



अक्टूबर, 2020 मासिक मार्केट मॉनिटरिंग रिपोर्ट

Monthly Market Monitoring Report

October, 2020



भारत सरकार/ Government of India

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केन्द्रीय विद्युत प्राधिकरण/ Central Electricity Authority

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TABLE OF CONTENTS

S.N.	Title	Page
1.	Day Ahead Market (DAM)	3
2.	Summary of the market in the power exchanges	3
3.	Term Ahead Market (TAM)	6
4.	Real Time Market (RTM)	7
5.	Green Term Ahead Market (GTAM)	8
6.	Analysis of movement of prices observed in DAM Transactions in October, 2020	9
7.	Analysis of Movement of prices observed in RTM Transactions in October, 2020	11

TABLES

1.	Table: 1A Daily MCP of IEX and PXIL in DAM for October, 2020 vs September, 2020	4
2.	Table: 1B Daily MCP of IEX and PXIL in DAM for October, 2020 vs October, 2019	4
3.	Table: 2A ACP of IEX and PXIL in DAM for October, 2020 vs September, 2020	5
4.	Table: 2B ACP of IEX and PXIL in DAM for October, 2020 vs October, 2019	5
5.	Table: 3A FSV of IEX and PXIL in DAM for October, 2020 vs September, 2020	5
6.	Table: 3B FSV of IEX and PXIL in DAM for October, 2020 vs October, 2019	5
7.	Table: 4A: FSV of IEX and PXIL in TAM for October, 2020 vs September, 2020	6
8.	Table: 4B FSV of IEX and PXIL in TAM for October, 2020 vs October, 2019	7
9.	Table: 5A: FSV of IEX and PXIL in RTM for October, 2020 vs September, 2020	7
10.	Table: 5B Daily MCP of IEX and PXIL in RTM for October, 2020 vs September, 2020	7
11.	Table: 5C ACP of IEX and PXIL in RTM for October, 2020 vs September, 2020	7
12.	Table: 6A FSV of IEX in GTAM for October, 2020 vs September, 2020	8
13.	Table: 6B Daily MCP of IEX in GTAM for October, 2020 vs September, 2020	8

FIGURES

1.	Figure: 1 Comparison of Total Purchase, Sell bids along with FSV and Daily MCP in DAM	9
2.	Figure: 2 Comparison of Maximum, Minimum, Daily, Non Peak Time, Peak Time MCP (Rs/kWh) in DAM	10
3.	Figure: 3 Comparison of Total Purchase, Sell bids along with FSV and Daily MCP in RTM	12
4.	Figure: 4 Comparison of Maximum, Minimum, Daily, Non Peak Time, Peak Time MCP (Rs/kWh) in RTM	12

ANNEXURES

1. Annexure I	FSV and Average MCP in DAM for the months April, 2020 to October, 2020	14
2. Annexure II	FSV in TAM for the months April, 2020 to October, 2020	15
3. Annexure-III	All MCPs vis: Peak Time MCP, Non-Peak MCP, Maximum MCP, Minimum MCP, Average MCP and Final Schedule Volume (MU) in DAM in October, 2020	16
4. Annexure-IV	Comparison of MCP w.r.t. Purchase Bid for 2,976 Time Blocks during the month of October, 2020 in DAM	17
5. Annexure-V	Max. FSV, Min FSV, Max MCP and Min MCP w.r.t. all Time blocks in DAM in October, 2020	18
6. Annexure-VI	Top Ten Entity (Sellers and Purchaser) in October, 2020 in DAM	19
7. Annexure-VII	All MCPs vis: Peak Time MCP, Non-Peak MCP, Maximum MCP, Minimum MCP, Average MCP and Final Schedule Volume (MU) in RTM in October, 2020	20
8. Annexure-VIII	Comparison of MCP w.r.t. Purchase Bid for 2,976 Time Blocks during the month of October, 2020 in RTM	21
9. Annexure-IX	Max. FSV, Min FSV, Max MCP and Min MCP w.r.t. all Time blocks in October, 2020 in RTM	22
10. Annexure-X	Top Ten Entity (Sellers and Purchaser) in October, 2020 in RTM	23

APPENDIX

1. Appendix-I	Analysis for change in trend of Final Scheduled Volume and Daily MCP in DAM on 2 nd Sunday and on 2 nd Monday during the month of October, 2020	24
2. Appendix-II	Definitions/ Terminologies used in the Report	25

REPORT FOR MONTH: OCTOBER, 2020

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 October, 2020 is **5,550.10 MU**. The total energy supplied in the country during the month of October, 2020 is **109,530 MU (Provisional)**. Thus, the volume of electricity transacted on the power exchanges in DAM was **5.07 %** of the total energy supplied in the country. The total volume of electricity transacted in DAM during September, 2020 was **4,841.19 MU** which was **4.31 %** of the total energy supplied [**112,241 MU**] in the country during September, 2020. Similarly, the total volume of electricity transacted in DAM during October, 2019 was **3,401.30 MU** which was **3.48 %** of the total energy supplied [**97,847 MU**] in the country during October, 2019.
- 1.2. The volume of electricity transacted on IEX and PXIL during October, 2020 are **5,500.53 MU** and **49.57 MU**, respectively, which means that the total volume transacted on IEX is **99.11 %** of the total volume on power exchanges. The volume of electricity transacted on IEX and PXIL during September, 2020 are **4,780.99 MU** and **60.20 MU**, respectively, which means that the total volume transacted on IEX is **98.76 %** of the total volume on power exchanges. Also, the total volume of electricity transacted during October, 2019 on IEX and PXIL was **3,391.49 MU** and **9.81 MU**, respectively, which means that the total volume transacted on IEX was **99.71 %** of the total volume on the power exchanges.
- 1.3. The Average Market Clearing Price (MCP) on IEX during the month of October, 2020 is **Rs 2.74/kWh**, which shows an increase of **1.86 %** and **1.11 %** when compared with average MCP's for the month of September, 2020 and October, 2019, which were **Rs 2.69/kWh** and **Rs 2.71/kWh**, respectively. On PXIL, the average MCP during the month of October, 2020 is **Rs 2.80/kWh**, which shows an increase of **3.70%** and **6.87 %**, when compared with average MCP's for the month of September, 2020 and October, 2019, which were **Rs 2.70/kWh** and **Rs 2.62/kWh**, respectively.

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

- 2.1. A comparison of the Minimum, Maximum and Average of Daily MCP during the month of October, 2020 with that of September, 2020 and October, 2019 is given in Table- 1A & 1B:

(a) October, 2020 vis- a -vis September, 2020

Daily MCP (Rs/kWh)	IEX			PXIL		
	October, 2020	September, 2020	% Change	October, 2020	September, 2020	% Change
Minimum	2.40	2.46	-2.44	2.52	2.43	3.70
Maximum	3.12	3.15	-0.95	3.34	3.09	8.09
Average	2.74	2.69	1.86	2.80	2.70	3.70

Table: 1A**(b) October, 2020 vis- a -vis October, 2019**

Daily MCP (Rs/kWh)	IEX			PXIL		
	October, 2020	October, 2019	% Change	October, 2020	October, 2019	% Change
Minimum	2.40	1.49	61.07	2.52	2.26	11.50
Maximum	3.12	3.24	-3.70	3.34	2.95	13.22
Average	2.74	2.71	1.11	2.80	2.62	6.87

Table: 1B

- 2.2. The maximum Area Clearing Price (ACP) of **Rs 6.00/kWh** in IEX was observed in all 13 regions during the time block **18:30-18:45 Hrs** on 22nd October, 2020. As there was no congestion in transmission system, the MCP for this time-block was also **Rs 6.00/kWh**. However, the Daily MCP in IEX on pan India basis on 22nd October, 2020 was **Rs 2.84 /kWh**. Whereas, in PXIL, the maximum ACP of **Rs 5.47/kWh** was observed in all 13 regions during the time period from **18:30-19:00 Hrs** on 18th October, 2020 i.e two consecutive time blocks starting 18:30-18:45 Hrs. As there was no congestion in transmission system, the MCP for above time blocks was also **Rs 5.47/kWh**. However, the Daily MCP in PXIL on 18th October, 2020 was **Rs 3.34/kWh**.
- 2.3. The minimum ACP of **Rs 1.60/kWh** in IEX was observed in all 13 regions during the time block **21:45-22:00 Hrs** on 23rd October, 2020. As there was no congestion in transmission system, the MCP for this time-block was also **Rs 1.60/kWh**. However, the Daily MCP in IEX on pan India basis on 23rd October, 2020 was **Rs 2.69/kWh**. Whereas, in PXIL, the minimum ACP of **Rs 2.00/kWh** was observed in all 13 regions on 2nd October, 2020 (for time periods **02:30-03:30 Hrs & 09:30-10:00 Hrs**), on 4th October, 2020 (for time periods **15:00-15:30 Hrs & 17:30-18:15 Hrs**) and again on 5th October, 2020 (for time periods **09:30-10:00 Hrs**) during October, 2020. As no congestion was there in transmission system, the MCP for the above time blocks was also **Rs 2.00/kWh**. However, the Daily MCP in PXIL on 2nd, 4th & 5th October, 2020 were **Rs 2.81/kWh, 2.59/kWh and 2.61/kWh, respectively**.

