



मार्च, 2020 मासिक मार्केट मॉनिटरिंग रिपोर्ट

Monthly Market Monitoring Report

March, 2020



भारत सरकार/ Government of India

विद्युत मंत्रालय/ Ministry of Power

केन्द्रीय विद्युत प्राधिकरण/ Central Electricity Authority

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TABLE OF CONTENTS

S.N.	Title	Page
1.	Day Ahead Market (DAM)	1
2.	Summary of the market in the power exchanges	1
3.	Term Ahead Market	4
4.	Analysis of movement of prices observed in DAM during March, 2020	5

TABLES

1.	Table: 1 MCP of IEX and PXIL for March, 2020 vs February, 2020	2
2.	Table: 2 MCP of IEX and PXIL for March, 2020 vs March, 2019	2
3.	Table: 3 ACP of IEX for March, 2020 vs February, 2020	2
4.	Table: 4 ACP of IEX for March, 2020 vs March, 2019	2
5.	Table: 5 Scheduled Volume of IEX and PXIL for March, 2020 vs February, 2020	3
6.	Table: 6 Scheduled Volume of IEX and PXIL for March, 2020 vs March, 2019	3

FIGURES

1.	Figure: 1 Comparison of Total Purchase, Sell bids along with FSV and Daily MCP	5
2.	Figure: 2 Comparison of Maximum, Minimum, Daily, Non Peak Time, Peak Time MCP (Rs/kWh)	6

ANNEXURES

1.	Annexure-I: Final Scheduled Volume and the Average MCP in Day Ahead Market (DAM) for the months of April, 2019 to March, 2020 of IEX and PXIL	8
2.	Annexure-II: Final Scheduled Volume in Term Ahead Market (TAM) for the months of April, 2019 to March, 2020 of IEX and PXIL	9
3.	Annexure-III: All MCP vis: Peak Time MCP, Non-Peak MCP, Maximum MCP, Minimum MCP, Average MCP and Final Schedule Volume (MU)	10
4.	Annexure-IV: Comparison of MCP w.r.t. Purchase Bid for 2,784 Time Blocks during the month of March, 2020	11
5.	Annexure-V: Max. FSV, Min FSV, Max MCP and Min MCP w.r.t. all Time blocks	12
6.	Annexure-VI: Top Ten Entity (Sellers and Purchaser) during the month of March, 2020	13

APPENDIX

1.	Appendix-I: Definitions/ Terminologies used in the Report	14
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REPORT FOR MONTH: MARCH, 2020

OVERVIEW OF ELECTRICITY TRANSACTIONS ON POWEREXCHANGES IN INDIA

1. DAY AHEAD MARKET (DAM)

- 1.1. The total volume of electricity transacted on both the power exchanges, viz., IEX and PXIL in the Day Ahead Market (DAM) in the month of March, 2020 is **3971.24 MU**. The total energy supplied in the country during the month of March, 2020 is **98,404 MU (Provisional)**. The volume of electricity transacted on the power exchanges in DAM represents 4.04 % of the total energy supplied in the country. The total volume of electricity transacted in DAM during February, 2020 was **4,289.43 MU** which was 4.14 % of the total energy supplied in the country during February, 2020 [**103,610 MU**]. Similarly, the total volume of electricity transacted in DAM during March, 2019 was **3,366.23MU** which was 3.11% of the total energy supplied in the country during March, 2019 [**108,355 MU**].
- 1.2. The volume of electricity transacted on IEX during March, 2020 is 3,971.24 MU, whereas no transaction happened on PXIL during March, 2020. The volume of electricity transacted on IEX and PXIL during February, 2020 was 4,289.15 MU and 0.28 MU, respectively, which means that the total volume transacted on IEX was 99.99 % of the total volume on the power exchanges. Similarly, the total volume of electricity transacted during March, 2019 on IEX and PXIL was 3,356.08 MU and 10.15 MU, respectively, which means that the total volume transacted on IEX was 99.70 % of the total volume on the power exchanges.
- 1.3. The Average Market Clearing Price (MCP) on IEX during the month of March, 2020 is Rs 2.46/kWh, which shows a decline of 15.46 % and 21.15% when compared with average MCP's for the month of February, 2020 and March, 2019, which were Rs 2.91/kWh and Rs 3.12/kWh, respectively. On PXIL, there is no transaction happened during March, 2020, whereas the Average MCP during February, 2020 and March, 2019 were Rs 3.14/kWh and Rs 3.74/kWh, respectively.

