



सितंबर, 2020 मासिक मार्केट मॉनिटरिंग रिपोर्ट

Monthly Market Monitoring Report

September, 2020



भारत सरकार/ Government of India

विद्युत मंत्रालय/ Ministry of Power

केन्द्रीय विद्युत प्राधिकरण/ Central Electricity Authority

आर. ए. प्रभाग/ Regulatory Affairs Division

मार्केट मॉनिटरिंग सेल /Market Monitoring Cell

दिनांक: 27.10.2020

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	6
4.	Real Time Market	7
5.	Green Term Ahead Market	8
6.	Analysis of movement of prices observed in DAM during September, 2020	9
7.	Analysis of Movement of prices observed in RTM Transactions in September, 2020	11

TABLES

1.	Table: 1A Daily MCP of IEX and PXIL in DAM for September,2020 vs August,2020	4
2.	Table: 1B Daily MCP of IEX and PXIL in DAM for September,2020 vs September, 2019	4
3.	Table: 2A ACP of IEX and PXIL in DAM for September, 2020 vs August, 2020	5
4.	Table: 2B ACP of IEX and PXIL in DAM for September, 2020 vs September, 2019	5
5.	Table: 3A FSV of IEX and PXIL in DAM for September, 2020 vs August, 2020	5
6.	Table: 3B FSV of IEX and PXIL in DAM for September, 2020 vs September, 2019	5
7.	Table:4A: FSV of IEX and PXIL in TAM for September, 2020 vs August, 2020	6
8.	Table: 4B FSV of IEX and PXIL in TAM for September, 2020 vs September, 2019	7
9.	Table: 5A: FSV of IEX and PXIL in RTM for September, 2020 vs August, 2020	7
10.	Table: 5B Daily MCP of IEX and PXIL in RTM for September, 2020 vs August, 2020	7
11.	Table: 5C ACP of IEX and PXIL in RTM for September, 2020 vs August, 2020	7
12.	Table: 6A FSV of IEX in GTAM for September, 2020 vs August, 2020	8
13.	Table: 6B Daily MCP of IEX in GTAM for September, 2020 vs August, 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 September, 2020	14
2.	Annexure II-: FSV in TAM for the months April, 2020 to September, 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	16
4.	Annexure-IV: Comparison of MCP w.r.t. Purchase Bid for 2,880 Time Blocks during the month of September, 2020 in DAM	17
5.	Annexure-V: Max. FSV, Min FSV, Max MCP and Min MCP w.r.t. all Time blocks in DAM	18
6.	Annexure-VI: Top Ten Entity (Sellers and Purchaser) in September, 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	20
8.	Annexure-VIII: Comparison of MCP w.r.t. Purchase Bid for 2,880 Time Blocks during the month of September, 2020 in RTM	21
9.	Annexure-IX: Max. FSV, Min FSV, Max MCP and Min MCP w.r.t. all Time blocks in RTM	22
10.	Annexure-X: Top Ten Entity (Sellers and Purchaser) in September, 2020 in RTM	23

APPENDIX

1.	Appendix-I: Definitions/ Terminologies used in the Report	24
----	--	----

REPORT FOR MONTH: SEPTEMBER, 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 September, 2020 is **4,841.19 MU**. The total energy supplied in the country during the month of September, 2020 is **112,436 MU (Provisional)**. Thus, the volume of electricity transacted on the power exchanges in DAM was **4.31 %** of the total energy supplied in the country. The total volume of electricity transacted in DAM during August, 2020 was **4,498.46 MU** which was **4.12%** of the total energy supplied [**109,217 MU**] in the country during August, 2020. Similarly, the total volume of electricity transacted in DAM during September, 2019 was **3,488.60 MU** which was **3.24 %** of the total energy supplied [**107,515 MU**] in the country during September, 2019.
- 1.2. 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. The volume of electricity transacted on IEX and PXIL during August, 2020 are **4,484.36 MU** and **14.10 MU**, respectively, which means that the total volume transacted on IEX is **99.68 %** of the total volume on power exchanges. Also, the total volume of electricity transacted during September, 2019 on IEX and PXIL was **3,487.57 MU** and **1.03 MU**, respectively, which means that the total volume transacted on IEX was **99.97 %** of the total volume on the power exchanges.
- 1.3. The Average Market Clearing Price (MCP) on IEX during the month of September, 2020 is **Rs 2.69/kWh**, which shows an increase of **10.70 %** and a decline of **2.89 %** when compared with average MCP's for the month of August, 2020 and September, 2019, which were **Rs 2.43/kWh** and **Rs 2.77/kWh**, respectively. On PXIL, the average MCP during the month of September, 2020 is **Rs 2.70/kWh**, which shows an increase of **2.27%** and decline of **5.92 %**, when compared with average MCP's for the month of August, 2020 and September, 2019, which were **Rs 2.64/kWh** and **Rs 2.87/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 September, 2020 with that of August, 2020 and September, 2019 is given in Table- 1A & 1B:

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

Daily MCP (Rs/kWh)	IEX			PXIL		
	September, 2020	August, 2020	% Change	September, 2020	August, 2020	% Change
Minimum	2.46	1.64	50.00	2.43	2.47	-1.62
Maximum	3.15	2.99	5.35	3.09	2.81	9.96
Average	2.69	2.43	10.70	2.70	2.64	2.27

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

Daily MCP (Rs/kWh)	IEX			PXIL		
	September, 2020	September, 2019	% Change	September, 2020	September, 2019	% Change
Minimum	2.46	2.15	14.42	2.43	2.51	-3.19
Maximum	3.15	3.34	-5.69	3.09	3.15	-1.90
Average	2.69	2.77	-2.89	2.70	2.87	-5.92

Table: 1B

- 2.2. The maximum Area Clearing Price (ACP) of **Rs 5.44/kWh** in IEX was observed in all 13 regions during the time block **20:00-20:15 Hrs** on **5th September, 2020**. As there was no congestion in transmission system, the MCP for this time-block was also **Rs 5.44/kWh**. However, the Daily MCP in IEX on pan India basis **5th September, 2020** was **Rs 2.93/kWh**. Whereas, in PXIL, the maximum ACP of **Rs 6.00/kWh** was observed in all 13 regions during the time blocks from **23:00-23:15 Hrs** on **6th September, 2020**. As no congestion was there in transmission system, the MCP for above time blocks was also **Rs 6.00/kWh**. However, the Daily MCP in PXIL on **6th September, 2020** was **Rs 3.09/kWh**.
- 2.3. The minimum ACP of **Rs 1.77/kWh** in IEX was observed in all 13 regions during the time block **18:00-18:15 Hrs** on **20th September, 2020**. As there was no congestion in transmission system, the MCP for this time-block was also **Rs 1.77/kWh**. However, the Daily MCP in IEX on pan India basis on **20th September, 2020** was **Rs 2.57/kWh**. Whereas, in PXIL, the minimum ACP of **Rs 1.04/kWh** was observed in all 13 regions on **11th September, 2020** for time period **08:00 -11:00 Hrs**. As no congestion was there in transmission system, the MCP for the above time blocks was also **Rs 1.04/kWh**. However, the Daily MCP in PXIL on **11th September, 2020** was **Rs 2.94/kWh**.
- 2.4. **A comparison of the Minimum and Maximum Area Clearing Price (ACP) during the months of September, 2020 with that of August, 2020 and September, 2019 is given in Table- 2A & 2B:**