- 2.4. A comparison of the Minimum and Maximum Area Clearing Price (ACP) during the months of October, 2020 with that of September, 2020 and October, 2019 is given in Table- 2A & 2B:

(a) October, 2020 vis- a -vis September, 2020

ACP (Rs/kWh)	IEX			PXIL		
	October, 2020	Septemb er, 2020	% Change	October, 2020	Septem ber, 2020	% Change
Minimum	1.60	1.77	-9.60	2.00	1.04	92.31
Maximum	6.00	5.44	10.29	5.47	6.00	-8.83

Table: 2A

(b) October, 2020 vis- a- vis October, 2019

ACP (Rs/kWh)	IEX			PXIL		
	October, 2020	October, 2019	% Change	October, 2020	October, 2019	% Change
Minimum	1.60	0.88	81.82	2.00	2.26	-11.50
Maximum	6.00	8.03	-25.28	5.47	2.95	85.42

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 October, 2020 with that of September, 2020 and October, 2019 is given in Table- 3A & 3B:

(a) October, 2020 vis- a- vis September, 2020

Final Scheduled Volume (MU)	IEX			PXIL		
	October, 2020	September, 2020	% Change	October, 2020	September, 2020	% Change
Minimum	123.04	125.62	-2.05	0.58	0.84	-30.95
Maximum	208.48	182.60	14.17	2.69	3.94	-31.73
Average	177.44	159.37	11.34	1.60	2.01	-20.40

Table: 3A

(b) October, 2020 vis- a- vis October, 2019

Final Scheduled Volume (MU)	IEX			PXIL		
	October, 2020	October, 2019	% Change	October, 2020	October, 2019	% Change
Minimum	123.04	62.75	96.08	0.58	0.06	866.67
Maximum	208.48	141.48	47.36	2.69	4.80	-43.96
Average	177.44	109.40	62.19	1.60	0.45	255.56

Table: 3B

- 2.6. The total volume of electricity transacted in DAM on both the power exchanges during the period **April, 2020 to October, 2020** is **32,853.84 MU**. The same was **28,383.43 MU** during the period April, 2019 to October, 2019, which shows an **increase of 15.75 %**.

3. TERM AHEAD MARKET (TAM)

- 3.1. The total volume of electricity transacted on both the power exchanges in Term Ahead Market in October, 2020 was **1067.86 MU**, out of which, **276.80 MU** (25.92 %) was transacted on IEX and **791.06 MU** (74.08%) was transacted on PXIL.
- 3.2. The total volume of electricity transacted on both the power exchanges in Term Ahead Market in September, 2020 was **570.74 MU**, out of which, **98.30 MU** (17.22 %) was transacted on IEX and **472.44 MU** (82.78%) was transacted on PXIL.
- 3.3. Similarly, total volume of electricity transacted during October, 2019 in Term Ahead Market on both the power exchanges was **927.96 MU**, out of which, **480.74 MU** (51.81 %) was transacted on IEX and **447.22 MU** (48.19 %) was transacted on PXIL.
- 3.4. With respect to the total energy supplied during the month of October, 2020 in the country, the volume of electricity traded on the power exchanges in TAM represents **0.97 %** of the total energy supplied. The same was **0.51 %** in September, 2020 and **0.95 %** in October, 2019.
- 3.5. The total volume of electricity transacted in TAM on both the power exchanges cumulatively during the period April, 2020 to October, 2020 is **3,607.81 MU**, which shows a decrease of 33.12 % as compared to **5,394.42 MU** during the period April, 2019 to October, 2019.
- 3.6. In Term Ahead Market (TAM), there was real time curtailment of **0.198 MU** in IEX in the month of October, 2020. There was real time curtailment of **1.285 MU** in IEX in the month of September, 2020.
- 3.7. **The comparison of total volume of electricity transacted on both the power exchanges in Term Ahead Market (TAM) during October, 2020 with September, 2020 and October, 2019 is given in Table - 4A & 4B:**

(a) October, 2020 vis- a- vis September, 2020

Contract Type	IEX			PXIL		
	October, 2020	September, 2020	% Change	October, 2020	September, 2020	% Change
Intra Day (MU)	0.89	11.33	-92.14	20.60	26.36	-21.85
Day Ahead Contingency (MU)	16.71	42.09	-60.30	-	-	NA
Daily/ Any Day (MU)	91.20	11.28	708.51	770.46	446.08	72.72
Weekly (MU)	168.00	33.60	400.00	-	-	NA

- : No transaction happened

NA: Not Applicable

Table: 4A

(a) October, 2020 vis- a- vis October, 2019

Contract Type	IEX			PXIL		
	October, 2020	October, 2019	% Change	October, 2020	October, 2019	% Change
Intra Day (MU)	0.89	47.79	-98.14	20.60	46.02	-55.24
Day Ahead Contingency (MU)	16.71	36.19	-53.83	-	-	NA
Daily/ Any Day (MU)	91.20	237.16	-61.54	770.46	199.09	286.99
Weekly (MU)	168.00	159.60	5.26	-	202.11	NA

- : No transaction happened

NA: Not Applicable

Table: 4B**4. 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 Final Scheduled Volume (FSV), Daily Market Clearing Prices (MCP), Area Clearing Prices (ACP), Real Time Curtailment and details of Transmission Congestion in Real Time Market during the month of October, 2020 as compared with September, 2020 are as given in table 5A, 5B & 5C:

(i) Final Scheduled Volume:

Final Scheduled Volume (MU)	IEX			PXIL		
	October, 2020	September, 2020	% Change	October, 2020	September, 2020	% Change
Total	814.48	704.04	15.69	-	-	NA
Minimum	16.71	12.57	32.94	-	-	NA
Maximum	44.54	41.76	6.66	-	-	NA
Average	26.27	23.47	11.93	-	-	NA

- : No transaction happened

NA: Not Applicable

Table-5A**(ii) Daily Market Clearing Price (MCP):**

Daily MCP (Rs/kWh)	IEX			PXIL		
	October, 2020	September, 2020	% Change	October, 2020	September, 2020	% Change
Minimum	1.96	1.80	8.89	NA	NA	NA
Maximum	3.39	3.38	0.30	NA	NA	NA
Average	2.69	2.52	6.75	NA	NA	NA

NA: Not Applicable

Table-5B**(iii) Area Clearing Price (ACP):**

ACP (Rs/kWh)	IEX			PXIL		
	October, 2020	September, 2020	% Change	October, 2020	September, 2020	% Change
Minimum	0.60	0.10	500.00	NA	NA	NA
Maximum	11.56	6.00	92.67	NA	NA	NA

: No transaction happened

NA: Not Applicable

Table -5C

5. GREEN TERM AHEAD MARKET (GTAM):

CERC vide its order dated 17th September, 2020 accorded its approval for introduction of Green Term Ahead Market (GTAM) contracts on Indian Energy Exchange (IEX) and the transaction of electricity in Green Term Ahead Market has started in IEX w.e.f. 21st August, 2020 onwards. The total volume of electricity transacted in Solar Energy Segment in GTAM in Day Ahead Contingency contract during October, 2020 was **208.35 MU** with an Average MCP of **Rs 3.50 /kWh** and in intraday contract, the same was **5.09 MU** with an Average MCP of **Rs 3.58 /kWh**. In Non- Solar Energy Segment in GTAM, no transaction of electricity happened in October, 2020. The Final Scheduled Volume and Price of electricity transacted in GTAM in IEX during September, 2020 and October, 2020 has been shown in Table 6A & 6B below.