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

- 2.1. A comparison of the Minimum, Maximum and Average of daily MCP during the months of March, 2020 with that of February, 2020 and March, 2019 are given below:

(a) March, 2020 vis- a –vis February, 2020

Daily MCP (Rs/kWh)	IEX			PXIL		
	March, 2020	February, 2020	% Change	March, 2020	February, 2020	% Change
Minimum	1.92	2.56	-25.00	NA	2.72	-
Maximum	2.92	3.15	-7.30	NA	3.65	-
Average	2.46	2.91	-15.46	NA	3.14	-

NA: Not Applicable (as no transaction happened on PXIL during March, 2020)

Table: 1**(b) March, 2020 vis- a –vis March, 2019**

Daily MCP (Rs/kWh)	IEX			PXIL		
	March, 2020	March, 2019	% Change	March, 2020	March, 2019	% Change
Minimum	1.92	2.62	-26.72	NA	3.55	-
Maximum	2.92	3.84	-23.96	NA	4.24	-
Average	2.46	3.12	-21.15	NA	3.74	-

NA: Not Applicable (as no transaction happened on PXIL during March, 2020)

Table: 2

- 2.2. The maximum Area Clearing Price (ACP) of **Rs 4.99/kWh** in IEX was observed in all three bid areas of southern region during the time block 07:45-08:00 Hrs on 6th March, 2020. As there was congestion in transmission system, the MCP for this time-block was **Rs 3.15/kWh**. However, the Daily MCP on pan India basis on 6th March, 2020 was **Rs 2.61/kWh**.
- 2.3. The minimum ACP of **Rs 0.60/kWh** in IEX was observed in all 13 regions during the time block 18:00-18:15 Hrs on **25th March, 2020**. As there was **no** congestion in transmission system on that day, the MCP for this time-block was also **Rs 0.60/kWh**. However, the Daily MCP on pan India basis on 25th March, 2020 was **Rs 1.95/kWh**.
- 2.4. A comparison of the Minimum and Maximum ACP in IEX during the months of March, 2020 with that of February, 2020 and March, 2019 are given below:

(a) March, 2020 vis-a-vis February, 2020

ACP (Rs/kWh)	IEX		
	March, 2020	February, 2020	% Change
Minimum	0.60	0.99	-39.39
Maximum	4.99	5.00	-0.20

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

ACP (Rs/kWh)	IEX		
	March, 2020	March, 2019	% Change
Minimum	0.60	1.80	-66.67
Maximum	4.99	10.17	-50.93

Table: 4

- 2.5. A comparison of a Daily Minimum, Maximum and Average Scheduled Volume of electricity transacted on IEX and PXIL during the month of March, 2020 with that of February, 2020 and March, 2019 are given below:

(a) March 2020 vis a vis February, 2020

Scheduled Volume (MU)	IEX			PXIL		
	March, 2020	February, 2020	% Change	March, 2020 [©]	February, 2020	% Change
Minimum	77.55	126.54	-38.72	-	0.013	-
Maximum	175.71	163.19	7.67	-	0.029	-
Average	128.10	147.90	-13.39	-	0.026	-

©: No Transaction happened on PXIL during March, 2020

Table: 5

(b) March 2020 vis a vis March, 2019

Scheduled Volume (MU)	IEX			PXIL		
	March, 2020	March, 2019	% Change	March, 2020 ^ψ	March, 2019	% Change
Minimum	77.55	80.58	-3.76	-	0.11	-
Maximum	175.71	136.15	29.06	-	2.59	-
Average	128.10	108.26	18.33	-	0.85	-

ψ: No Transaction happened on PXIL during March, 2020

Table: 6

- 2.6. The total volume of electricity transacted in DAM on both the power exchanges during the period April, 2019 to March, 2020, was 49,159.02 MU. The same was 50,149.60 MU during the period April, 2018 to March, 2019, which shows a decline of 1.97%.
- 2.7. The total volume of electricity transacted in DAM during Quarter-I (April – June, 2019) of FY 2019-20 on both the PXs was **12,017.58 MU**. The same was **12,964.55 MU** during Quarter-II (July – September, 2019), which showed an increase of 7.88 % as compared to Quarter-I. Whereas, during the Quarter-III (October – December, 2019) the total volume of electricity transacted on both PXs was **11,124.34 MU**, which showed a decrease of 14.19 % and 7.43 % as compared to Quarter-II and Quarter-I, respectively. Further, during the Quarter-IV (January – March, 2020), total volume of electricity transacted on both PXs is **13,052.55 MU**, these shows an increase of **17.33 %**, **0.68 %** and **8.61 %** as compared to Quarter-III, Quarter-II and Quarter-I, respectively. The Quarterly comparison of Final Scheduled Volume and the Average

MCP for the period of April, 2019 to March, 2020 of IEX and PXIL is given at **Annexure-I**.