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

ACP (Rs/kWh)	IEX			PXIL		
	September, 2020	August, 2020	% Change	September, 2020	August, 2020	% Change
Minimum	1.77	0.68	160.29	1.04	2.00	- 48.00
Maximum	5.44	4.93	10.34	6.00	4.18	43.54

Table: 2A**(b) September, 2020 vis- a- vis September, 2019**

ACP (Rs/kWh)	IEX			PXIL		
	September, 2020	September, 2019	% Change	September, 2020	September , 2019	% Change
Minimum	1.77	1.00	77.00	1.04	2.51	-58.57
Maximum	5.44	6.73	-19.17	6.00	3.15	90.48

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

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

Final Scheduled Volume (MU)	IEX			PXIL		
	September, 2020	August, 2020	% Change	September, 2020	August, 2020	% Change
Minimum	125.62	103.09	21.85	0.84	0.87	-3.45
Maximum	182.60	187.85	-2.79	3.94	3.83	2.87
Average	159.37	144.66	10.17	2.01	2.01	0.00

Table: 3A**(b) September, 2020 vis- a- vis September, 2019**

Final Scheduled Volume (MU)	IEX			PXIL		
	September, 2020	September, 2019	% Change	September, 2020	September, 2019	% Change
Minimum	125.62	75.59	66.19	0.84	0.079	963.29
Maximum	182.60	129.47	41.04	3.94	0.116	3,296.55
Average	159.37	116.25	37.09	2.01	0.094	2,038.30

Table: 3B

- 2.6. The total volume of electricity transacted in DAM on both the power exchanges during the period April, 2020 to September, 2020 is **27,303.74 MU**. The same was **24,982.13 MU** during the period April, 2019 to September, 2019, which shows an **increase of 9.29 %**.

3. TERM AHEAD MARKET (TAM)

- 3.1. 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.
- 3.2. The total volume of electricity transacted on both the power exchanges in Term Ahead Market in August, 2020 was **472.31 MU**, out of which, **151.09 MU** (31.99 %) was transacted on IEX and **321.22 MU** (68.01%) was transacted on PXIL.
- 3.3. Similarly, total volume of electricity transacted during September, 2019 in Term Ahead Market on both the power exchanges was **770.47 MU**, out of which, **380.02 MU** (49.32 %) was transacted on IEX and **390.45 MU** (50.68 %) was transacted on PXIL.
- 3.4. With respect to the total energy supplied during the month of September, 2020 in the country, the volume of electricity traded on the power exchanges in TAM represents **0.51 %** of the total energy supplied. The same was **0.43 %** in August, 2020 and **0.72 %** in September, 2019.
- 3.5. The total volume of electricity transacted in TAM on both the power exchanges during the period April, 2020 to September, 2020 is **2,539.95 MU**, which shows decrease of **43.13 %** as compared to **4,466.47 MU** during the period April, 2019 to September, 2019.
- 3.6. **The comparison of total volume of electricity transacted on both the power exchanges in Term Ahead Market (TAM) during September, 2020 with August, 2020 and September, 2019 is given in Table - 4A & 4B:**

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

Contract Type	IEX			PXIL		
	September, 2020	August, 2020	% Change	September, 2020	August, 2020	% Change
Intra Day (MU)	11.33	1.87	505.88	26.36	18.77	40.44
Day Ahead Contingency (MU)	42.09	2.46	1,610.98	-	-	NA
Daily/ Any Day (MU)	11.28	146.76	-92.31	446.08	302.45	47.49
Weekly (MU)	33.60	-	NA	-	-	NA

- : No transaction happened

NA: Not Applicable

Table: 4A

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

Contract Type	IEX			PXIL		
	September, 2020	September, 2019	% Change	September, 2020	September, 2019	% Change
Intra Day (MU)	11.33	76.03	-85.10	26.36	64.24	-58.97

Day Ahead Contingency	42.09	91.83	-54.17	-	-	NA
Daily/ Any Day	11.28	186.96	-93.97	446.08	68.93	547.15
Weekly (MU)	33.60	25.20	33.33	-	257.29	NA

- : No transaction happened

NA: Not Applicable

Table: 4B

- 3.7. In Term Ahead Market (TAM), there was real time curtailment of **0.125 MU** under “Intraday” contract and **1.16 MU** under “Day Ahead Contingency” contract in IEX in the month of September, 2020. There was real time curtailment of **4.16 MU** in IEX in the month of August, 2020 under Daily/Any Day” contract.

4. REAL TIME MARKET (RTM)

The transaction of Electricity in the 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) during the month of September, 2020 in Real Time Market as compared with August, 2020 are as given in table 5A, 5B & 5C:

(i) Final Scheduled Volume:

Final Scheduled Volume (MU)	IEX			PXIL		
	September, 2020	August, 2020	% Change	September, 2020	August, 2020	% Change
Total	704.04	860.57	-18.19	-	-	NA
Minimum	12.57	15.47	-18.75	-	-	NA
Maximum	41.76	53.09	-21.34	-	-	NA
Average	23.47	27.76	-15.45	-	-	NA

- : No transaction happened

NA: Not Applicable

Table-5A

(ii) Daily Market Clearing Price (MCP):

Daily MCP (Rs/kWh)	IEX			PXIL		
	September, 2020	August, 2020	% Change	September, 2020	August, 2020	% Change
Minimum	1.80	1.66	8.43	NA	NA	NA
Maximum	3.38	2.98	13.42	NA	NA	NA
Average	2.52	2.27	11.01	NA	NA	NA

NA: Not Applicable

Table-5B

(iii) Area Clearing Price (ACP):

ACP (Rs/kWh)	IEX			PXIL		
	September, 2020	August, 2020	% Change	September, 2020	September, 2020	% Change
Minimum	0.10	0.10	0.00	-	-	NA
Maximum	6.00	5.21	15.16	-	-	NA

: No transaction happened

NA: Not Applicable

Table -5C

5. GREEN TERM AHEAD MARKET (GTAM):

CERC vide its order dated 17th August, 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 was 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 September, 2020 was **82.05 MU** with an Average MCP of **Rs 3.64 /kWh** and in Intraday contract, the same was **0.80 MU** with an Average MCP of **Rs 3.64 /kWh**. In Non- Solar Energy Segment in GTAM, no transaction of electricity happened in September, 2020. The Final Scheduled Volume and Price of electricity transacted in GTAM in IEX during August , 2020 has also been shown in Table below:

(i) Final Scheduled Volume:

Solar Energy Contract	Period	Final Scheduled Volume (MU)			
		Total	Minimum	Maximum	Average
Day Ahead Contingency	September, 2020	82.05	0.24	10.78	2.74
	August, 2020	2.93	0.01	0.35	0.27
	% Change	2,700.34	2,300.00	2,980.00	914.81
Intraday	September, 2020	0.80	0.20	0.40	0.27
	August, 2020	0.0021	0.0021	0.0021	0.0021
	% Change	37995.24	9423.81	18947.62	12757.14

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

Solar Energy Contract	Period	Prices (Rs/kWh)		
		Minimum	Maximum	Average
Day Ahead Contingency	September , 2020	3.35	3.80	3.64
	August , 2020	3.00	3.24	3.07
	% Change	11.67	17.28	18.57
Intraday	September , 2020	3.64	3.64	3.64
	August , 2020	3.00	3.00	3.00
	% Change	21.33	21.33	21.33

Table-6B

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

A regression analysis has been carried out on the Day Ahead Market data taken from IEX website. Also, data has been plotted in various graphs to observe patterns for each day of the September, 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 September, 2020.
- 6.3. The same relationship is visible from the analysis carried out from the plot in **Figure 1**.

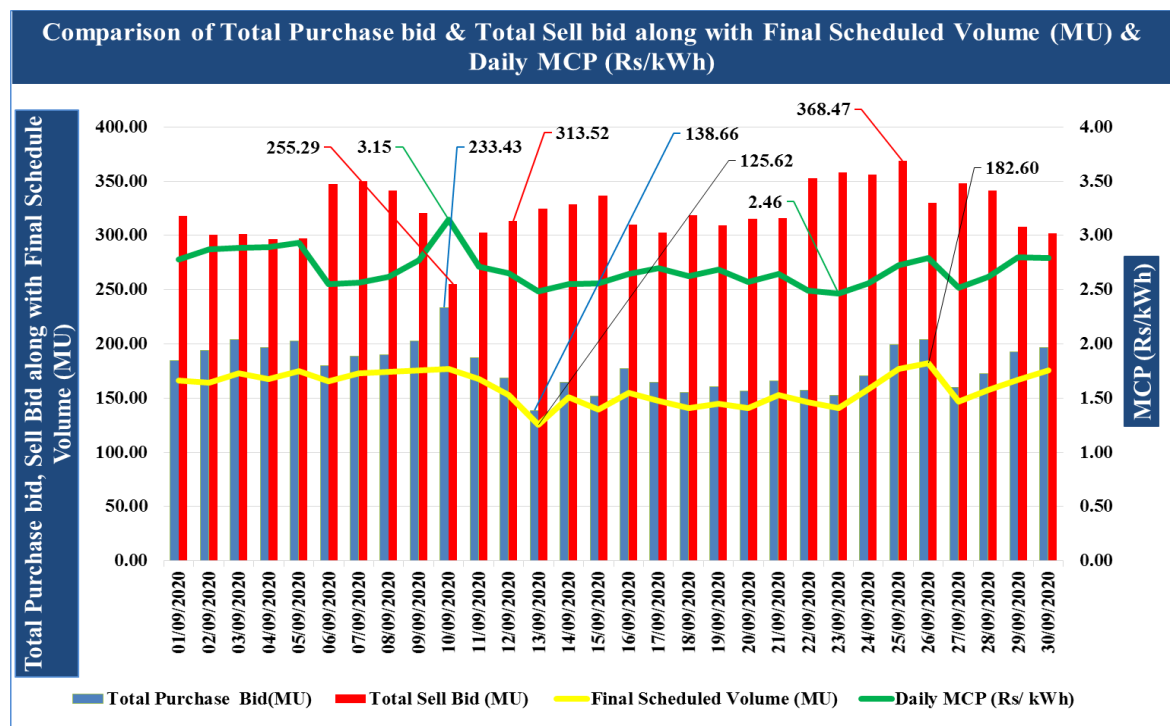


Figure -1

- 6.4. Invariably, the Final Scheduled Volume (MU) and the Daily MCP (Rs/kWh) showed decreasing trend on Sundays in the month of September, 2020 as the demand of electricity in the country was less compared to other days of week during the month [Figure 1].

- 6.5. A comparison of maximum, minimum, daily, non-peak time, peak time MCP in the month of September, 2020 is shown in **Figure -2**. The same are also tabulated in **Annexure III**.