(i) Final Scheduled Volume:

Solar Energy Contract	Period	Final Scheduled Volume MU)			
		Total	Minimum	Maximum	Average
Day Ahead Contingency	October, 2020	208.35	0.87	12.86	6.72
	September, 2020	82.05	0.24	10.78	2.74
	% Change	153.93	262.50	19.29	145.26
Intraday	October, 2020	5.09	0.02	1.58	0.46
	September, 2020	0.80	0.20	0.40	0.27
	% Change	536.25	-90.00	295.00	70.37

Table-6A**(ii) Daily Market Clearing Price (MCP):**

Solar Energy Contract	Period	Prices (Rs/kWh)		
		Minimum	Maximum	Average
Day Ahead Contingency	October , 2020	3.35	3.68	3.50
	September , 2020	3.35	3.80	3.64
	% Change	0.00	-3.16	-3.85
Intraday	October , 2020	3.30	4.00	3.58
	September , 2020	3.64	3.64	3.64
	% Change	-9.34	9.89	-1.65

Table-6B

6. ANALYSIS OF MOVEMENT OF PRICES OBSERVED IN DAM DURING OCTOBER, 2020

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 October, 2020 month. The observations made are as under:

- 6.1. 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.
- 6.2. 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 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 0.29. 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 October, 2020.
- 6.3. The same relationship is visible from the analysis carried out from the plot in **Figure 1**.

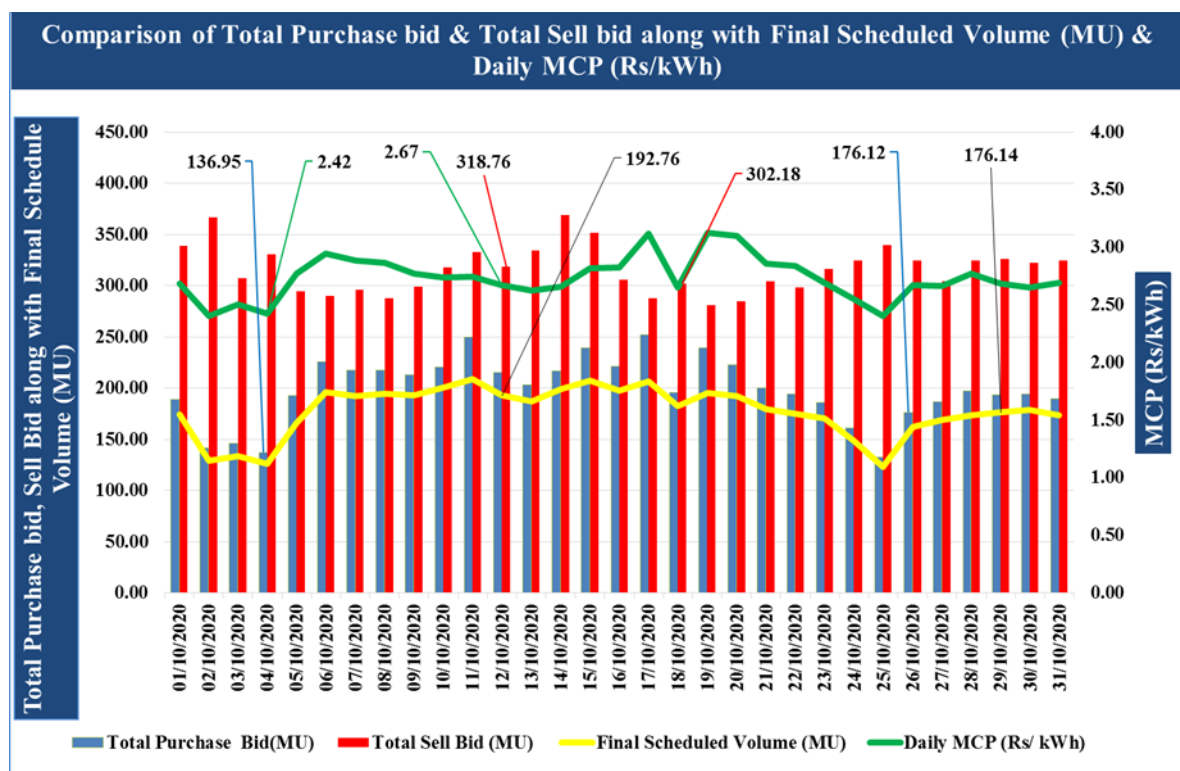


Figure -1

- 6.4. Invariably, the Final Scheduled Volume (MU) and the Daily MCP (Rs/kWh) showed decreasing trend on Sundays as the demand of electricity in the country is less compared to other days of week. However, in the month of October, 2020, it is observed that on second

Sunday (i.e. 11th October, 2020), FSV showed increasing trend in comparison to Saturday (i.e. 10th October, 2020). Whereas, on second Monday (i.e. 12th October, 2020), FSV showed decreasing trend in comparison to Sunday (i.e. 11th October, 2020). The detailed analysis on this is given at **Appendix-I**.

- 6.5. A comparison of maximum, minimum, daily, non-peak time, peak time MCP is shown in **Figure -2**. The same are also tabulated in **Annexure III**.