- 2.8. The cumulative real time curtailment during Quarter-I was 8.217 MU and the same was 4.459 MU during Quarter-II. There was **no** real time curtailment during Quarter-III. Further, there was cumulative real time curtailment of 1.038 MU during Quarter-IV. The Quarterly comparison of Real Time Curtailment for the period of April, 2019 to March, 2020 of IEX and PXIL is also given at **Annexure-I**

3. TERM AHEAD MARKET (TAM)

- 3.1. The total volume of electricity transacted on both the power exchanges in Term Ahead Market in March, 2020 was **382.50 MU** (i.e. 363.59 MU on IEX and 18.91 MU on PXIL), which means that the volume transacted on IEX was 95.06 % and PXIL was 4.94 % of total volume transacted in Term Ahead Market.
- 3.2. The total volume of electricity transacted on both the power exchanges in February, 2020 was **252.40 MU** (i.e. 222.93 MU on IEX and 29.47 MU on PXIL), which means that the volume transacted on IEX was 88.32% and PXIL was 11.68 % of the total volume transacted in Term Ahead Market.
- 3.3. Similarly, the total volume of electricity transacted during March, 2019 in Term Ahead Market on both the power exchanges was **667.91 MU** (i.e. 218.46 MU on IEX and 449.45 MU on PXIL), which means that the volume transacted on IEX was 32.71 % and PXIL was 67.29% of the total volume transacted in Term Ahead Market. This shows an increase of 51.55 % in TAM during March, 2020 as compared to February, 2020 and a decrease of 42.73 % as compared to March, 2019.
- 3.4. With respect to the total energy supplied during the month of March, 2020 in the country, the volume of electricity traded on the power exchanges in TAM represents 0.39 % of the total energy supplied. The same was 0.24 % in February, 2020 and 0.62 % in March, 2019.
- 3.5. The Total Volume of electricity transacted on both the power exchanges in TAM during the period, April, 2019 to March, 2020 was 7,432.32MU. The same was 3363.33 MU during the same period April, 2018 to March, 2019, which shows an increase of 120.98 %.
- 3.6. The total volume of electricity transacted in TAM during Quarter-I (April – June, 2019) of FY 2019-20 on both PXs was **1,584.47 MU**. The same was **2881.99 MU** during Quarter-II (July – September, 2019), which showed an increase of 81.89 % as compared to Quarter-I. During the Quarter-III (October – December, 2019), the total volume of electricity transacted on both PXs was **2,031.96 MU**, which showed a decrease of 29.49

% and an increase of 28.24 % as compared to Quarter-II and Quarter-I, respectively. During the Quarter-IV (January – March, 2020), total volume of electricity transacted on both PXs is **933.90 MU**, this shows a decrease of **54.04 %**, **67.60 %** and **41.06 %** as compared to Quarter-III, Quarter-II and Quarter-I, respectively. The Quarterly comparison of Final Scheduled Volume for the months of April, 2019 to March, 2020 of IEX and PXIL are given at **Annexure-II**.

4. ANALYSIS OF MOVEMENT OF PRICES OBSERVED IN DAM DURING MARCH, 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 March, 2020 month. The observations made are as under:

- 4.1 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.
- 4.2 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 was only the total purchase 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 0.31.
- 4.3 The same relationship is visible from the analysis carried out from the plot in **Figure 1**.

