



अप्रैल, 2021 मासिक मार्केट मॉनिटरिंग रिपोर्ट

Monthly Market Monitoring Report

April, 2021



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केन्द्रीय विद्युत प्राधिकरण/ Central Electricity Authority

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REPORT FOR MONTH: APRIL, 2021

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 April, 2021 was **5,703.95 MU**. The total energy supplied in the country during the month of April, 2021 was 1,17,080 MU. Thus, the volume of electricity transacted on the power exchanges in DAM was 4.87% of the total energy supplied in the country. The total volume of electricity transacted in DAM during March, 2021 was **6,559.88 MU**, which was 5.44% of the total energy supplied [1,20,635 MU] in the country during March, 2021. Similarly, the total volume of electricity transacted in DAM during April, 2020 was **3,692.04 MU**, which was 4.37 % of the total energy supplied [84,550 MU] in the country during April, 2020.
 - 1.2. The volume of electricity transacted on IEX and PXIL during April, 2021 were **5,699.22 MU and 4.73 MU** respectively, which means that the total volume transacted on IEX was **99.92%** of the total volume on power exchanges. The volume of electricity transacted on IEX and PXIL during March, 2021 were **6,548.94 MU and 10.94 MU**, respectively, which means that the total volume transacted on IEX was **99.83 %** of the total volume on power exchanges. Also, the total volume of electricity transacted during April, 2020 on IEX was **3,692.04 MU**, whereas, **no transaction** of electricity happened in PXIL during April, 2020.
 - 1.3. The DAM Volume in IEX for April, 2021 is inclusive of Cross Border Transactions of Electricity of **16.47 MU (purchase only) happened with Nepal during April, 2021**. The day-wise details of trade are given in **Annexure-XII**. IEX commenced Cross Border Electricity Trade (CBET) with Nepal in its Day Ahead Electricity Market on April 17, 2021.
 - 1.4. The Average Market Clearing Price (MCP) on IEX during the month of April, 2021 was **Rs 3.70/kWh**, which shows a decrease of **9.09%** and an increase of **52.89%** when compared with average MCP's for the month of March, 2021 and April, 2020, which were **Rs 4.07/kWh and Rs 2.42/kWh** respectively. On PXIL, the average MCP during the month of April, 2021 was **Rs 3.69/kWh**, which shows a decrease of **14.58%** when compared with average MCP for the month of March, 2021, which was **Rs 4.32/kWh**, whereas in PXIL, **no transaction** of electricity happened during April, 2020.
- #### 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 April, 2021 with that of March, 2021 and April, 2020 is given in Table- 1A & 1B:

(a) April, 2021 vis- a -vis March, 2021

Daily MCP (Rs/kWh)	IEX			PXIL		
	April, 2021	March, 2021	% Change	April, 2021	March, 2021	% Change
Minimum	2.96	2.99	-1.00	3.28	3.13	4.79
Maximum	4.94	5.42	-8.86	4.57	5.99	-23.71
Average	3.70	4.07	-9.09	3.69	4.32	-14.58

Table: 1A

(b) April, 2021 vis- a –vis April, 2020

Daily MCP (Rs/kWh)	IEX			PXIL		
	April, 2021	April, 2020	% Change	April, 2021	April, 2020	% Change
Minimum	2.96	2.11	40.28	3.28	-	NA
Maximum	4.94	2.67	85.02	4.57	-	NA
Average	3.70	2.42	52.89	3.69	-	NA

-: No transaction happened

NA: Not Applicable

Table: 1B

2.2. The maximum Area Clearing Price (ACP) of **Rs 7.55/kWh** in IEX was observed in all 13 regions during the time block **23:00-23:15 Hrs** on 13th April, 2021. As there was no congestion in transmission system, the MCP for this time-block was also **Rs 7.55/kWh**. However, the Daily MCP in IEX on pan India basis on 13th April, 2021 was **Rs 3.81/kWh**. Whereas, in PXIL, the maximum ACP of **Rs 7.10/kWh** was observed in all 13 regions during the time block **18:00-18:15 Hrs** on 09th April, 2021. As there was no congestion in transmission system, the MCP for above time block was also **Rs 7.10/kWh**. However, the Daily MCP in PXIL on 09th April, 2021 was **Rs 4.26/kWh**.