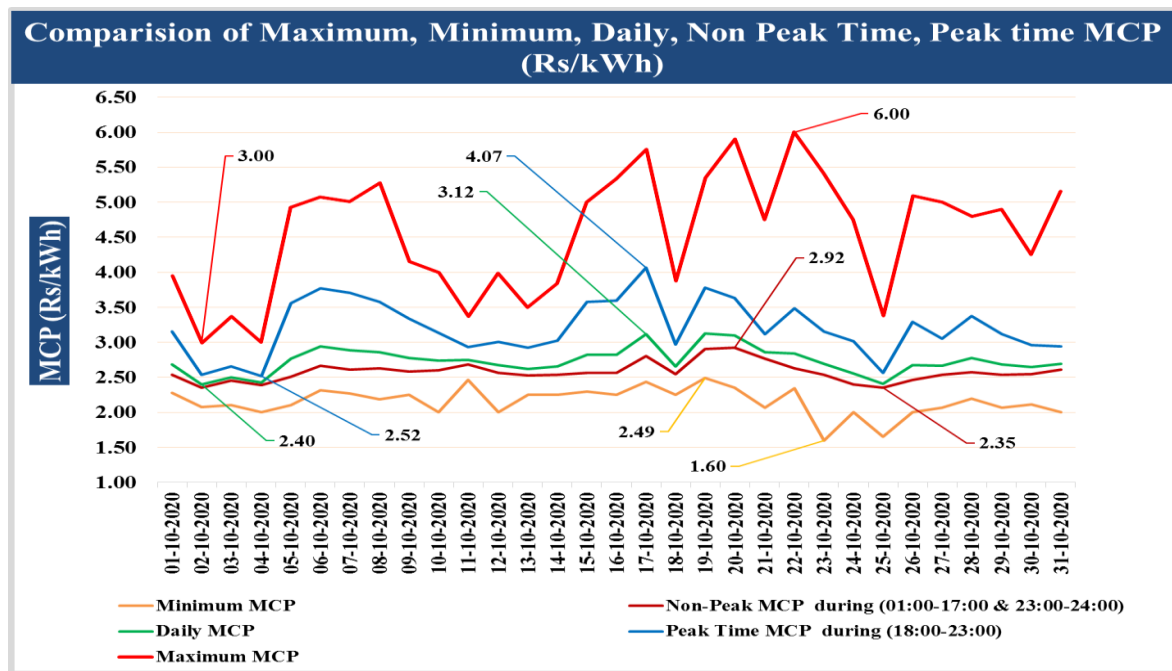


Figure -2

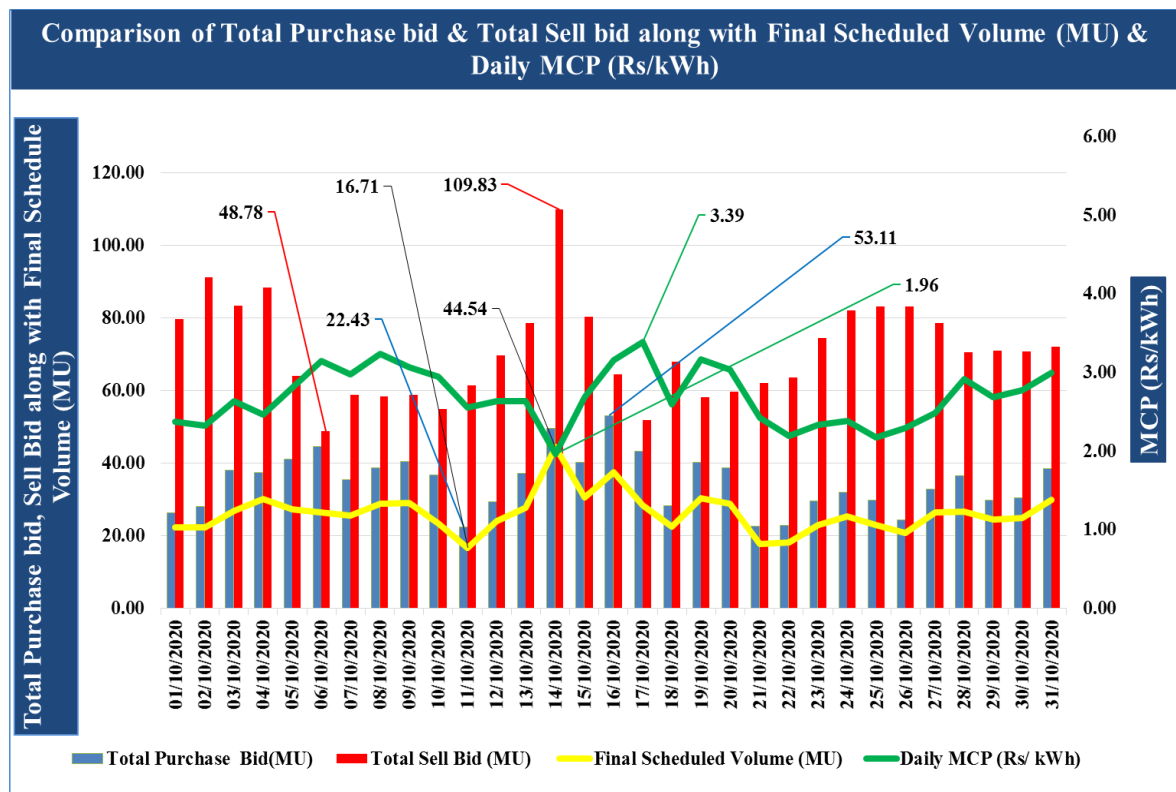
- 6.6. The Purchase Bids and the MCP discovered in each of the 15-minute time block during the month almost followed the same trend [**Annexure IV**]. This is also corroborated with the outcome of regression analysis mentioned in at para 6.1 and 6.2 above.
- 6.7. On **24 days** during the month, the maximum FSV occurred during the **time period 17:45-19:45**. [**Annexure V**]
- 6.8. On all **31 days** during the month, the maximum MCP occurred during the **time period 18:00-19:30**. [**Annexure V**]
- 6.9. On **27 days** during the month, the minimum FSV occurred during the **time period 03:15-06:00**. [**Annexure V**]
- 6.10. The maximum demand met during the month of October, 2020 in the country occurred on **7th October, 2020 at 170.05 GW**, which is 3.69 % less than the maximum demand occurred during **September, 2020 [i.e. 176.57 GW on 18th, September, 2020]** and is 3.52 % more than the maximum demand occurred during October, 2019 i.e. [**164.26 GW on 14th October, 2019**].

- 6.11. One nation One Price was observed for **29 days** in IEX in October, 2020, as there was a congestion of 2.01 MU on two days (i.e. 28th & 29th October, 2020) in transmission system in IEX in October, 2020. In PXIL, there was no congestion in transmission system in October, 2020, so one nation one price was observed on all 31 days during the month. In the month of September, 2020, there was no congestion in transmission system in IEX, hence, one nation one price was observed for all 30 days on IEX. In PXIL, there was congestion in transmission system of **0.045 MU** on 5th September, 2020, so one nation one price was observed on 29 days only during the month. Similarly, in the month of October, 2019, there was **no** congestion in transmission system in IEX, hence, one nation one price was observed for all **31 days** on IEX during October, 2019. In PXIL, there was also no congestion in transmission system, so one nation one price was observed on all 22 days during which transaction of electricity happened (1st-21st and 27th October, 2019).
- 6.12. There was real time curtailment of **0.16 MU** in IEX in October, 2020, whereas in PXIL, there was **no** real time curtailment during October, 2020. Further, there was no real time curtailment in IEX and PXIL in September, 2020 as well. In October, 2019 also, there was no real time curtailment in IEX and PXIL.
- 6.13. The **top 10 sellers** on the power exchanges in DAM in the month of October, 2020 are **Teesta -3, Odisha, Sembcorp Gayatri, Jaypee Nigrie, Raipur Energen, Jindal Power, Adani Power STG-II, Uttar Pradesh, Madhya Pradesh and Jindal Power Ltd. Stg-II**, which constituted **55.74%** of the market volume. [Annexure VI]
- 6.14. The **top 10 purchasers** on the power exchanges in DAM in the month of October, 2020 are **Gujarat, Andhra Pradesh, Punjab, Tamil Nadu, Rajasthan, Uttar Pradesh, Uttarakhand, Maharashtra, Haryana and Bihar**, which constituted **77.77 %** of the market volume. [Annexure VI]

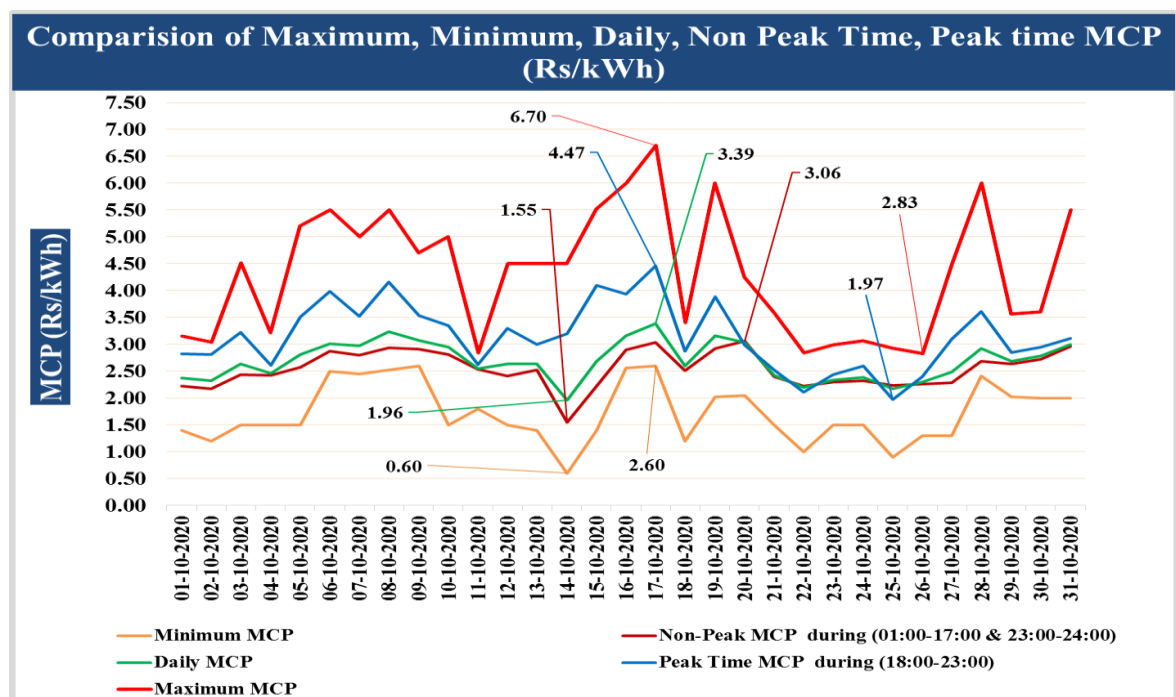
7. ANALYSIS OF MOVEMENT OF PRICES OBSERVED IN REAL TIME MARKET (RTM) TRANSACTIONS IN OCTOBER, 2020

- 7.1. 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 0.28. 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 October, 2020 for RTM transactions also.

- 7.2. The Purchase Bids and the MCP discovered in each of the 15-minute time block during the month almost followed the same trend [Annexure VIII]. This is also corroborated with the outcome of regression analysis mentioned in at para 7.1 above
- 7.3. The Total Purchase Bid, Total Sell Bid, Daily MCP and FSV are shown in Figure-3 below:



- 7.4. A comparison of maximum, minimum, daily, non-peak time, peak time MCP is shown in Figure-4. The same are also tabulated in Annexure VII.