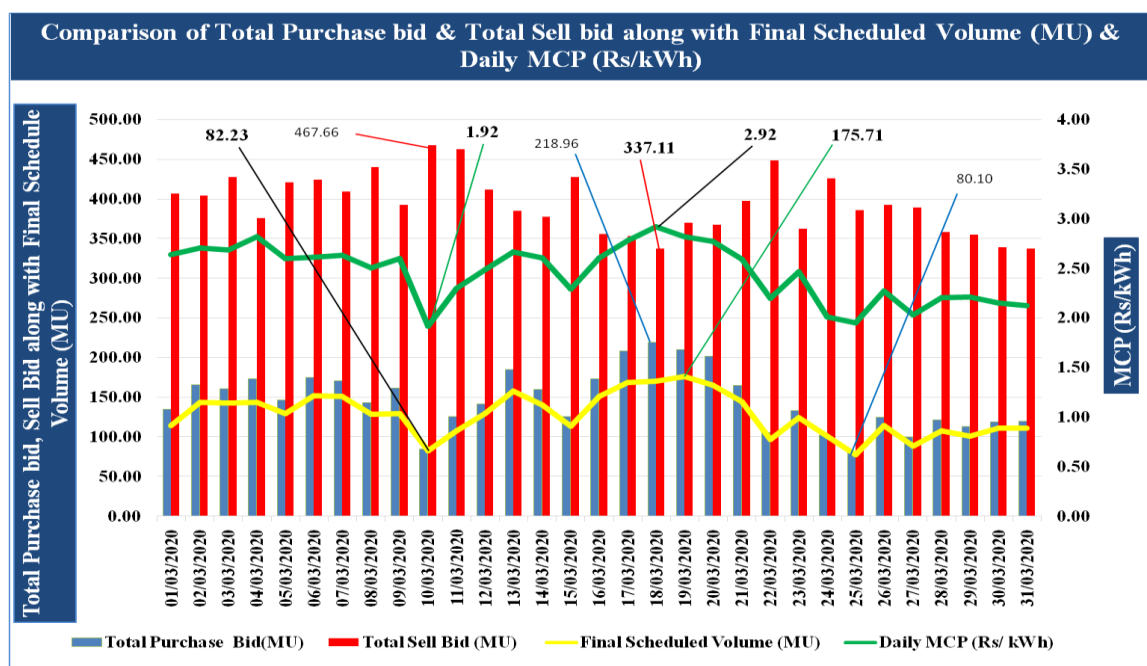


Figure -1

- 4.4 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 [Figure 1].
- 4.5 On account of Holi festival on 10th March, 2020, the demand was less as compared to other days of the month. Further, it was observed that the purchase bid was minimum on 25th March, 2020, which was the first day of 21 days lockdown, from 25th March, 2020 to 14th April, 2020 announced by the Government of India due to COVID-19 pandemic.
- 4.6 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.

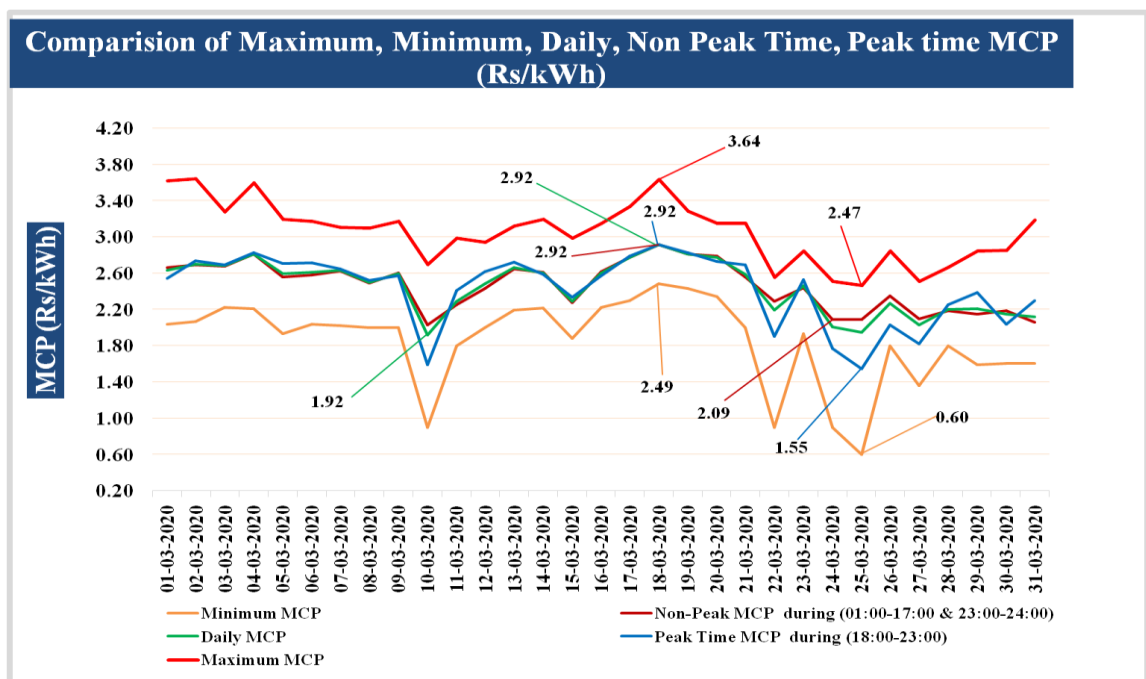


Figure -2

- 4.7 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 4.1 and 4.2 above.
- 4.8 On **28 days** during the month, the maximum FSV occurred during the **time period 07:15-09:00** [Annexure V].
- 4.9 On **24 days** during the month, the minimum FSV occurred during the **time period 22:00 – 23:00** [Annexure V].
- 4.10 On **16 days** during the month, the maximum MCP occurred during the **time period 07:15 – 08:30** [Annexure V].
- 4.11 On **13 days** during the month, the minimum MCP occurred during the **time period 03:15-04:15**. Also, on **12 days** during the month, the minimum MCP occurred during the **time period 17:30-19:00** [Annexure V].