2.3. The minimum ACP of **Rs 2.30/kWh** in IEX was observed in all 13 regions during the time block **13:45-14:00 Hrs** on 18th April, 2021. As there was no congestion in transmission system, the MCP for this time-block was also **Rs 2.30/kWh**. However, the Daily MCP in IEX on pan India basis on 18th April, 2021 was **Rs 3.09/kWh**. Whereas, in PXIL, the minimum ACP of **Rs 3.09/kWh** was observed in all 13 regions on 20th April, 2021 for time block **15:00-15:15 Hrs** during April, 2021. As no congestion was there in transmission system, the MCP for the above time block was also **Rs 3.09/kWh**. However, the Daily MCP in PXIL on 20th April, 2021 was **Rs 3.32/kWh**.

2.4. A comparison of the Minimum and Maximum Area Clearing Price (ACP) during the months of April, 2021 with that of March, 2021 and April, 2020 is given in Table-2A&2B:

(a) April, 2021 vis- a-vis March, 2021

ACP (Rs/kWh)	IEX			PXIL		
	April, 2021	March, 2021	% Change	April, 2021	March, 2021	% Change
Minimum	2.30	2.34	-1.71	3.09	2.62	17.94
Maximum	7.55	9.88	-23.58	7.10	7.80	-8.97

Table: 2A

(b) April, 2021 vis- a- vis April, 2020

ACP (Rs/kWh)	IEX			PXIL		
	April, 2021	April, 2020	% Change	April, 2021	April, 2020	% Change
Minimum	2.30	0.70	228.57	3.09	-	NA
Maximum	7.55	3.87	95.09	7.10	-	NA

-: No transaction happened

NA: Not Applicable

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 April, 2021 with that of March, 2021 and April, 2020 is given in Table-3A & 3B:

(a) April, 2021 vis- a- vis March, 2021

Final Scheduled Volume (MU)	IEX			PXIL		
	April, 2021	March, 2021	% Change	April, 2021	March, 2021	% Change
Minimum	143.55	181.14	-20.75	0.14	0.01	1300.00
Maximum	238.26	251.01	-5.08	0.84	1.22	-31.15
Average	189.97	211.26	-10.08	0.43	0.41	4.88

Table: 3A

(b) April, 2021 vis- a- vis April, 2020

Final Scheduled Volume (MU)	IEX			PXIL		
	April, 2021	April, 2020	% Change	April, 2021	April, 2020	% Change
Minimum	143.55	92.47	55.24	0.14	-	NA
Maximum	238.26	151.23	57.55	0.84	-	NA
Average	189.97	123.07	54.36	0.43	-	NA

-: No transaction happened

NA: Not Applicable

Table: 3B

3. TERM AHEAD MARKET (TAM)

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

- 3.1. The total volume of electricity transacted on both the power exchanges in Term Ahead Market on trade date basis in April, 2021 was **977.13 MU**, out of which, **325.78 MU** (33.34 %) was transacted on IEX and **651.35 MU** (66.66 %) was transacted on PXIL.
- 3.2. The total volume of electricity transacted on both the power exchanges in Term Ahead Market on trade date basis in March, 2021 was **685.38 MU**, out of which, **332.18 MU** (48.47 %) was transacted on IEX and **353.20 MU** (51.53%) was transacted on PXIL.
- 3.3. Similarly, total volume of electricity transacted during April, 2020 in Term Ahead Market on trade date basis in both the power exchanges was **623.24 MU**, out of which, **340.52 MU** (54.64 %) was transacted on IEX and **282.72 MU** (45.36%) was transacted on PXIL.
- 3.4. With respect to the total energy supplied during the month of April, 2021 in the country, the volume of electricity traded on the power exchanges in TAM on trade date basis represents **0.83%** of the total energy supplied. The same was **0.57 %** in March, 2021 and **0.74 %** in April, 2020.
- 3.5. In the month of April, 2021, there was no transmission congestion in IEX of **0.0025 MU** in Day Ahead Contingency Contract, whereas in PXIL, there was a transmission congestion of **14.46 MU** in Daily/Anyday contract during the month of April, 2021.
- 3.6. The comparison of total volume of electricity transacted on both the power exchanges in Term Ahead Market (TAM) during April, 2021 with March, 2021 and April, 2020 is given in Table- 4A&4B:

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

Contract Type	IEX			PXIL		
	April, 2021	March, 2021	% Change	April, 2021	March, 2021	% Change
Intra Day (MU)	7.50	3.62	107.18	95.87	12.07	694.28
Day Ahead Contingency(MU)	64.77	46.08	40.56	-	-	NA
Daily/ Any Day (MU)	253.51	282.48	-10.26	555.48	341.13	62.84
Weekly (MU)	-	-	NA	-	-	NA

- : No Transaction happened

NA: Not Applicable

Table: 4A

(b) April, 2021 vis- a- vis April, 2020 (on trade Date Basis)

Contract Type	IEX			PXIL		
	April, 2021	April, 2020	% Change	April, 2021	April, 2020	% Change
Intra Day (MU)	7.50	21.89	-65.74	95.87	8.95	971.17
Day Ahead Contingency (MU)	64.77	2.43	2,565.43	-	-	NA
Daily/ Any Day (MU)	253.51	174.00	45.70	555.48	273.77	102.90
Weekly (MU)	-	142.20	NA	-	-	NA

-: No transaction happened

NA: Not Applicable

Table: 4B

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

- 3.7. The total volume of electricity transacted on both the power exchanges in Term Ahead Market on delivery date basis in April, 2021 was **925.30 MU**, out of which, **348.58 MU (37.67%)** was transacted on IEX and **576.72 MU (62.33%)** was transacted on PXIL.
- 3.8. The total volume of electricity transacted on both the power exchanges in Term Ahead Market on delivery date basis in March, 2021 was **622.72 MU**, out of which, **234.18 MU (37.61%)** was transacted on IEX and **388.54 MU (62.39%)** was transacted on PXIL.
- 3.9. Similarly, total volume of electricity transacted during April, 2020 in Term Ahead Market on delivery date basis in both the power exchanges was **551.24 MU**, out of which, **359.94 MU (65.30%)** was transacted on IEX and **191.30 MU (34.70%)** was transacted on PXIL.
- 3.10. With respect to the total energy supplied during the month of April, 2021 in the country, the volume of electricity traded on the power exchanges in TAM on delivery date basis represents **0.79 %** of the total energy supplied. The same was **0.52 %** in March, 2021 and **0.65%** in April, 2020.
- 3.11. In the month of April, 2021, there was real time curtailment in IEX of **6.75 MU** in Daily/ Anyday contracts, whereas in PXIL, there was real time curtailment of **16.55 MU** in Daily/ Any day contract during April, 2021.
- 3.12. The comparison of total volume of electricity transacted in both the power exchanges in Term Ahead Market (TAM) on delivery date basis during April, 2021 with March, 2021 and April, 2020 is given in Table – 4C&4D:

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

Contract Type	IEX			PXIL		
	April, 2021	March, 2021	% Change	April, 2021	March, 2021	% Change
Intra Day (MU)	7.50	3.62	107.18	94.17	12.07	680.20
Day Ahead Contingency(MU)	63.07	46.66	35.17	-	-	NA
Daily/ Any Day (MU)	278.01	183.90	51.17	482.55	376.47	28.18
Weekly (MU)	-	-	NA	-	-	NA

- : No transaction happened

NA: Not Applicable

Table: 4C

(b) April, 2021 vis- a- vis April, 2020 (on Delivery Date Basis)

Contract Type	IEX			PXIL		
	April, 2021	April, 2020	% Change	April, 2021	April, 2020	% Change
Intra Day (MU)	7.50	21.89	-65.74	94.17	8.95	952.18
Day Ahead Contingency MU)	63.07	2.77	2176.90	-	-	NA
Daily/ Any Day (MU)	278.01	173.28	60.44	482.55	182.35	164.63
Weekly (MU)	-	162.00	NA	-	-	NA

-: No transaction happened

NA: Not Applicable

Table: 4D

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) and Area Clearing Prices (ACP) in Real Time Market during the month of April, 2021 as compared with March, 2021 are as given in Tables 5A, 5B & 5C:

(i) Final Scheduled Volume:

Final Scheduled Volume (MU)	IEX			PXIL		
	April, 2021	March, 2021	% Change	April, 2021	March, 2021	% Change
Total	1473.36	1413.96	4.20	No Transaction		
Minimum	35.56	34.64	2.66	No Transaction		
Maximum	68.36	62.77	8.91	No Transaction		
Average	49.11	45.61	7.67	No Transaction		

Table-5A

(ii) Daily Market Clearing Price (MCP):