- 7.5. On **28 days** during the month, the maximum MCP occurred during the **time period 17:15-20:00**. [Annexure IX]
- 7.6. There was **no real time curtailment** in IEX in Real Time Market during October, 2020 and September, 2020, whereas, no transaction of electricity happened in PXIL during October, 2020 and September, 2020.
- 7.7. In the month of October, 2020, there was congestion of **0.05 MU** in transmission system in IEX in Real Time Market on two days (i.e. 15th and 27th October, 2020), hence, one nation one price was observed for **29 days** in IEX in October, 2020. Whereas, in PXIL, no transaction of electricity happened in October, 2020 in Real Time Market.
- 7.8. The **top 10 sellers** on the power exchanges in RTM in the month of October, 2020 are **Odisha, Telangana, Kameng HEP, Karnataka, Uttar Pradesh, West Bengal, NLC, Neyveli New Thermal Power Project, Ramagundam Stg-1 and Adani Power STG2**, which constituted **53.90%** of the market volume. [Annexure X]
- 7.9. The **top 10 purchasers** on the power exchanges in RTM in the month of October, 2020 are **Andhra Pradesh, UT of J&K and Ladakh, West Bengal, Punjab, Rajasthan, Maharashtra, Telangana, Delhi, Odisha and Bihar**, which constituted **81.32 %** of the market volume. [Annexure X]

-
- 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, 2020 to October, 2020 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, 2020	3,692.04	-	2.42	NA	0	NA
	May, 2020	5,573.73	22.24	2.57	2.58	0	0
	June, 2020	4,174.34	15.03	2.35	2.56	0	0
Total Quarter -I	April - June, 2020	13,440.11	37.27			0	0
Quarter-II	July, 2020	4486.71	-	2.47	NA	0	NA
	August, 2020	4,484.36	14.10	2.43	2.64	0	0
	September, 2020	4,780.99	60.20	2.69	270	0	0
Total Quarter -II	July – September, 2020	13,752.06	74.30				
Quarter-III	October, 2020	5,500.53	49.57	2.74	2.80	0.16	0
Total April - October, 2020		32,692.70	161.14			0.16	0

- : No Transaction happened

NA: Not Applicable

Annexure-II

Final Scheduled Volume in Term Ahead Market (TAM) for the months of April, 2020 to October, 2020 of IEX and PXIL

Quarter	Months	Final Scheduled Volume (MU)		
		IEX	PXIL	Total
Quarter -I	April, 2020	395.88	191.30	587.18
	May, 2020	387.42	284.38	671.80
	June, 2020	74.00	74.88	148.88
Total Quarter -I	April - June, 2020	857.30	550.56	1,407.86
Quarter-II	July, 2020	60.75	28.29	89.04
	August, 2020	151.09	321.22	472.31
	September, 2020	98.30	472.44	570.74
Total Quarter -II	July – September, 2020	310.14	821.95	1,132.09
Quarter-III	October	276.80	791.06	1067.86
Total April - October, 2020		1,444.24	2,163.57	3,607.81

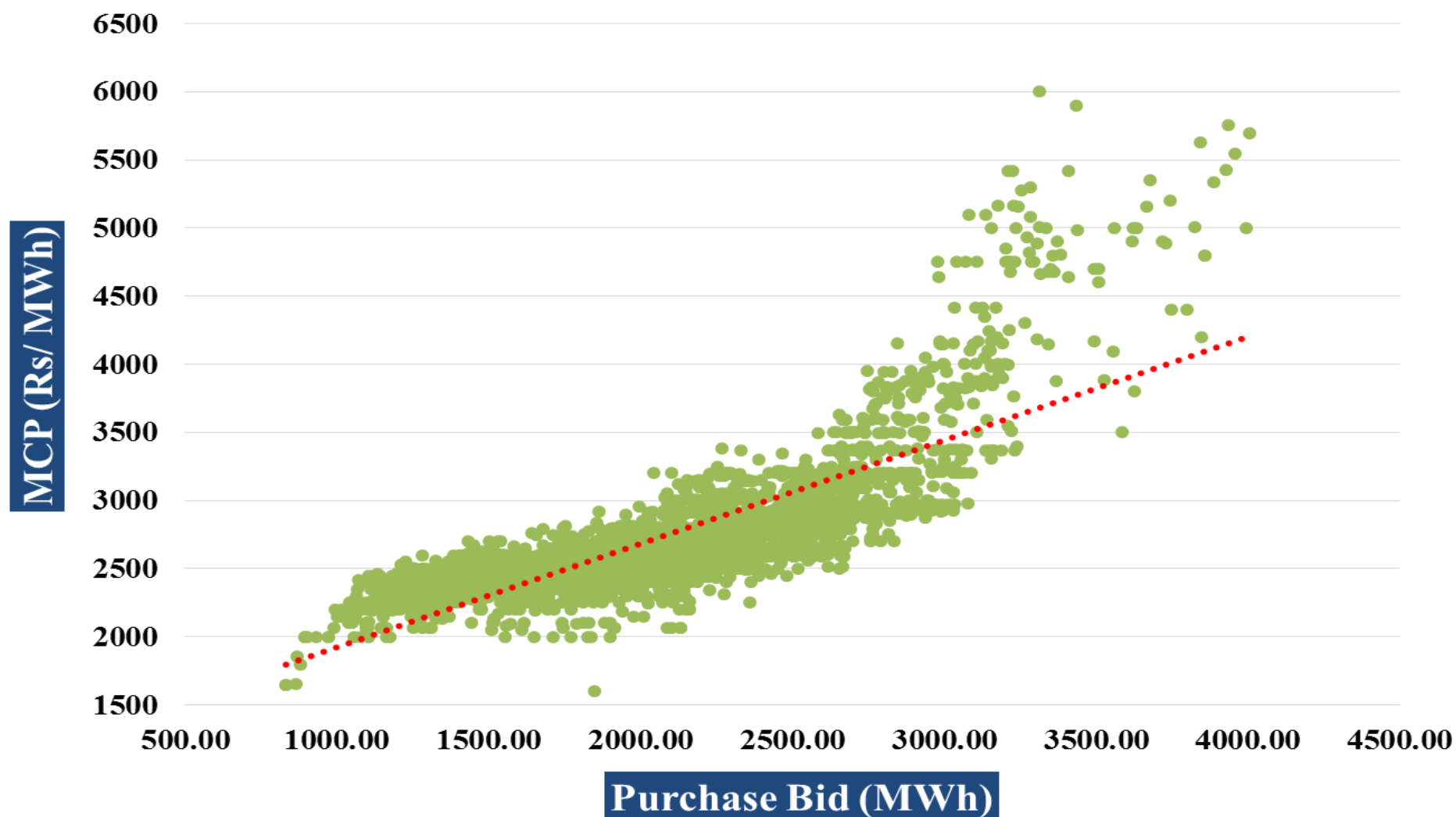
Annexure-III**Peak Time MCP, Non-Peak MCP, Maximum MCP, Minimum MCP, Average MCP and Final Scheduled Volume (MU) in DAM**