- 4.12 The maximum demand met during the month of March, 2020 in the country occurred on **3rd March, 2020 at 170.17 GW**, which is 3.63 % less than the maximum demand occurred during **February, 2020 [i.e. 176.58 GW on 18th February, 2020]** and is 0.84 % higher than the maximum demand occurred during March, 2019 i.e. **[168.75 GW on 29th March, 2019]**.
- 4.13 One nation One Price was observed for **24 days** during the month, as there was transmission congestion of 13.52 MU on **7 days** (i.e. 4th, 5th, 6th, 19th, 20th, 21st and 23rd March, 2020) in IEX during the month. Whereas in the month of March, 2019, transmission congestion of 119.63 MU happened on **28 days** (except for 7th, 17th and 18th of March, 2019) in IEX, so one nation one price was observed for only **3 days** in March, 2019. Similarly, in the month of February, 2020 transmission congestion of 2.03 MU happened on 1 day only (i.e. 29th February, 2020) in IEX, so, One Nation One Price observed for 28 days in February, 2020.
- 4.14 There was no real time curtailment on IEX and PXIL in March, 2020. Also, there was no real time curtailment in February, 2020 and March, 2019 on both the power exchanges.
- 4.15 The cumulative real time curtailment during the period April, 2019 to March, 2020 is **13.72 MU** in DAM. During months of April, 2018 to March, 2019 the real time curtailment was **72.84 MU** in DAM. The month wise real time curtailment is given at **Annexure-I**
- 4.16 The **top 10 sellers** on the power exchanges during the month are: **Odisha, Uttar Pradesh, Bihar, Himachal Pradesh, Rajasthan, Raipur Energen, Chhattisgarh, Teesta -3, Assam and GMR Chhattisgarh**, which constituted 55.33 % of the market share. **[Annexure VI]**
- 4.17 The **top 10 purchaser** on the power exchanges during the month are: **Telangana, Gujarat, Maharashtra, Andhra Pradesh, Tamil Nadu, J&K, Haryana, Delhi, Rajasthan and Punjab**, which constituted 87.66 % of the market share. **[Annexure VI]**

- Source DAM and TAM 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

Annexure-I**Final Scheduled Volume, Average MCP and Real-Time Curtailment in Day Ahead Market (DAM) of IEX and PXIL for all 4 Quarters of FY 2019-20 (April, 2019 to March, 2020)**

Quarter	Month	Final Scheduled Volume (MU)			Average Market Clearing Price (Rs/kWh)		Real Time Curtailment (MU)	
		IEX	PXIL	Total	IEX	PXIL	IEX	PXIL
Quarter -I	April, 2019	4,005.41	31.43	4,036.84	3.22	3.75	3.090	-
	May, 2019	3,772.47	1.17	3,773.64	3.34	3.45	0.217	-
	June, 2019	4,206.68	0.42	4,207.10	3.32	3.48	4.910	-
Total		11,984.56	33.02	12,017.58			8.217	-
Quarter -II	July, 2019	4,800.37	0.35	4,800.72	3.38	3.21	0.039	-
	August, 2019	4,674.88	0.35	4,675.23	3.32	3.10	4.420	-
	September, 2019	3,487.57	1.03	3,488.60	2.77	2.85	-	-
Total		12,962.82	1.73	12,964.55			4.459	-
Quarter -III	October, 2019	3,391.49	9.81	3,401.3	2.71	2.62	-	-
	November, 2019	3,388.84	0.42	3,389.26	2.85	3.01	-	-
	December, 2019	4,333.32	0.46	4,333.78	2.93	2.93	-	-
Total		11,113.65	10.69	11,124.34			-	-
Quarter -IV	January, 2020	4790.96	0.92	4791.88	2.86	2.85	1.038	-
	February, 2020	4289.15	0.28	4289.43	2.91	3.14	-	-
	March, 2020	3971.24	0.00	3971.24	2.46	NA	-	-
Total		13,051.35	1.20	13,052.55			1.038	-
Total volume during FY 2019-20		49112.38	46.64	49,159.02			13.714	-

- There was no real time curtailment
- NA: Not Applicable (as no transaction happened)

Annexure-II
Final Scheduled Volume in Term Ahead Market (TAM) of IEX and PXIL for all the Quarters of FY 2019-20 (April, 2019 to March, 2020)

Quarter	Month	Final Scheduled Volume (MU)		
		IEX	PXIL	Total
Quarter -I	April, 2019	334.13	293.46	627.59
	May, 2019	326.72	122.10	448.82
	June, 2019	368.84	139.22	508.06
	Total	1,029.69	554.78	1,584.47
Quarter -II	July, 2019	523.59	224.35	747.94
	August, 2019	808.07	555.51	1363.58
	September, 2019	380.02	390.45	770.47
	Total	1,711.68	1,170.31	2,881.99
Quarter - III	October, 2019	480.74	447.21	927.95
	November, 2019	458.83	131.16	589.99
	December, 2019	371.14	142.88	514.02
	Total	1,310.71	721.25	2,031.96
Quarter - IV	January, 2020	270.35	28.65	299.00
	February, 2020	222.93	29.47	252.40
	March, 2020	363.59	18.91	382.50
	Total	856.87	77.03	933.90
Total volume during FY 2019-20		4,908.95	2,523.37	7,432.32