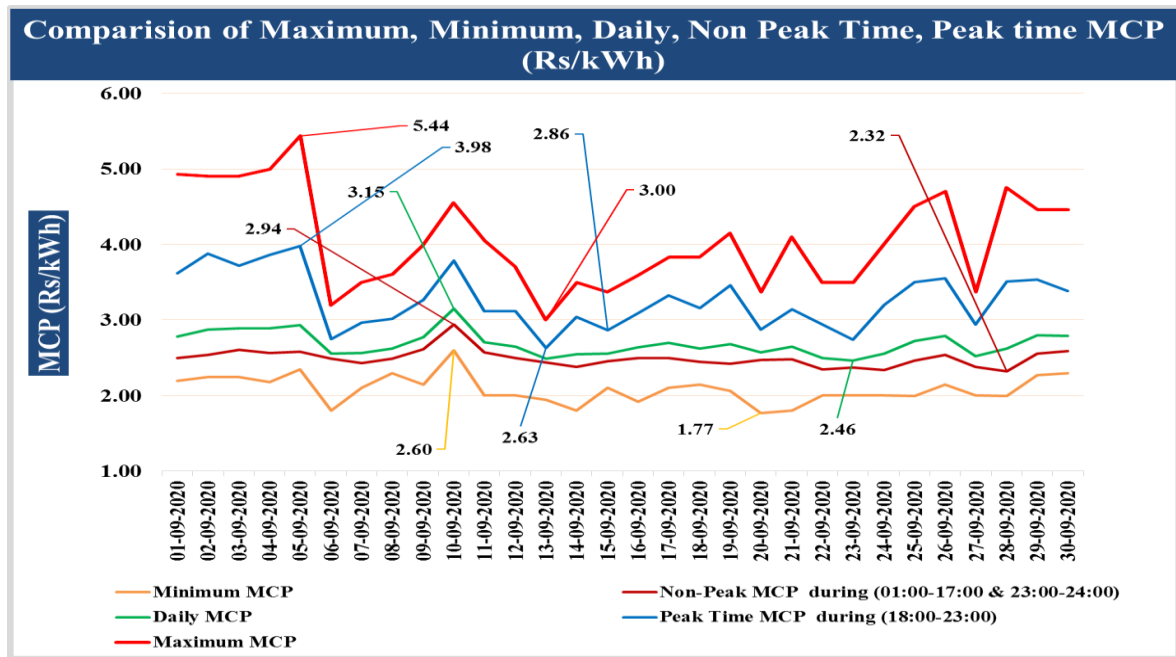


Figure -2

- 6.6. The Purchase Bids and the MCP discovered in each of the 15-minute time block during the month of September, 2020 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 **21 days** during the month, the maximum MCP occurred during the **time period 18:45-20:30** [**Annexure V**].
- 6.8. On **21 days** during the month, the maximum FSV occurred during the **time period 21:30-22:00** [**Annexure V**].
- 6.9. The maximum demand met during the month of September, 2020 in the country occurred on **18th September, 2020 at 176.57 GW**, which is **5.41%** more than the maximum demand occurred during **August, 2020 [i.e. 167.50 GW on 8th August, 2020]** and is **1.97 %** more than the maximum demand occurred during September, 2019 i.e. [**173.16 GW on 9th September, 2019**].
- 6.10. One nation One Price was observed for **all 30 days** in IEX, as there was no congestion in transmission system in IEX in September, 2020. In PXIL, there was congestion of **0.045 MU** on **5th September, 2020** in transmission system, so one nation one price was observed on 29 days in the month of September, 2020. In the month of August, 2020, one nation one Price was observed for **all 31 days** in IEX, as there was no congestion in transmission system in IEX. In PXIL also, there was no congestion in transmission system, so one nation one price was observed for **all 7 days** during which transaction happened (**25th to 31st August, 2020**). Similarly, in the month of September, 2019, there was congestion in transmission system for

12 days in IEX of **47.45 MU**, hence, one nation one price was observed for **18 days** on IEX. In PXIL, there was no congestion in transmission system in the month of September, 2019, so one nation one price was observed on all 11 days during which transaction happened (1st-3rd, 8th-9th, 11th-15th and 20th September, 2019).

- 6.11. There was no real time curtailment in IEX and PXIL during September, 2020. There was no real time curtailment in IEX and PXIL in August, 2020 also. In September, 2019 also, there was no real time curtailment happened in IEX and PXIL respectively.
- 6.12. The **top 10 sellers** on the power exchanges in DAM in the month of September, 2020 are **Teesta -3, Himachal Pradesh, Sembcorp Gayatri, Jaypee Nigrie, Adani Power STG2, Jindal Power, Odisha, Raipur Energen, Essar Power MP Ltd and Raigarh Energy Ltd.,** which constituted **55.68%** of the market volume. [Annexure VI]
- 6.13. The **top 10 purchasers** on the power exchanges in DAM in the month of September, 2020 are **Andhra Pradesh, Maharashtra, Gujarat, Uttar Pradesh, Tamil Nadu, Delhi, Telangana, Uttarakhand, Haryana and Punjab,** which constituted **82.83%** of the market volume. [Annexure VI]

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

- 7.1. Similar to the regression analysis carried out for Day Ahead Market, the regression analysis has been carried out for Real Time Market also wherein , 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. 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 September, 2020
- 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:

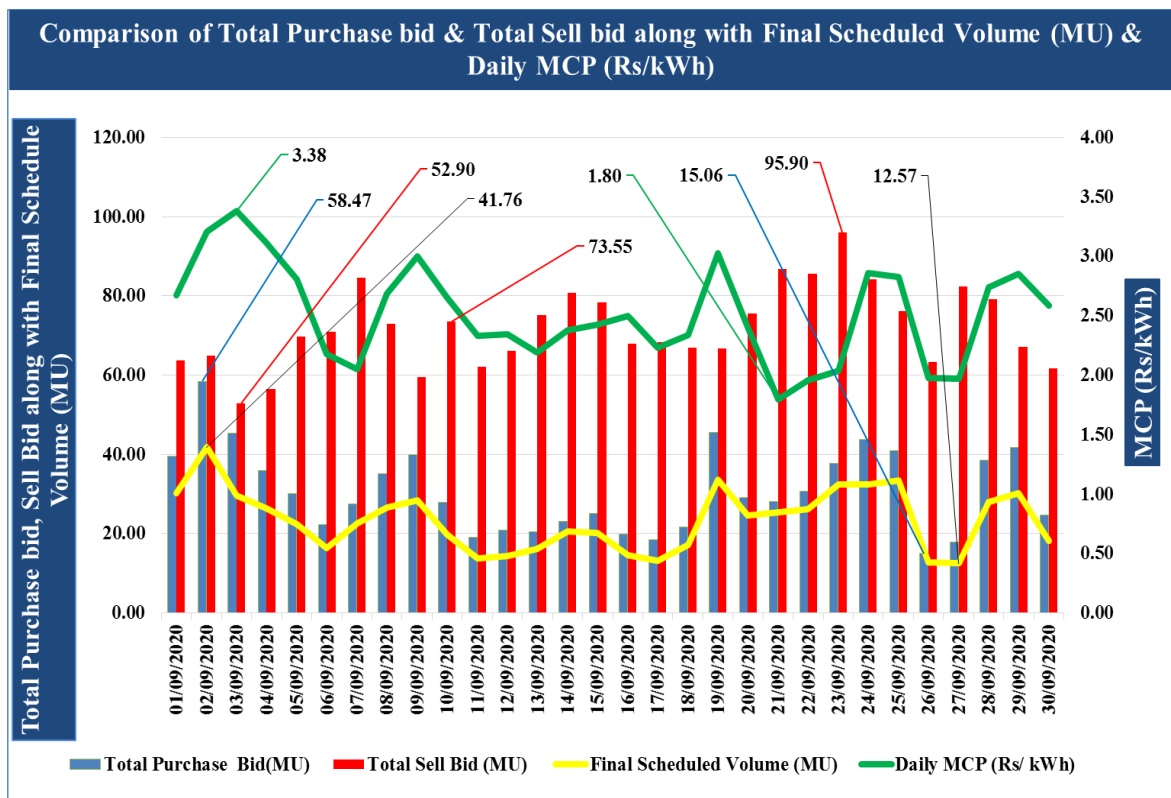


Figure-3

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.