Date	MCP during (01:00-06:00, 23:00-24:00)	MCP during (07:00-10:00)	MCP during (11:00-17:00)	Peak Time MCP during (18:00-23:00)	Non-Peak MCP during (01:00-17:00 & 23:00-24:00)	Maximum MCP	Minimum MCP	Average MCP	Final Scheduled Volume (MU)
01/10/2020	2.52	2.47	2.58	3.15	2.53	3.95	2.27	2.69	174.40
02/10/2020	2.36	2.35	2.36	2.54	2.36	3.00	2.08	2.40	129.29
03/10/2020	2.42	2.44	2.48	2.66	2.45	3.37	2.10	2.50	133.25
04/10/2020	2.36	2.43	2.40	2.52	2.39	3.00	2.00	2.42	126.02
05/10/2020	2.43	2.50	2.60	3.56	2.51	4.93	2.10	2.77	165.62
06/10/2020	2.65	2.80	2.61	3.77	2.67	5.08	2.32	2.94	195.68
07/10/2020	2.47	2.57	2.77	3.71	2.61	5.01	2.27	2.88	192.11
08/10/2020	2.54	2.55	2.75	3.58	2.62	5.28	2.18	2.86	194.08
09/10/2020	2.51	2.56	2.67	3.34	2.59	4.15	2.25	2.77	193.25
10/10/2020	2.46	2.69	2.70	3.13	2.60	4.00	2.00	2.74	200.11
11/10/2020	2.71	2.69	2.65	2.93	2.68	3.37	2.46	2.75	208.48
12/10/2020	2.34	2.64	2.74	3.01	2.56	3.99	2.00	2.67	192.76
13/10/2020	2.46	2.54	2.58	2.92	2.52	3.50	2.25	2.62	187.01
14/10/2020	2.52	2.55	2.54	3.03	2.54	3.84	2.25	2.66	198.72
15/10/2020	2.48	2.54	2.66	3.58	2.57	5.00	2.29	2.82	207.08
16/10/2020	2.46	2.58	2.67	3.60	2.57	5.33	2.25	2.83	197.47
17/10/2020	2.70	2.85	2.88	4.07	2.80	5.76	2.43	3.12	206.66
18/10/2020	2.57	2.61	2.48	2.97	2.55	3.87	2.25	2.65	182.59
19/10/2020	2.66	2.97	3.12	3.78	2.91	5.35	2.49	3.12	194.95
20/10/2020	2.79	2.93	3.05	3.63	2.92	5.90	2.35	3.10	192.27
21/10/2020	2.51	2.81	3.00	3.12	2.77	4.75	2.06	2.85	179.52
22/10/2020	2.54	2.74	2.65	3.49	2.63	6.00	2.34	2.84	174.96
23/10/2020	2.48	2.60	2.55	3.15	2.54	5.42	1.60	2.69	170.34
24/10/2020	2.34	2.56	2.36	3.02	2.40	4.75	2.00	2.55	148.38
25/10/2020	2.43	2.65	2.10	2.56	2.35	3.38	1.65	2.40	123.04
26/10/2020	2.27	2.62	2.57	3.29	2.46	5.10	2.00	2.67	161.98
27/10/2020	2.42	2.64	2.59	3.06	2.53	5.00	2.06	2.67	168.63
28/10/2020	2.45	2.74	2.59	3.38	2.57	4.80	2.20	2.77	173.68
29/10/2020	2.31	2.89	2.57	3.12	2.54	4.90	2.06	2.68	176.14
30/10/2020	2.34	2.89	2.55	2.96	2.54	4.25	2.11	2.65	178.39
31/10/2020	2.43	2.91	2.61	2.94	2.61	5.16	2.00	2.69	173.67
Maximum	2.79	2.97	3.12	4.07	2.92	6.00	2.49	3.12	208.48
Minimum	2.27	2.35	2.10	2.52	2.35	3.00	1.60	2.40	123.04
Average	2.48	2.65	2.63	3.21	2.58	4.55	2.15	2.74	177.44

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 October, 2020



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

Annexure-V**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
01/10/2020	19:30 - 19:45	2.53	18:45 - 19:00	3.95	05:15 - 05:30	1.13	05:30 - 05:45	2.27
02/10/2020	19:15 - 19:30	2.09	19:15 - 19:30	3.00	05:15 - 05:30	0.99	22:45 - 23:00	2.08
03/10/2020	19:00 - 19:15	2.04	19:00 - 19:15	3.37	04:00 - 04:15	0.95	13:15 - 13:30	2.10
04/10/2020	19:00 - 19:15	1.94	19:00 - 19:15	3.00	04:15 - 04:30	0.92	13:15 - 13:30	2.00
05/10/2020	20:45 - 21:00	2.45	19:00 - 19:15	4.93	04:30 - 04:45	0.87	04:30 - 04:45	2.10
06/10/2020	07:15 - 07:30	2.69	18:45 - 19:00	5.08	04:15 - 04:30	1.29	13:15 - 13:30	2.32
07/10/2020	19:30 - 19:45	2.63	19:15 - 19:30	5.01	04:00 - 04:15	1.40	23:45 - 24:00	2.27
08/10/2020	20:45 - 21:00	2.70	19:00 - 19:15	5.28	04:30 - 04:45	1.32	08:00 - 08:15	2.18
09/10/2020	19:30 - 19:45	2.64	19:15 - 19:30	4.15	04:00 - 04:15	1.48	22:00 - 22:15	2.25
10/10/2020	18:15 - 18:30	2.80	18:15 - 18:30	4.00	03:45 - 04:00	1.59	23:45 - 24:00	2.00
11/10/2020	18:30 - 18:45	2.53	18:30 - 18:45	3.37	10:45 - 11:00	1.87	23:45 - 24:00	2.46
12/10/2020	18:45 - 19:00	2.54	18:45 - 19:00	3.99	05:00 - 05:15	1.45	23:45 - 24:00	2.00
13/10/2020	19:15 - 19:30	2.56	19:00 - 19:15	3.50	05:15 - 05:30	1.44	14:00 - 14:15	2.25
14/10/2020	19:00 - 19:15	2.76	19:00 - 19:15	3.84	04:15 - 04:30	1.55	14:00 - 14:15	2.25
15/10/2020	19:30 - 19:45	2.84	18:45 - 19:00	5.00	05:30 - 05:45	1.46	07:45 - 08:00	2.29
16/10/2020	19:30 - 19:45	2.85	18:45 - 19:00	5.33	05:45 - 06:00	1.57	00:00 - 00:15	2.25
17/10/2020	20:00 - 20:15	2.85	18:45 - 19:00	5.76	04:00 - 04:15	1.73	08:00 - 08:15	2.43
18/10/2020	18:45 - 19:00	2.70	18:45 - 19:00	3.87	11:45 - 12:00	1.48	08:00 - 08:15	2.25
19/10/2020	17:45 - 18:00	2.84	18:30 - 18:45	5.35	04:45 - 05:00	1.46	04:45 - 05:00	2.49
20/10/2020	18:15 - 18:30	2.71	18:30 - 18:45	5.90	04:30 - 04:45	1.35	04:30 - 04:45	2.35
21/10/2020	18:15 - 18:30	2.73	18:30 - 18:45	4.75	04:45 - 05:00	1.16	20:30 - 20:45	2.06
22/10/2020	19:00 - 19:15	2.61	18:30 - 18:45	6.00	04:00 - 04:15	1.23	04:45 - 05:00	2.34
23/10/2020	19:00 - 19:15	2.66	18:15 - 18:30	5.42	04:00 - 04:15	1.12	21:45 - 22:00	1.60
24/10/2020	18:15 - 18:30	2.57	18:15 - 18:30	4.75	04:15 - 04:30	0.99	13:15 - 13:30	2.00
25/10/2020	18:15 - 18:30	2.30	18:00 - 18:15	3.38	13:15 - 13:30	0.80	13:00 - 13:15	1.65
26/10/2020	18:45 - 19:00	2.63	18:00 - 18:15	5.10	03:30 - 03:45	0.99	04:15 - 04:30	2.00
27/10/2020	18:30 - 18:45	2.62	18:15 - 18:30	5.00	03:15 - 03:30	1.09	19:45 - 20:00	2.06
28/10/2020	16:45 - 17:00	2.73	18:15 - 18:30	4.80	03:30 - 03:45	1.08	13:15 - 13:30	2.20
29/10/2020	18:00 - 18:15	2.77	18:15 - 18:30	4.90	04:00 - 04:15	1.05	21:45 - 22:00	2.06
30/10/2020	07:15 - 07:30	2.88	18:15 - 18:30	4.25	23:45 - 24:00	1.09	22:30 - 22:45	2.11
31/10/2020	07:15 - 07:30	2.84	18:15 - 18:30	5.16	03:45 - 04:00	1.01	21:00 - 21:15	2.00

MCP: Market Clearing Price (Rs/kWh)

FSV: Final Scheduled Volume (MU)

Annexure-VI**Top Ten Entities (Sellers and Purchasers) in Day Ahead Market (DAM) in the month of October, 2020**

Entity Name	Sell		Entity Name	Purchase	
	(MU)	Percent (%)		(MU)	Percent
Teesta -3	497.70	8.97%	Gujarat	905.37	16.31%
Odisha	390.74	7.04%	Andhra Pradesh	715.04	12.88%
Sembcorp Gayatri	387.90	6.99%	Punjab	624.88	11.26%
Jaypee Nigrie	347.78	6.27%	Tamil Nadu	394.85	7.11%
Raipur Energen	303.23	5.46%	Rajasthan	369.59	6.66%
Jindal Power	297.27	5.36%	Uttar Pradesh	315.08	5.68%
Adani Power STG2	285.32	5.14%	Uttarakhand	283.35	5.11%
Uttar Pradesh	198.37	3.57%	Maharashtra	268.13	4.83%
Madhya Pradesh	196.97	3.55%	Haryana	220.84	3.98%
Jindal Power Ltd. Stg-II	188.31	3.39%	Bihar	219.16	3.95%
Total Volume	3093.60	55.74%	Total Volume	4316.28	77.77%
Total Volume in PXs	5550.26		Total Volume in	5550.26	