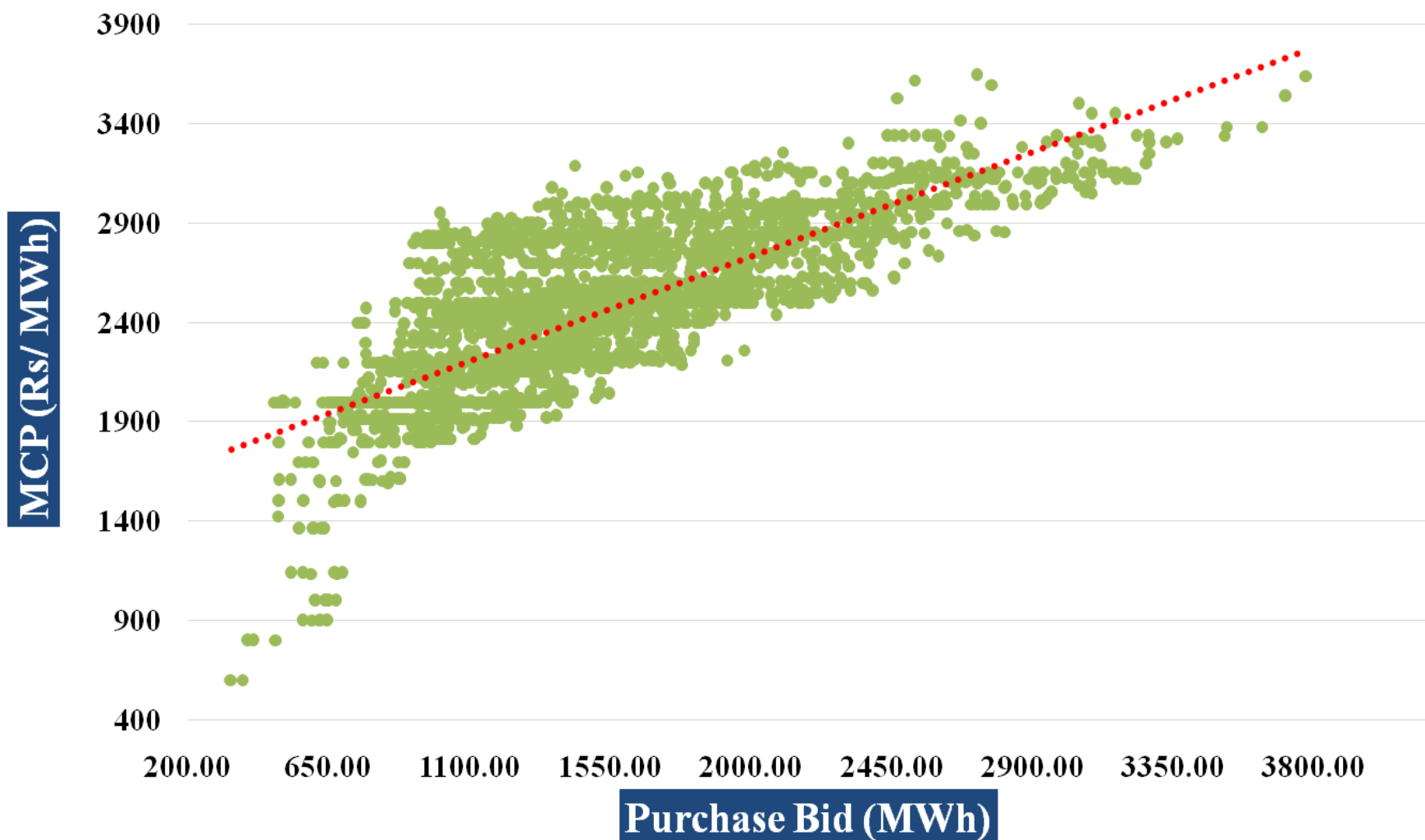
Annexure-III**Peak Time MCP, Non-Peak MCP, Maximum MCP, Minimum MCP, Average MCP and Final Schedule Volume (MU)**