Daily MCP (Rs/kWh)	IEX			PXIL		
	April, 2021	March, 2021	% Change	April, 2021	March, 2021	% Change
Minimum	2.77	2.60	6.54	No Transaction		
Maximum	5.60	6.20	-9.68	No Transaction		
Average	3.50	3.73	-6.17	No Transaction		

Table-5B

(iii) Area Clearing Price (ACP):

ACP (Rs/kWh)	IEX			PXIL		
	April, 2021	March, 2021	% Change	April, 2021	March, 2021	% Change
Minimum	1.00	1.43	-30.07	No Transaction		
Maximum	10.50	19.99	-47.47	No Transaction		

Table -5C

5. GREEN TERM AHEAD MARKET (GTAM):

The transaction of electricity in Green Term Ahead Market(GTAM) was started in IEX w.e.f. 21st August, 2020 onwards and in PXIL w.e.f. 24th April, 2021 onwards. The total volume of electricity transacted and Market Clearing Price in Solar and Non-Solar Energy Segment in GTAM in Day Ahead Contingency, Intraday, Daily/ Anyday and Weekly contracts during April, 2021 on trade date basis and delivery date basis has been shown in Tables 6A to 6H.

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

The Final Scheduled Volume and the Price of electricity transacted in GTAM in IEX during April, 2021 and its comparison with March, 2021 has been shown in Table 6A & 6B below.

(i) Final Scheduled Volume:

Exchange	Solar Energy Contract	Period	Final Scheduled Volume MU)			
			Total	Minimum	Maximum	Average
IEX	Day Ahead Contingency	April, 2021	72.73	0.44	6.10	2.42
		March, 2021	21.44	0.06	2.03	0.69
		% Change	239.23	633.33	200.49	250.72
	Intraday	April, 2021	0.42	0.42	0.42	0.42
		March, 2021	-	-	-	-
		% Change	NA	NA	NA	NA
	Daily-Anyday	April, 2021	3.50	1.40	2.10	1.75
		March, 2021	-	-	-	-
		% Change	NA	NA	NA	NA
	Weekly	April, 2021	1.68	1.68	1.68	1.68
		March, 2021	-	-	-	-
		% Change	NA	NA	NA	NA

-: No transaction happened

NA: Not Applicable

Table-6A

(ii) Daily Market Clearing Price (MCP):

Exchange	Solar Energy Contract	Period	Prices(Rs/kWh)		
			Minimum	Maximum	Average
IEX	Day Ahead Contingency	April, 2021	3.45	4.47	3.90
		March, 2021	3.42	5.00	4.17
		% Change	0.88	-10.60	-6.47
	Intraday	April, 2021	4.00	4.00	4.00
		March, 2021	-	-	-
		% Change	NA	NA	NA
	Daily/ Anyday	April, 2021	4.35	4.40	4.38
		March, 2021	-	-	-
		% Change	NA	NA	NA
	Weekly	April, 2021	4.00	4.00	4.00
		March, 2021	-	-	-
		% Change	NA	NA	NA

-: No transaction happened

NA: Not Applicable

Table-6B

Solar Energy Segment in GTAM (On Delivery date basis)

The Final Scheduled Volume and the Price of electricity transacted in GTAM in IEX during April, 2021 and its comparison with March, 2021 has been shown in Tables 6C & 6D below.

(i) Final Scheduled Volume:

Exchange	Solar Energy Contract	Period	Final Scheduled Volume (MU)			
			Total	Minimum	Maximum	Average
IEX	Day Ahead Contingency	April, 2021	72.07	0.44	6.10	2.40
		March, 2021	22.18	0.06	2.03	0.72
		% Change	224.93	633.33	200.49	233.33
	Intraday	April, 2021	0.42	0.42	0.42	0.42
		March, 2021	-	-	-	-
		%Change	NA	NA	NA	NA
	Daily/ Anyday	April, 2021	2.90	0.20	0.30	0.24
		March, 2021	-	-	-	-
		%Change	NA	NA	NA	NA
	Weekly	April, 2021	-			
		March, 2021	-			

-: No transaction happened

NA: Not Applicable

Table-6C

(ii) Daily Market Clearing Price (MCP):