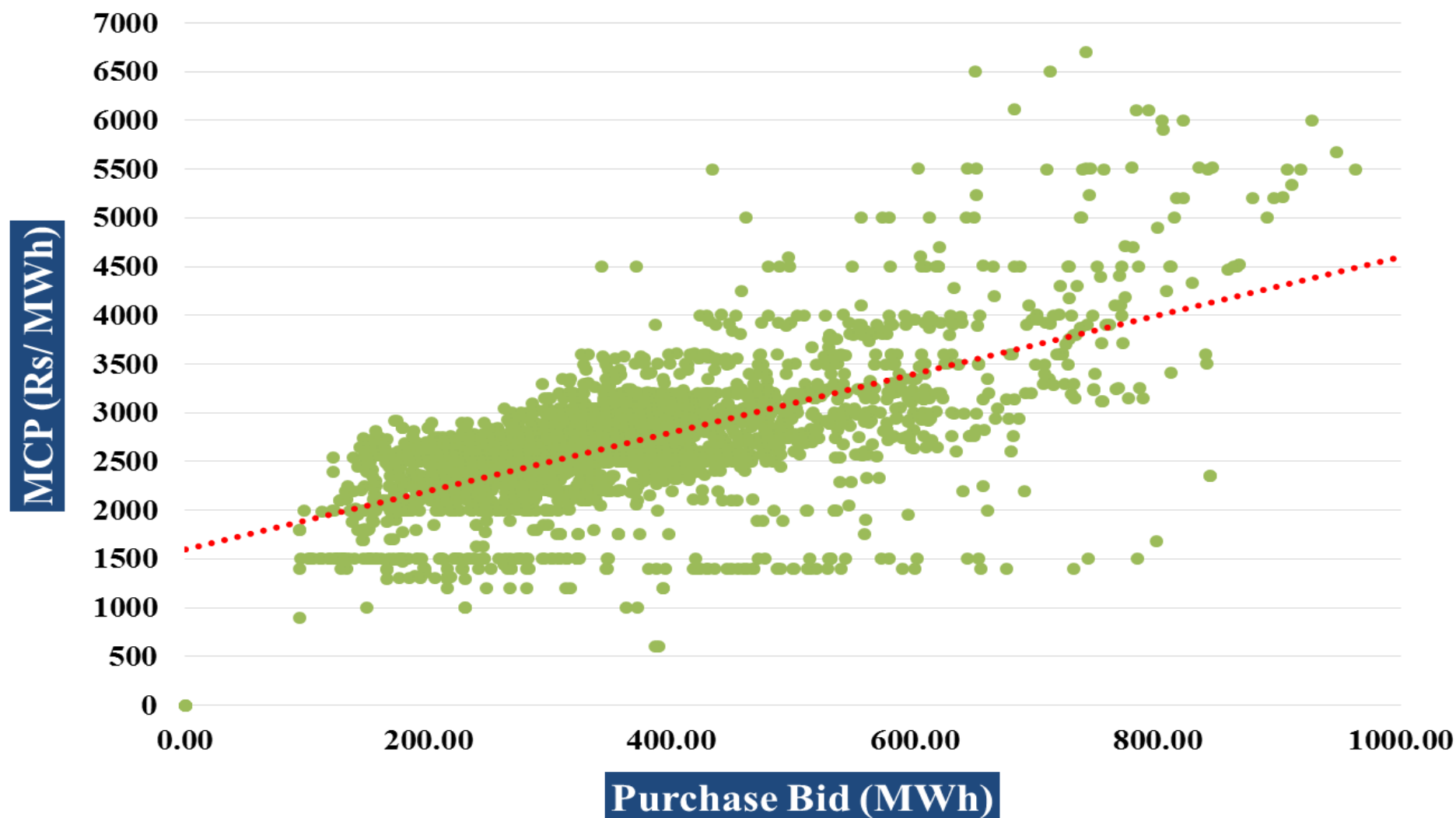
Peak Time MCP, Non-Peak MCP, Maximum MCP, Minimum MCP, Average MCP and Final Scheduled Volume (MU) in RTM

Date	MCP during (01:00-06:00, 23:00-24:00)	MCP during (07:00-10:00)	MCP during (11:00-17:00)	Peak Time MCP during (18:00-23:00)	Non-Peak MCP during (01:00-17:00 & 23:00-24:00)	Maximum MCP	Minimum MCP	Average MCP	Final Scheduled Volume (MU)
01/10/2020	2.21	2.37	2.15	2.82	2.22	3.15	1.40	2.37	22.31
02/10/2020	2.30	2.25	1.98	2.80	2.16	3.04	1.20	2.32	22.39
03/10/2020	2.41	2.50	2.42	3.22	2.43	4.52	1.50	2.63	26.84
04/10/2020	2.39	2.58	2.35	2.60	2.42	3.21	1.50	2.46	30.22
05/10/2020	2.50	2.64	2.60	3.50	2.57	5.20	1.50	2.80	27.24
06/10/2020	2.94	2.72	2.91	3.98	2.88	5.50	2.49	3.01	26.45
07/10/2020	2.82	2.63	2.86	3.52	2.79	5.00	2.44	2.97	25.60
08/10/2020	3.02	2.67	2.99	4.16	2.93	5.51	2.52	3.24	28.84
09/10/2020	2.87	2.94	2.94	3.54	2.91	4.71	2.60	3.07	29.10
10/10/2020	2.84	3.09	2.61	3.35	2.81	5.00	1.50	2.94	23.46
11/10/2020	2.62	2.57	2.41	2.62	2.53	2.84	1.80	2.55	16.71
12/10/2020	2.07	2.49	2.72	3.29	2.41	4.50	1.50	2.63	24.06
13/10/2020	2.32	2.58	2.68	2.99	2.52	4.50	1.40	2.63	27.83
14/10/2020	1.49	1.52	1.63	3.20	1.55	4.50	0.60	1.96	44.54
15/10/2020	2.25	2.45	2.05	4.09	2.22	5.52	1.40	2.68	30.50
16/10/2020	2.72	3.06	2.97	3.94	2.89	6.01	2.56	3.15	37.53
17/10/2020	2.91	3.13	3.10	4.47	3.03	6.70	2.60	3.39	28.44
18/10/2020	2.74	2.57	2.24	2.87	2.51	3.41	1.20	2.60	22.53
19/10/2020	2.64	3.10	3.10	3.89	2.92	6.00	2.02	3.16	30.38
20/10/2020	2.87	3.49	3.00	2.98	3.06	4.25	2.05	3.04	28.91
21/10/2020	2.18	2.78	2.37	2.52	2.39	3.58	1.50	2.42	17.81
22/10/2020	2.04	2.58	2.21	2.10	2.22	2.84	1.00	2.19	18.12
23/10/2020	2.18	2.48	2.31	2.44	2.30	2.99	1.50	2.33	22.95
24/10/2020	2.27	2.55	2.24	2.59	2.32	3.07	1.50	2.39	25.33
25/10/2020	2.56	2.47	1.78	1.97	2.24	2.92	0.90	2.17	23.05
26/10/2020	1.98	2.27	2.52	2.40	2.25	2.83	1.30	2.29	20.83
27/10/2020	1.79	2.53	2.64	3.09	2.28	4.50	1.30	2.49	26.43
28/10/2020	2.50	2.78	2.82	3.60	2.69	6.00	2.41	2.92	26.76
29/10/2020	2.44	2.90	2.68	2.85	2.63	3.57	2.02	2.69	24.42
30/10/2020	2.47	2.96	2.85	2.94	2.72	3.60	2.00	2.78	25.01
31/10/2020	2.57	3.44	3.07	3.11	2.96	5.50	2.00	3.00	29.89
Maximum	3.02	3.49	3.10	4.47	3.06	6.70	2.60	3.39	44.54
Minimum	1.49	1.52	1.63	1.97	1.55	2.83	0.60	1.96	16.71
Average	2.45	2.68	2.55	3.14	2.54	4.34	1.72	2.69	26.27