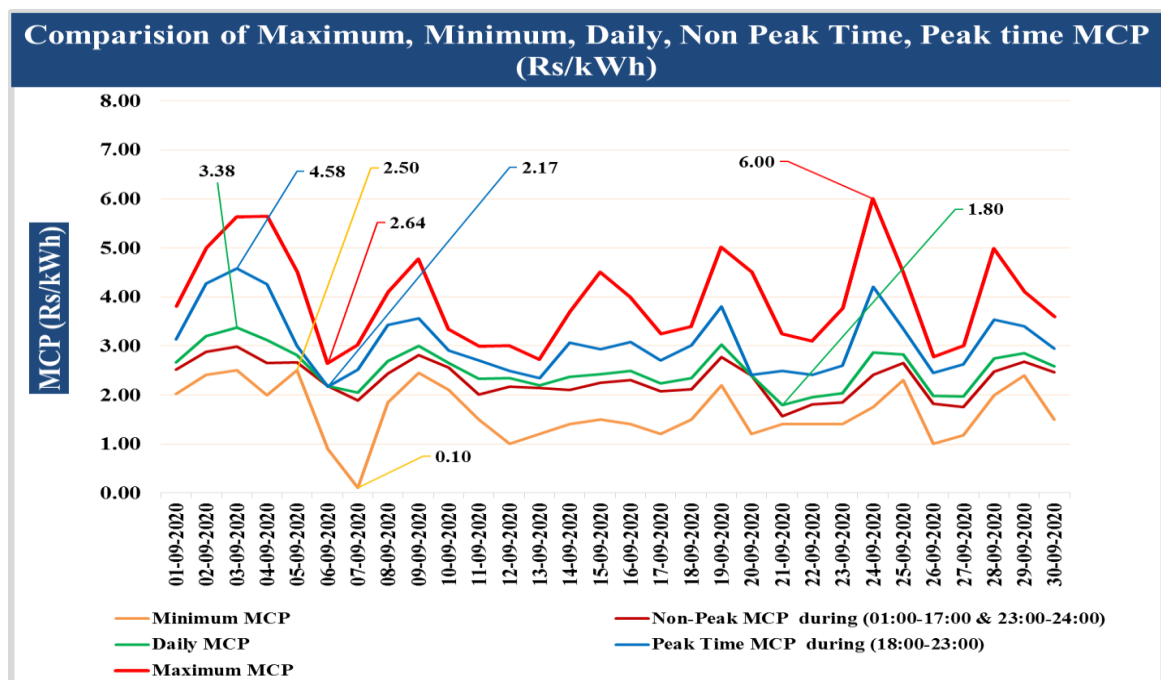


Figure-4

7.5. On 21 days during the month, the maximum MCP occurred during the time period 18:45-20:30. [Annexure IX].

- 7.6. There was **no** real time curtailment in IEX in Real Time Market during September, 2020, whereas, no transaction of electricity happened in PXIL during September, 2020. In August, 2020 also, there was no real time curtailment in IEX, whereas, no transaction of electricity happened in PXIL during August, 2020.
- 7.7. In the month of September, 2020, there was congestion of **0.54 MU** in transmission system on two days in IEX in Real Time Market. Hence, one nation one price was observed for **28 days** in IEX. Whereas, in PXIL, no transaction of electricity happened in September, 2020 in Real Time Market. In the month of August, 2020, there was no congestion in transmission system in IEX in Real Time Market, so, one nation one price was observed for all 31 days in IEX in Real Time Market. Whereas, no transaction of electricity happened in PXIL during the month of August, 2020 in Real Time Market.
- 7.8. The **top 10 sellers** on the power exchanges in RTM in the month of September, 2020 are **UT of J&K and Ladakh, Karnataka, Madhya Pradesh, Odisha, West Bengal, Kameng HEP, Uttar Pradesh, Neyveli New Thermal Power Project, NLC and Telangana**, which constituted **48.49%** of the market volume. [Annexure X]
- 7.9. The **top 10 purchasers** on the power exchanges in RTM in the month of September, 2020 are **Telangana, Maharashtra, Andhra Pradesh, West Bengal, Delhi, Assam, Rajasthan, Uttar Pradesh, Haryana, and Bihar**, which constituted **83.80 %** 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 September, 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	2.70	0	0
Total Quarter -II	July – September, 2020	13,752.06	74.30				
Total April - September, 2020		27,192.17	111.57			0	0

- : No Transaction happened

NA: Not Applicable

Annexure-II

Final Scheduled Volume in Term Ahead Market (TAM) for the months of April, 2020 to September, 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
Total April - September, 2020		1,167.44	1,372.51	2,539.95

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)
01/09/2020	2.52	2.57	2.44	3.62	2.50	4.93	2.20	2.78	166.01
02/09/2020	2.54	2.62	2.49	3.88	2.54	4.90	2.25	2.87	164.48
03/09/2020	2.60	2.66	2.59	3.72	2.61	4.90	2.25	2.89	172.68
04/09/2020	2.57	2.66	2.51	3.86	2.57	5.00	2.18	2.89	167.57
05/09/2020	2.67	2.59	2.48	3.98	2.58	5.44	2.35	2.93	174.84
06/09/2020	2.57	2.54	2.38	2.75	2.49	3.20	1.80	2.55	165.56
07/09/2020	2.36	2.51	2.46	2.96	2.43	3.50	2.10	2.56	172.80
08/09/2020	2.49	2.45	2.51	3.02	2.49	3.61	2.30	2.62	174.31
09/09/2020	2.54	2.63	2.67	3.27	2.61	3.99	2.15	2.77	175.81
10/09/2020	2.95	2.87	2.96	3.79	2.94	4.55	2.60	3.15	177.04
11/09/2020	2.50	2.57	2.65	3.12	2.57	4.05	2.00	2.71	167.72
12/09/2020	2.52	2.44	2.51	3.11	2.50	3.71	2.00	2.65	152.65
13/09/2020	2.47	2.43	2.41	2.63	2.44	3.00	1.94	2.49	125.62
14/09/2020	2.41	2.19	2.47	3.04	2.38	3.50	1.80	2.55	150.92
15/09/2020	2.47	2.39	2.47	2.86	2.45	3.37	2.10	2.56	139.46
16/09/2020	2.50	2.46	2.50	3.10	2.49	3.59	1.92	2.64	154.86
17/09/2020	2.56	2.40	2.49	3.33	2.49	3.83	2.11	2.70	147.76
18/09/2020	2.47	2.38	2.46	3.16	2.45	3.83	2.15	2.63	141.07
19/09/2020	2.44	2.38	2.44	3.46	2.42	4.15	2.06	2.68	144.75
20/09/2020	2.58	2.43	2.39	2.87	2.47	3.37	1.77	2.57	140.66
21/09/2020	2.50	2.39	2.51	3.14	2.48	4.10	1.80	2.64	152.72
22/09/2020	2.37	2.36	2.32	2.94	2.35	3.50	2.00	2.49	146.06
23/09/2020	2.35	2.39	2.39	2.74	2.37	3.50	2.00	2.46	141.16
24/09/2020	2.28	2.36	2.39	3.20	2.34	4.00	2.00	2.56	157.90
25/09/2020	2.42	2.48	2.50	3.50	2.47	4.50	2.00	2.72	177.06
26/09/2020	2.48	2.56	2.58	3.55	2.54	4.70	2.15	2.79	182.60
27/09/2020	2.39	2.40	2.36	2.94	2.38	3.37	2.00	2.52	146.95
28/09/2020	2.16	2.49	2.39	3.51	2.32	4.75	2.00	2.62	157.43
29/09/2020	2.53	2.53	2.59	3.53	2.55	4.46	2.27	2.80	167.02
30/09/2020	2.57	2.52	2.65	3.39	2.59	4.46	2.29	2.79	175.51
Maximum	2.95	2.87	2.96	3.98	2.94	5.44	2.60	3.15	182.60
Minimum	2.16	2.19	2.32	2.63	2.32	3.00	1.77	2.46	125.62
Average	2.49	2.49	2.50	3.27	2.49	4.06	2.08	2.69	159.37