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)
01/03/2020	2.44	3.13	2.63	2.55	2.67	3.62	2.04	2.64	114.45
02/03/2020	2.34	3.01	2.86	2.74	2.69	3.64	2.07	2.70	143.34
03/03/2020	2.43	3.06	2.71	2.69	2.68	3.29	2.23	2.68	142.48
04/03/2020	2.55	3.18	2.86	2.83	2.81	3.60	2.21	2.82	143.56
05/03/2020	2.20	3.00	2.67	2.71	2.56	3.20	1.94	2.60	128.98
06/03/2020	2.28	2.93	2.68	2.72	2.58	3.18	2.04	2.61	152.20
07/03/2020	2.25	2.91	2.85	2.65	2.63	3.11	2.02	2.63	150.83
08/03/2020	2.24	2.90	2.52	2.53	2.49	3.10	2.00	2.50	128.16
09/03/2020	2.30	2.92	2.73	2.57	2.60	3.18	2.00	2.60	129.49
10/03/2020	1.90	2.36	1.97	1.59	2.03	2.70	0.90	1.92	82.23
11/03/2020	1.87	2.56	2.47	2.41	2.26	2.99	1.80	2.30	107.61
12/03/2020	2.17	2.73	2.53	2.62	2.44	2.95	2.00	2.48	129.04
13/03/2020	2.31	2.98	2.79	2.72	2.65	3.12	2.20	2.66	157.35
14/03/2020	2.46	2.98	2.56	2.59	2.61	3.20	2.22	2.61	140.50
15/03/2020	1.99	2.62	2.37	2.33	2.28	2.99	1.88	2.29	113.71
16/03/2020	2.36	2.94	2.69	2.57	2.62	3.16	2.22	2.61	151.08
17/03/2020	2.51	3.13	2.84	2.79	2.77	3.34	2.30	2.78	168.30
18/03/2020	2.68	3.29	2.95	2.92	2.92	3.64	2.49	2.92	169.81
19/03/2020	2.63	3.02	2.88	2.83	2.81	3.29	2.44	2.82	175.71
20/03/2020	2.64	3.05	2.79	2.73	2.79	3.16	2.34	2.77	165.36
21/03/2020	2.34	2.92	2.57	2.69	2.56	3.16	2.00	2.59	144.59
22/03/2020	2.19	2.44	2.31	1.91	2.29	2.56	0.90	2.20	97.05
23/03/2020	2.23	2.56	2.58	2.53	2.44	2.85	1.94	2.46	124.31
24/03/2020	1.89	2.31	2.16	1.77	2.09	2.51	0.90	2.01	100.48
25/03/2020	2.09	2.19	2.03	1.55	2.09	2.47	0.60	1.95	77.55
26/03/2020	2.31	2.55	2.28	2.03	2.35	2.85	1.80	2.27	114.13
27/03/2020	2.02	2.31	2.06	1.83	2.10	2.51	1.36	2.03	88.30
28/03/2020	2.22	2.31	2.08	2.26	2.19	2.67	1.80	2.20	107.93
29/03/2020	2.23	2.24	2.02	2.39	2.15	2.85	1.59	2.21	100.68
30/03/2020	2.16	2.52	2.03	2.04	2.19	2.86	1.61	2.15	111.02
31/03/2020	2.01	2.45	1.89	2.30	2.06	3.19	1.60	2.12	111.03
Maximum	2.68	3.29	2.95	2.92	2.92	3.64	2.49	2.92	175.71
Minimum	1.87	2.19	1.89	1.55	2.03	2.47	0.60	1.92	77.55
Average	2.27	2.76	2.50	2.43	2.46	3.06	1.85	2.46	128.10

MCP: Market Clearing Price (Rs/kWh)

FSV: Final Scheduled Volume (MU)

Comparison of MCP w.r.t. Purchase Bid for 2,976 Time Blocks during the month of March, 2020