Exchange	Solar Energy Contract	Period	Prices(Rs/kWh)		
			Minimum	Maximum	Average
IEX	Day Ahead Contingency	April, 2021	3.45	4.47	3.91
		March, 2021	3.42	5.00	4.18
		% Change	0.88	-10.60	-6.46
	Intraday	April, 2021	4.00	4.00	4.00
		March, 2021	-	-	-
		% Change	NA	NA	NA
	Daily/ Anyday	April, 2021	4.35	4.40	4.38
		March, 2021	-	-	-
		% Change	NA	NA	NA
	Weekly	April, 2021	-		
		March, 2021	-		

-: No transaction happened

NA: Not Applicable

Table-6D

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

The total volume of electricity transacted and Market Clearing Price in Non-Solar Energy Segment in GTAM in Day Ahead Contingency, Intraday, Daily/ Anyday and Weekly contracts during April, 2021 on trade date basis and delivery date basis has been shown in Tables 6E to 6H.

The Final Scheduled Volume and the Price of electricity transacted in Non-Solar GTAM in IEX and PXIL during April, 2021 and its comparison with March, 2021 has been shown in Tables 6E & 6F below.

(iii) Final Scheduled Volume:

Exchange	Non- Solar Energy Contract	Period	Final Scheduled Volume (MU)			
			Total	Minimum	Maximum	Average
IEX	Day Ahead Contingency	April, 2021	104.61	0.24	13.31	3.49
		March, 2021	29.67	0.22	5.26	1.24
		%Change	252.58	9.09	153.04	181.45
	Intraday	April, 2021	3.01	0.18	2.40	1.00
		March, 2021	0.35	0.35	0.35	0.35
		%Change	760.00	-48.57	585.71	185.71
	Daily/ Anyday	April, 2021	No Transaction			
		March, 2021	No Transaction			
	Weekly	April, 2021	No Transaction			
		March, 2021	No Transaction			
PXIL	Day Ahead Contingency	April, 2021	No Transaction			
		March, 2021	No Transaction			
	Intraday	April, 2021	0.03	0.03	0.03	0.03
		March, 2021	0.39	0.03	0.26	0.13
		% Change	-92.31	0.00	-88.46	-76.92
	Daily/ Anyday	April, 2021	5.51	0.08	1.61	0.37
		March, 2021	0.20	0.20	0.20	0.20
		% Change	2,655.00	-60.00	705.00	85.00
	Weekly	April, 2021	No Transaction			
		March, 2021	No Transaction			

Table-6E

(iv) Daily Market Clearing Price (MCP) (On Trade date basis):

Exchange	Non- Solar Energy Contract	Period	Prices(Rs/kWh)		
			Minimum	Maximum	Average
IEX	Day Ahead Contingency	April, 2021	4.12	5.03	4.39
		March, 2021	4.00	5.10	4.40
		% Change	3.00	-1.37	-0.23
	Intraday	April, 2021	4.90	5.60	5.25
		March, 2021	5.10	5.10	5.10
		%Change	-3.92	9.80	2.94
	Daily/Anyday	April, 2021	-		
		March, 2021	-		
	Weekly	April, 2021	-		
		March, 2021	-		
PXIL	Day Ahead Contingency	April, 2021	-		
		March, 2021	-		
	Intraday	April, 2021	4.00	4.00	4.00
		March, 2021	4.50	5.45	4.83
		% Change	-11.11	-26.61	-17.18
	Daily/ Anyday	April, 2021	1.10	4.95	4.20
		March, 2021	4.60	4.60	4.60
		% Change	-76.09	7.61	-8.70
	Weekly	April, 2021	-	-	-
		March, 2021	-	-	-
		% Change	NA	NA	NA

-: No transaction happened

NA: Not Applicable

Table-6F

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

The Final Scheduled Volume and the Price of electricity transacted in GTAM in IEX and PXIL during April, 2021 and its comparison with March, 2021 has been shown in Table 6G & 6H below.

(iii) Final Scheduled Volume:

Exch- ange	Non- Solar Energy Contract	Period	Final Scheduled Volume (MU)			
			Total	Minimum	Maximum	Average
IEX	Day Ahead Contingency	April, 2021	99.94	0.24	13.31	3.33
		March, 2021	31.68	0.22	5.26	1.32
		% Change	215.47	9.09	153.04	152.27
	Intraday	April, 2021	3.01	0.18	2.40	1.00
		March, 2021	0.35	0.35	0.35	0.35
		%Change	760.00	-48.57	585.71	185.71
	Daily/ Anyday	April, 2021	-			
		March, 2021	-			
	Weekly	April, 2021	-			
		March, 2021	-			
PXIL	Day Ahead Contingency	April, 2021	-			
		March, 2021	-			
	Intraday	April, 2021	0.03	0.03	0.03	0.03
		March, 2021	0.39	0.03	0.26	0.13
		%Change	-92.31	0.0	-88.46	-76.92
	Daily/ Anyday	April, 2021	5.71	0.08	1.61	0.36
		March, 2021	-	-	-	-
		%Change	NA	NA	NA	NA
	Weekly	April, 2021	-			
		March, 2021	-			