MCP: Market Clearing Price (Rs/kWh)

FSV: Final Scheduled Volume (MU)

Comparison of MCP w.r.t. Purchase Bid for 2,880 Time Blocks during the month of September, 2020



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

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
01/09/2020	21:45 - 22:00	2.20	21:45 - 22:00	4.93	11:15 - 11:30	1.34	17:15 - 17:30	2.20
02/09/2020	06:45 - 07:00	2.25	21:45 - 22:00	4.90	03:00 - 03:15	1.24	03:00 - 03:15	2.25
03/09/2020	21:45 - 22:00	2.29	19:15 - 19:30	4.90	04:15 - 04:30	1.29	03:15 - 03:30	2.25
04/09/2020	21:45 - 22:00	2.41	19:15 - 19:30	5.00	04:15 - 04:30	1.33	13:15 - 13:30	2.18
05/09/2020	21:45 - 22:00	2.51	20:00 - 20:15	5.44	05:00 - 05:15	1.41	13:30 - 13:45	2.35
06/09/2020	00:00 - 00:15	2.31	20:45 - 21:00	3.20	17:15 - 17:30	1.18	17:15 - 17:30	1.80
07/09/2020	21:45 - 22:00	2.52	20:45 - 21:00	3.50	04:15 - 04:30	1.35	04:30 - 04:45	2.10
08/09/2020	21:45 - 22:00	2.43	21:45 - 22:00	3.61	04:15 - 04:30	1.33	05:15 - 05:30	2.30
09/09/2020	06:45 - 07:00	2.21	20:15 - 20:30	3.99	02:45 - 03:00	1.42	01:45 - 02:00	2.15
10/09/2020	00:00 - 00:15	2.18	21:00 - 21:15	4.55	04:45 - 05:00	1.56	04:15 - 04:30	2.60
11/09/2020	21:30 - 21:45	2.26	19:30 - 19:45	4.05	04:45 - 05:00	1.32	18:15 - 18:30	2.00
12/09/2020	21:45 - 22:00	2.56	19:45 - 20:00	3.71	09:00 - 09:15	1.14	18:00 - 18:15	2.00
13/09/2020	21:30 - 21:45	2.15	00:00 - 00:15	3.00	09:00 - 09:15	0.98	19:00 - 19:15	1.94
14/09/2020	21:45 - 22:00	2.50	19:30 - 19:45	3.50	05:45 - 06:00	1.04	05:45 - 06:00	1.80
15/09/2020	21:45 - 22:00	2.23	21:30 - 21:45	3.37	05:45 - 06:00	1.03	05:15 - 05:30	2.10
16/09/2020	21:45 - 22:00	2.49	19:45 - 20:00	3.59	05:30 - 05:45	1.12	18:00 - 18:15	1.92
17/09/2020	21:30 - 21:45	2.40	20:45 - 21:00	3.83	08:15 - 08:30	1.06	08:45 - 09:00	2.11
18/09/2020	21:30 - 21:45	2.25	19:00 - 19:15	3.83	08:00 - 08:15	1.07	18:00 - 18:15	2.15
19/09/2020	21:45 - 22:00	2.42	20:00 - 20:15	4.15	05:45 - 06:00	1.07	09:00 - 09:15	2.06
20/09/2020	21:30 - 21:45	2.12	19:30 - 19:45	3.37	09:00 - 09:15	1.05	18:00 - 18:15	1.77
21/09/2020	21:45 - 22:00	2.33	18:45 - 19:00	4.10	05:45 - 06:00	1.12	18:00 - 18:15	1.80
22/09/2020	21:45 - 22:00	2.22	18:45 - 19:00	3.50	04:45 - 05:00	1.15	23:45 - 24:00	2.00
23/09/2020	18:45 - 19:00	2.00	19:15 - 19:30	3.50	03:45 - 04:00	1.09	23:00 - 23:15	2.00
24/09/2020	18:45 - 19:00	2.58	19:00 - 19:15	4.00	03:45 - 04:00	1.07	01:45 - 02:00	2.00
25/09/2020	18:45 - 19:00	2.76	19:00 - 19:15	4.50	02:45 - 03:00	1.14	00:00 - 00:15	2.00
26/09/2020	21:30 - 21:45	2.48	18:45 - 19:00	4.70	03:30 - 03:45	1.20	03:45 - 04:00	2.15
27/09/2020	21:45 - 22:00	2.45	19:15 - 19:30	3.37	05:45 - 06:00	1.10	13:15 - 13:30	2.00
28/09/2020	20:15 - 20:30	2.48	19:00 - 19:15	4.75	03:00 - 03:15	1.07	03:00 - 03:15	2.00
29/09/2020	21:30 - 21:45	2.48	19:15 - 19:30	4.46	04:15 - 04:30	1.20	05:45 - 06:00	2.27
30/09/2020	20:45 - 21:00	2.41	19:15 - 19:30	4.46	04:45 - 05:00	1.21	07:45 - 08:00	2.29

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 September, 2020**

Entity Name	Sell		Entity Name	Purchase	
	(MU)	Percent (%)		(MU)	Percent (%)
Teesta -3	608.27	12.56%	Andhra	634.71	13.11%
Himachal Pradesh	350.52	7.24%	Maharashtra	580.12	11.98%
Sembcorp Gayatri	285.24	5.89%	Gujarat	486.86	10.06%
Jaypee Nigrie	250.24	5.17%	Uttar Pradesh	460.58	9.51%
Adani Power STG2	232.93	4.81%	Tamil Nadu	382.08	7.89%
Jindal Power	232.70	4.81%	Delhi	374.07	7.73%
Odisha	221.49	4.58%	Telangana	330.37	6.82%
Raipur Energen	194.61	4.02%	Uttarakhand	292.90	6.05%
Essar Power MP Ltd	183.91	3.80%	Haryana	250.54	5.18%
Raigarh Energy Ltd.	135.77	2.80%	Punjab	217.87	4.50%
Total	2695.67	55.68%	Total	4010.10	82.83%
Total Volume in PXs	4841.19		Total Volume	4841.19	

