:30-20:45 Hrs	4.49
	25.01.2022	20:00-20:15 Hrs & 20:15-20:30 Hrs	4.49
	28.01.2022	20:00-20:15 Hrs	4.66

Appendix-I**Analysis for change in trend of Final Scheduled Volume in DAM on 05th Sunday of January, 2022 (i.e. 30th January, 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 January, 2022, it is observed that on fifth Sunday (30th January, 2022), FSV showed increasing trend in comparison to fifth Saturday (29th January, 2022). On analysis, it has been found as under:

- (i) On fifth Sunday (30th January, 2022), although there was decrease in purchase on power exchange by some of the States in comparison to fifth Saturday (29th January, 2022) by **18.91 MU** [i.e. Haryana (9.95 MU), Punjab (3.50 MU), Uttarakhand (2.82 MU), Uttar Pradesh (0.71 MU), Odisha (0.46 MU), Kerala (0.36 MU) and Daman & Diu (0.32 MU), etc.], there was also increase in purchase on power exchange by some of the States by **25.33 MU** [i.e. Gujarat (15.18 MU), Maharashtra (1.56 MU), Andhra Pradesh (1.51 MU), NVVN (SNA)-NEA (1.41 MU), Telangana (1.39 MU), Tamil Nadu (1.33 MU) and Rajasthan (1.08 MU), etc.]. This resulted in an overall increase in FSV by **6.42 MU** on Sunday (30th January, 2022) as compared to Saturday (29th January, 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.