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

Annexure-V**Max. FSV, Min FSV, Max MCP and Min MCP**

Date	Max. FSV (MU)		Max. MCP (Rs/kWh)		Min FSV (MU)		Min. MCP (Rs/kWh)	
	Time Block	Value	Time Block	Value	Time Block	Value	Time Block	Value
01/03/2020	07:45 - 08:00	2.18	08:15 - 08:30	3.62	22:00 - 22:15	0.73	18:00 - 18:15	2.04
02/03/2020	08:00 - 08:15	2.40	08:15 - 08:30	3.64	22:45 - 23:00	0.86	03:15 - 03:30	2.07
03/03/2020	07:30 - 07:45	2.55	07:45 - 08:00	3.29	22:30 - 22:45	0.80	13:30 - 13:45	2.23
04/03/2020	07:30 - 07:45	2.51	08:15 - 08:30	3.60	22:00 - 22:15	0.91	17:45 - 18:00	2.21
05/03/2020	07:30 - 07:45	2.27	08:15 - 08:30	3.20	22:45 - 23:00	0.81	04:00 - 04:15	1.94
06/03/2020	07:45 - 08:00	2.42	08:15 - 08:30	3.18	22:15 - 22:30	1.02	04:00 - 04:15	2.04
07/03/2020	07:30 - 07:45	2.65	16:15 - 16:30	3.11	22:00 - 22:15	0.87	04:00 - 04:15	2.02
08/03/2020	08:00 - 08:15	2.37	09:30 - 09:45	3.10	22:00 - 22:15	0.77	04:00 - 04:15	2.00
09/03/2020	08:45 - 09:00	2.32	09:45 - 10:00	3.18	22:15 - 22:30	0.82	23:00 - 23:15	2.00
10/03/2020	07:45 - 08:00	1.32	08:00 - 08:15	2.70	19:00 - 19:15	0.60	18:45 - 19:00	0.90
11/03/2020	16:00 - 16:15	1.62	09:30 - 09:45	2.99	22:30 - 22:45	0.74	03:30 - 03:45	1.80
12/03/2020	07:30 - 07:45	1.83	09:45 - 10:00	2.95	22:30 - 22:45	0.79	04:00 - 04:15	2.00
13/03/2020	08:15 - 08:30	2.78	07:45 - 08:00	3.12	22:15 - 22:30	0.82	04:00 - 04:15	2.20
14/03/2020	07:45 - 08:00	2.79	07:45 - 08:00	3.20	22:30 - 22:45	0.75	17:30 - 17:45	2.22
15/03/2020	07:30 - 07:45	1.96	07:30 - 07:45	2.99	22:45 - 23:00	0.74	03:45 - 04:00	1.88
16/03/2020	07:30 - 07:45	2.79	08:45 - 09:00	3.16	22:30 - 22:45	0.81	17:30 - 17:45	2.22
17/03/2020	08:30 - 08:45	2.81	08:45 - 09:00	3.34	22:30 - 22:45	1.02	03:30 - 03:45	2.30
18/03/2020	07:45 - 08:00	2.97	07:45 - 08:00	3.64	22:15 - 22:30	0.90	03:30 - 03:45	2.49
19/03/2020	08:15 - 08:30	2.83	08:45 - 09:00	3.29	22:15 - 22:30	1.04	17:30 - 17:45	2.44
20/03/2020	08:00 - 08:15	2.72	09:45 - 10:00	3.16	22:15 - 22:30	1.02	17:30 - 17:45	2.34
21/03/2020	07:30 - 07:45	2.44	19:00 - 19:15	3.16	22:30 - 22:45	0.87	03:30 - 03:45	2.00
22/03/2020	07:30 - 07:45	1.55	07:30 - 07:45	2.56	18:00 - 18:15	0.59	18:15 - 18:30	0.90
23/03/2020	07:30 - 07:45	1.86	21:00 - 21:15	2.85	22:00 - 22:15	0.83	04:00 - 04:15	1.94
24/03/2020	07:15 - 07:30	1.82	07:15 - 07:30	2.51	18:00 - 18:15	0.56	18:00 - 18:15	0.90
25/03/2020	07:15 - 07:30	1.56	05:30 - 05:45	2.47	18:00 - 18:15	0.34	18:00 - 18:15	0.60
26/03/2020	07:30 - 07:45	2.15	07:30 - 07:45	2.85	20:30 - 20:45	0.70	20:00 - 20:15	1.80
27/03/2020	07:30 - 07:45	1.77	07:30 - 07:45	2.51	17:30 - 17:45	0.49	18:00 - 18:15	1.36
28/03/2020	06:45 - 07:00	1.95	21:00 - 21:15	2.67	22:15 - 22:30	0.74	18:30 - 18:45	1.80
29/03/2020	07:30 - 07:45	1.78	21:00 - 21:15	2.85	22:00 - 22:15	0.69	10:15 - 10:30	1.59
30/03/2020	07:30 - 07:45	2.08	07:30 - 07:45	2.86	22:15 - 22:30	0.71	22:00 - 22:15	1.61
31/03/2020	06:30 - 06:45	2.12	21:00 - 21:15	3.19	17:45 - 18:00	0.76	14:15 - 14:30	1.60

MCP: Market Clearing Price (Rs/kWh)

FSV: Final Scheduled Volume (MU)

Annexure-VI**Top Ten Entity (Sellers and Purchaser) during the month of March,2020**

Entity Name	Sell		Entity Name	Purchase	
	(MU)	Percent		(MU)	Percent (%)
Odisha	374.83	9.44%	Telangana	1134.30	28.56%
Uttar Pradesh	346.05	8.71%	Gujarat	548.81	13.82%
Bihar	267.99	6.75%	Maharashtra	429.20	10.81%
Himachal Pradesh	232.83	5.86%	Andhra Pradesh	404.56	10.19%
Rajasthan	218.35	5.50%	Tamil Nadu	297.02	7.48%
Raipur Energen	198.80	5.01%	J&K	206.47	5.20%
Chhattisgarh	180.99	4.56%	Haryana	140.20	3.53%
Teesta -3	136.50	3.44%	Delhi	129.95	3.27%
Assam	126.14	3.18%	Rajasthan	99.37	2.50%
GMR Chhattisgarh	114.88	2.89%	Punjab	91.29	2.30%
Total	2,197.37	55.33%	Total	3,481.16	87.66%
Total Volume in PXs	3971.24		Total Volume in PXs	3971.24	

Definitions/ Terminologies used in the Report

1. **MCP** is the price discovered in each of the 15 Minute Time Block. The day is divided in 96 time blocks of 15minutes each.
2. **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.

3. **Daily MCP** is the average of MCP of all 96 Time Blocks of the day during which transaction happened.
4. **Average MCP** is the average of daily MCP of the days during the month on which transaction happened.
5. **Average Scheduled Volume** is the average of scheduled volume of the days during the month on which transaction happened.
6. **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.
7. **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.
8. **Energy Supplied** is the total energy (MU) available at the States' periphery.
9. **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.