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 October, 2020



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

Annexure-IX**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
01/10/2020	21:00 - 21:15	0.37	19:15 - 19:30	3.15	12:45 - 13:00	0.13	12:45 - 13:00	1.40
02/10/2020	22:15 - 22:30	0.46	18:45 - 19:00	3.04	09:00 - 09:15	0.13	11:30 - 11:45	1.20
03/10/2020	21:15 - 21:30	0.54	19:45 - 20:00	4.52	05:30 - 05:45	0.13	11:00 - 11:15	1.50
04/10/2020	16:30 - 16:45	0.54	19:00 - 19:15	3.21	21:30 - 21:45	0.10	21:30 - 21:45	1.50
05/10/2020	20:30 - 20:45	0.52	19:30 - 19:45	5.20	22:45 - 23:00	0.14	11:15 - 11:30	1.50
06/10/2020	17:15 - 17:30	0.52	19:00 - 19:15	5.50	08:45 - 09:00	0.10	13:30 - 13:45	2.49
07/10/2020	20:15 - 20:30	0.46	19:00 - 19:15	5.00	17:45 - 18:00	0.13	04:00 - 04:15	2.44
08/10/2020	23:00 - 23:15	0.56	19:00 - 19:15	5.51	11:15 - 11:30	0.14	04:45 - 05:00	2.52
09/10/2020	14:45 - 15:00	0.44	19:00 - 19:15	4.71	21:15 - 21:30	0.14	23:00 - 23:15	2.60
10/10/2020	20:00 - 20:15	0.44	19:00 - 19:15	5.00	10:30 - 10:45	0.10	10:30 - 10:45	1.50
11/10/2020	15:30 - 15:45	0.33	18:45 - 19:00	2.84	19:00 - 19:15	0.09	10:15 - 10:30	1.80
12/10/2020	14:15 - 14:30	0.45	19:15 - 19:30	4.50	08:00 - 08:15	0.09	01:45 - 02:00	1.50
13/10/2020	23:30 - 23:45	0.52	18:30 - 18:45	4.50	04:00 - 04:15	0.13	23:45 - 24:00	1.40
14/10/2020	13:30 - 13:45	0.80	19:15 - 19:30	4.50	20:15 - 20:30	0.24	04:15 - 04:30	0.60
15/10/2020	14:15 - 14:30	0.46	19:30 - 19:45	5.52	09:15 - 09:30	0.18	11:00 - 11:15	1.40
16/10/2020	15:30 - 15:45	0.64	18:30 - 18:45	6.01	18:30 - 18:45	0.22	01:30 - 01:45	2.56
17/10/2020	16:45 - 17:00	0.59	19:30 - 19:45	6.70	01:30 - 01:45	0.12	02:45 - 03:00	2.60
18/10/2020	15:30 - 15:45	0.39	22:00 - 22:15	3.41	04:30 - 04:45	0.12	12:30 - 12:45	1.20
19/10/2020	18:15 - 18:30	0.62	18:30 - 18:45	6.00	04:45 - 05:00	0.12	02:45 - 03:00	2.02
20/10/2020	10:15 - 10:30	0.61	10:15 - 10:30	4.25	23:30 - 23:45	0.13	22:45 - 23:00	2.05
21/10/2020	08:45 - 09:00	0.36	18:15 - 18:30	3.58	22:00 - 22:15	0.08	21:45 - 22:00	1.50
22/10/2020	09:45 - 10:00	0.30	17:30 - 17:45	2.84	02:00 - 02:15	0.10	20:15 - 20:30	1.00
23/10/2020	16:00 - 16:15	0.36	17:45 - 18:00	2.99	00:15 - 00:30	0.14	21:45 - 22:00	1.50
24/10/2020	10:45 - 11:00	0.44	18:00 - 18:15	3.07	02:45 - 03:00	0.14	13:00 - 13:15	1.50
25/10/2020	02:30 - 02:45	0.39	06:15 - 06:30	2.92	21:15 - 21:30	0.09	19:00 - 19:15	0.90
26/10/2020	14:15 - 14:30	0.44	18:00 - 18:15	2.83	06:45 - 07:00	0.08	22:45 - 23:00	1.30
27/10/2020	17:30 - 17:45	0.49	17:45 - 18:00	4.50	10:00 - 10:15	0.13	00:30 - 00:45	1.30
28/10/2020	15:00 - 15:15	0.52	18:00 - 18:15	6.00	23:00 - 23:15	0.09	04:00 - 04:15	2.41
29/10/2020	12:30 - 12:45	0.49	17:15 - 17:30	3.57	22:30 - 22:45	0.09	22:15 - 22:30	2.02
30/10/2020	13:30 - 13:45	0.50	19:00 - 19:15	3.60	22:15 - 22:30	0.10	22:15 - 22:30	2.00
31/10/2020	17:00 - 17:15	0.61	17:30 - 17:45	5.50	00:45 - 01:00	0.14	20:45 - 21:00	2.00

MCP: Market Clearing Price (Rs/kWh)

FSV: Final Scheduled Volume (MU)

Annexure-X**Top Ten Entities (Sellers and Purchasers) in Real Time Market (RTM) in the month of October, 2020**

Entity Name	Sell		Entity Name	Purchase	
	(MU)	Percent (%)		(MU)	Percent (%)
Odisha	78.76	9.67%	Andhra Pradesh	132.30	16.24%
Telangana	60.50	7.43%	UT of J&K and Ladakh	117.07	14.37%
Kameng HEP	56.52	6.94%	West Bengal	82.75	10.16%
Karnataka	55.09	6.76%	Punjab	74.20	9.11%
Uttar Pradesh	45.82	5.63%	Rajasthan	74.10	9.10%
West Bengal	33.66	4.13%	Maharashtra	55.09	6.76%
NLC	30.58	3.75%	Telangana	47.72	5.86%
Neyveli New Thermal	29.09	3.57%	Delhi	30.50	3.74%
Ramagundam Stg-1	25.92	3.18%	Odisha	24.46	3.00%
Adani Power STG -II	23.05	2.83%	Bihar	24.18	2.97%
Total Volume	439.00	53.90%	Total Volume	662.36	81.32%
Total Volume in PXs	814.48		Total Volume in PXs	814.48	

Appendix-I**Analysis for change in trend of Final Scheduled Volume in DAM on 2nd Sunday and on 2nd Monday of October, 2020 (i.e. 11th and 12th October, 2020)**

During the month of October, 2020, it is observed that on second Sunday (i.e. 11th October, 2020), FSV showed increasing trend in comparison to second Saturday (i.e. 10th October, 2020). Whereas, on second Monday (i.e. 12th October, 2020) FSV showed decreasing trend in comparison to second Sunday (i.e. 11th October, 2020). On analysis of this variation in trends of FSV on above days during October, 2020, it has been observed as under:

- (i) On Sunday (11th October, 2020), although there was increase in purchase on power exchange by some of the States in comparison to Saturday (10th October, 2020) by **34.28 MU** [i.e. Punjab (16.45 MU), West Bengal (9.88 MU), Andhra Pradesh (6.92 MU), Delhi (0.88 MU), etc.], there was also decrease in purchase on power exchange by some of the States by **25.91 MU** [i.e. Maharashtra (9.93 MU), Gujarat (4.06 MU), Uttarakhand (2.73 MU), Uttar Pradesh (1.96 MU), Haryana (1.94 MU), etc.] This resulted in an overall increase in FSV by **8.37 MU** on Sunday (11th October, 2020).
- (ii) On Monday (12th October, 2020), although there was increase in purchase on power exchange by some of the States in comparison to Sunday (11th October, 2020) by **22.78 MU** [i.e. Rajasthan (8.02 MU), UT of J&K and Ladakh (4.49 MU), Uttarakhand (3.09 MU), Haryana (1.77 MU), etc.], there was also decrease in purchase on power exchange by some of the States by **38.33 MU** [i.e. Andhra Pradesh (20.35 MU), Punjab (9.85 MU), West Bengal (4.49 MU), Maharashtra (2.20 MU), etc.] This resulted in an overall decrease in FSV by **15.55 MU** on Monday (12th October, 2020)

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. **Daily MCP** is the average of MCP of all 96 Time Blocks of the day during which transaction happened.
4. **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.
5. **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.
6. **Energy Supplied** is the total energy (MU) available at the States' periphery.
7. **Final Scheduled Volume** is the total of scheduled volume of all 96 time blocks in a day during the month in which transaction happened.
8. **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.
9. **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.
10. **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.

11. 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.