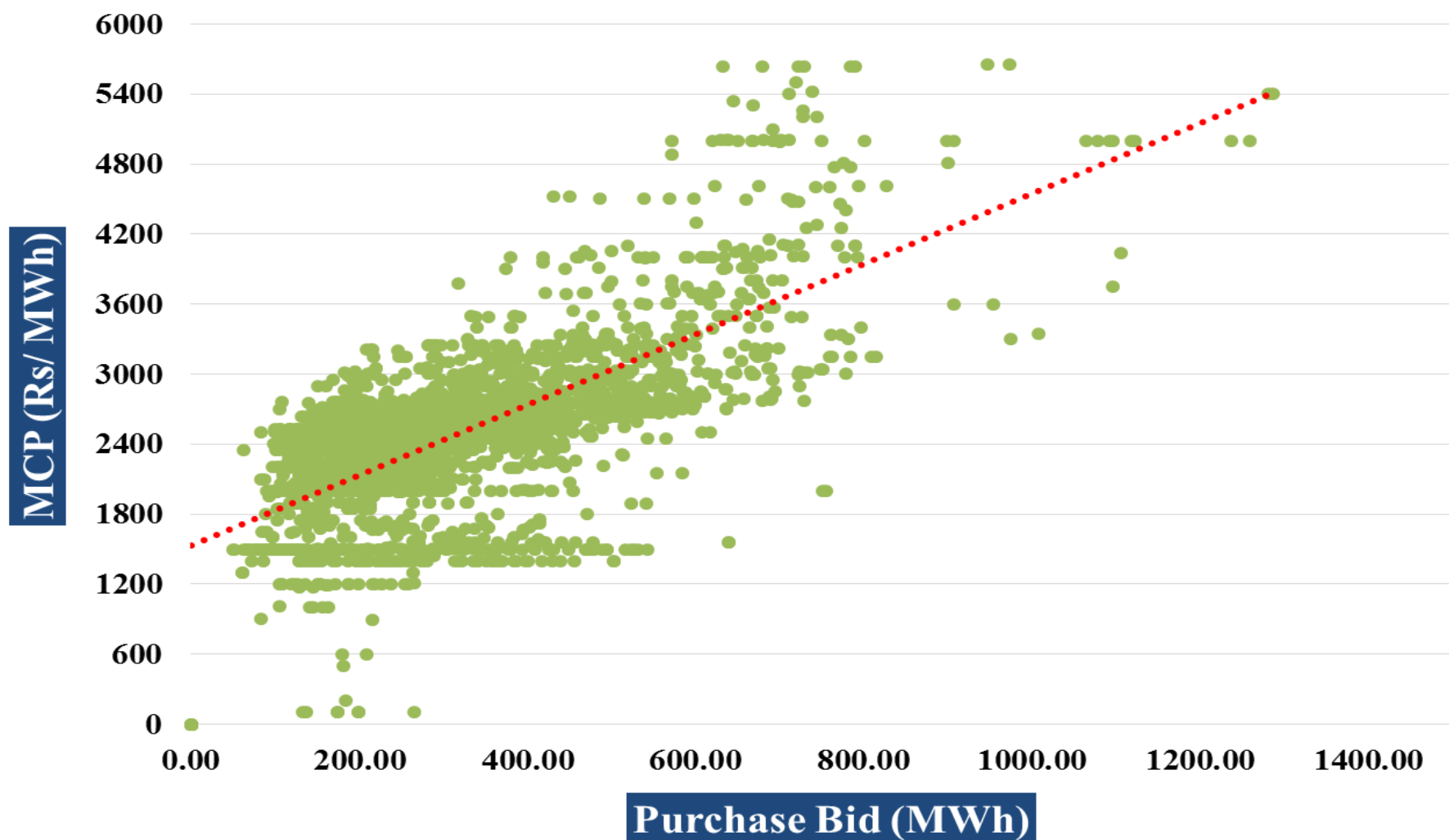
Annexure-VII**Peak Time MCP, Non-Peak MCP, Maximum MCP, Minimum MCP, Average MCP and Final Scheduled Volume (MU) in RTM**

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)
01/09/2020	2.59	2.27	2.58	3.13	2.51	3.80	2.02	2.67	30.17
02/09/2020	2.74	3.03	2.94	4.27	2.88	5.00	2.40	3.21	41.76
03/09/2020	3.30	2.78	2.78	4.58	2.98	5.64	2.50	3.38	29.56
04/09/2020	2.80	2.54	2.75	4.26	2.64	5.64	2.00	3.11	26.38
05/09/2020	2.67	2.63	2.67	3.00	2.66	4.50	2.50	2.81	22.36
06/09/2020	2.26	2.21	2.09	2.17	2.18	2.64	0.90	2.18	16.40
07/09/2020	1.79	0.80	2.62	2.52	1.89	3.03	0.10	2.05	22.66
08/09/2020	2.26	2.22	2.73	3.43	2.44	4.11	1.85	2.68	26.64
09/09/2020	2.67	2.68	3.04	3.56	2.82	4.78	2.45	3.00	28.32
10/09/2020	2.55	2.48	2.62	2.91	2.56	3.34	2.10	2.65	19.80
11/09/2020	2.38	1.99	2.08	2.71	2.01	3.00	1.50	2.33	13.84
12/09/2020	2.52	2.21	2.08	2.49	2.16	3.00	1.01	2.34	14.32
13/09/2020	2.58	2.29	1.61	2.35	2.14	2.72	1.20	2.19	16.23
14/09/2020	1.78	2.24	2.51	3.07	2.10	3.70	1.40	2.37	20.50
15/09/2020	2.32	2.51	2.04	2.93	2.25	4.50	1.50	2.42	20.19
16/09/2020	2.36	2.48	2.14	3.08	2.30	4.00	1.40	2.50	14.58
17/09/2020	2.24	2.32	1.76	2.71	2.07	3.25	1.20	2.23	13.19
18/09/2020	2.02	1.98	2.29	3.01	2.12	3.40	1.50	2.34	17.13
19/09/2020	2.82	2.78	2.71	3.80	2.77	5.01	2.20	3.03	33.64
20/09/2020	2.96	2.21	1.95	2.41	2.40	4.50	1.20	2.40	24.55
21/09/2020	1.59	1.76	1.44	2.49	1.57	3.25	1.40	1.80	25.46
22/09/2020	1.60	2.43	1.66	2.41	1.81	3.10	1.40	1.96	26.15
23/09/2020	1.70	2.13	1.84	2.60	1.85	3.78	1.40	2.04	32.45
24/09/2020	2.46	2.20	2.49	4.21	2.41	6.00	1.75	2.86	32.51
25/09/2020	2.48	2.71	2.78	3.34	2.65	4.52	2.30	2.82	33.37
26/09/2020	1.64	1.86	1.96	2.45	1.82	2.78	1.00	1.97	12.86
27/09/2020	2.11	1.69	1.43	2.62	1.76	3.00	1.17	1.97	12.57
28/09/2020	2.46	2.43	2.51	3.54	2.47	4.99	2.00	2.74	28.03
29/09/2020	2.71	2.59	2.68	3.40	2.67	4.10	2.40	2.85	30.24
30/09/2020	2.54	2.43	2.41	2.95	2.47	3.60	1.50	2.59	18.19
Maximum	3.30	3.03	3.04	4.58	2.98	6.00	2.50	3.38	41.76
Minimum	1.59	0.80	1.43	2.17	1.57	2.64	0.10	1.80	12.57
Average	2.36	2.30	2.31	3.08	2.31	3.96	1.64	2.52	23.47

MCP: Market Clearing Price (Rs/kWh)

FSV: Final Scheduled Volume (MU)

Comparison of MCP w.r.t. Purchase Bid for 2,880 Time Blocks during the month of September, 2020



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

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
01/09/2020	21:45 - 22:00	0.47	19:45 - 20:00	3.80	22:45 - 23:00	0.19	07:30 - 07:45	2.02
02/09/2020	23:00 - 23:15	0.80	20:45 - 21:00	5.00	05:45 - 06:00	0.19	02:45 - 03:00	2.40
03/09/2020	22:45 - 23:00	0.52	21:45 - 22:00	5.64	09:00 - 09:15	0.10	08:30 - 08:45	2.50
04/09/2020	21:45 - 22:00	0.52	21:00 - 21:15	5.64	08:00 - 08:15	0.11	08:00 - 08:15	2.00
05/09/2020	16:45 - 17:00	0.40	00:00 - 00:15	4.50	08:45 - 09:00	0.10	04:45 - 05:00	2.50
06/09/2020	15:30 - 15:45	0.29	19:15 - 19:30	2.64	13:30 - 13:45	0.08	00:45 - 01:00	0.90
07/09/2020	14:15 - 14:30	0.54	16:30 - 16:45	3.03	17:15 - 17:30	0.10	07:15 - 07:30	0.10
08/09/2020	22:15 - 22:30	0.62	22:00 - 22:15	4.11	07:15 - 07:30	0.08	06:00 - 06:15	1.85
09/09/2020	22:15 - 22:30	0.53	19:45 - 20:00	4.78	06:00 - 06:15	0.12	04:30 - 04:45	2.45
10/09/2020	19:45 - 20:00	0.54	19:45 - 20:00	3.34	05:45 - 06:00	0.09	05:15 - 05:30	2.10
11/09/2020	22:45 - 23:00	0.31	20:15 - 20:30	3.00	06:45 - 07:00	0.04	06:00 - 06:15	1.50
12/09/2020	23:45 - 24:00	0.24	20:00 - 20:15	3.00	09:00 - 09:15	0.07	11:15 - 11:30	1.01
13/09/2020	01:45 - 02:00	0.30	19:45 - 20:00	2.72	10:30 - 10:45	0.09	12:00 - 12:15	1.20
14/09/2020	14:45 - 15:00	0.42	19:30 - 19:45	3.70	07:15 - 07:30	0.07	04:45 - 05:00	1.40
15/09/2020	18:30 - 18:45	0.45	19:00 - 19:15	4.50	23:15 - 23:30	0.09	13:30 - 13:45	1.50
16/09/2020	19:15 - 19:30	0.33	19:30 - 19:45	4.00	12:45 - 13:00	0.07	12:45 - 13:00	1.40
17/09/2020	19:30 - 19:45	0.24	19:30 - 19:45	3.25	06:45 - 07:00	0.08	12:00 - 12:15	1.20
18/09/2020	23:30 - 23:45	0.40	20:45 - 21:00	3.40	09:00 - 09:15	0.07	09:00 - 09:15	1.50
19/09/2020	08:00 - 08:15	0.55	20:00 - 20:15	5.01	18:45 - 19:00	0.14	17:30 - 17:45	2.20
20/09/2020	01:15 - 01:30	0.47	00:00 - 00:15	4.50	17:15 - 17:30	0.12	17:00 - 17:15	1.20
21/09/2020	11:30 - 11:45	0.48	19:00 - 19:15	3.25	00:45 - 01:00	0.14	13:00 - 13:15	1.40
22/09/2020	14:45 - 15:00	0.39	19:00 - 19:15	3.10	18:30 - 18:45	0.13	13:15 - 13:30	1.40
23/09/2020	12:00 - 12:15	0.54	18:45 - 19:00	3.78	23:15 - 23:30	0.08	01:15 - 01:30	1.40
24/09/2020	16:45 - 17:00	0.64	19:30 - 19:45	6.00	09:00 - 09:15	0.11	10:45 - 11:00	1.75
25/09/2020	11:00 - 11:15	0.61	19:45 - 20:00	4.52	23:45 - 24:00	0.16	05:45 - 06:00	2.30
26/09/2020	17:45 - 18:00	0.19	19:30 - 19:45	2.78	22:15 - 22:30	0.07	23:15 - 23:30	1.00
27/09/2020	14:45 - 15:00	0.26	22:30 - 22:45	3.00	09:45 - 10:00	0.06	13:30 - 13:45	1.17
28/09/2020	23:15 - 23:30	0.60	19:00 - 19:15	4.99	06:00 - 06:15	0.11	06:00 - 06:15	2.00
29/09/2020	22:30 - 22:45	0.50	19:15 - 19:30	4.10	08:15 - 08:30	0.14	13:45 - 14:00	2.40
30/09/2020	21:00 - 21:15	0.35	19:30 - 19:45	3.60	05:45 - 06:00	0.11	09:45 - 10:00	1.50

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 September, 2020**

Entity Name	Sell		Entity Name	Purchase	
	(MU)	Percent (%)		(MU)	Percent (%)
J&K	56.56	8.03%	Telangana	101.01	14.35%
Karnataka	55.99	7.95%	Maharashtra	91.56	13.00%
Madhya Pradesh	40.47	5.75%	Andhra Pradesh	89.34	12.69%
Orissa	35.49	5.04%	West Bengal	74.79	10.62%
West Bengal	30.67	4.36%	Delhi	57.52	8.17%
Kameng HEP	27.51	3.91%	Assam	49.21	6.99%
Uttar Pradesh	26.91	3.82%	Rajasthan	35.45	5.04%
Neyveli New Thermal	24.18	3.43%	Uttar Pradesh	32.82	4.66%
NLC	22.27	3.16%	Haryana	30.40	4.32%
Telangana	21.36	3.03%	Bihar	27.91	3.96%
Total	341.40	48.49%	Total	590.00	83.80%
Total Volume in PXs	704.05		Total Volume in	704.05	

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.