-: No transaction happened

NA: Not Applicable

Table-6G

(iv) Daily Market Clearing Price (MCP):

Exch- ange	Non- Solar Energy Contract	Period	Prices(Rs/kWh)		
			Minimum	Maximum	Average
IEX	Day Ahead Contingency	April, 2021	4.12	5.03	4.38
		March, 2021	4.00	5.10	4.40
		% Change	3.00	-1.37	-0.45
	Intraday	April, 2021	4.90	5.60	5.25
		March, 2021	5.10	5.10	5.10
		%Change	-3.92	9.80	2.94
	Daily/Anyday	April, 2021	-		
		March, 2021	-		
	Weekly	April, 2021	-		
		March, 2021	-		
PXIL	Day Ahead Contingency	April, 2021	-		
		March, 2021	-		
	Intraday	April, 2021	4.00	4.00	4.00
		March, 2021	4.50	5.45	4.83
		%Change	-11.11	-26.61	-17.18
	Daily/Anyday	April, 2021	3.70	4.95	4.45
		March, 2021	-	-	-
		%Change	NA	NA	NA
	Weekly	April, 2021	-		
		March, 2021	-		

-: No transaction happened

Table-6H

NA: Not Applicable

6. BILATRAL TRANSACTIONS:

The total volume of electricity transacted through **Bilateral transactions** in the month of April, 2021 for buy and sell were **6,023.67 MU** and **6,023.39 MU** respectively. The total buy volume of electricity transacted in bilateral market through direct transactions and traders were **1,357.49 MU** and **4,666.18 MU** respectively. Similarly, the total sell volume of electricity transacted in bilateral market through direct transactions and traders were **1,416.75 MU** and **4,606.64 MU** respectively. The details of Bilateral buy and sell Transactions of Electricity happened during April, 2021 have been shown in Tables below:

Volume (MU)	Buy		Total Buy (MU)	Sell		Total Sell (MU)
	Direct	Traders		Direct	Traders	
Total	1357.49	4666.18	6,023.67	1416.75	4606.64	6,023.39
Maximum	214.41	1381.69	-	290.00	785.97	-
Minimum	0.39	0.10	-	0.72	0.09	-

Table -7A

The region-wise maximum/ minimum volume of electricity for buy and sell happened bilaterally during April, 2021 is given in tables below:

(i) Region-wise Buy Volume:

Table -7B

Region-wise Volume (MU)	ER		WR		NR		SR		NER	
	Direct	Trader	Direct	Trader	Direct	Trader	Direct	Trader	Direct	Trader
Total	360.32	873.94	439.02	1061.71	336.02	693.55	222.14	1994.45	0.00	42.53
Maximum	143.05	204.57	214.41	781.57	211.12	162.66	206.04	1381.69	0.00	41.47
Minimum	5.06	6.73	4.73	0.10	0.39	16.11	1.59	3.87	0.00	1.06

(ii) Region-wise Sell Volume:

Region-wise Volume (MU)	ER		WR		NR		SR		NER	
	Direct	Trader	Direct	Trader	Direct	Trader	Direct	Trader	Direct	Trader
Total	411.84	449.87	893.37	2866.80	88.63	663.28	22.92	601.66	0.00	25.03
Maximum	250.94	381.37	290.00	785.97	36.00	233.81	11.78	267.17	0.00	12.16
Minimum	6.13	0.09	0.72	2.27	1.87	5.54	4.73	1.70	0.00	0.11

Table -7C

6.1. The **top 5 buyers** on bilateral transaction through direct transactions in the month of April, 2021 are Chhattisgarh, Haryana, Telangana, Madhya Pradesh and Odisha, which constituted **71.28%** of the market volume. Whereas **top 5 buyers** on bilateral transaction through traders in the month of April, 2021 are Tamil Nadu, Gujarat, Andhra Pradesh, Maharashtra and Odisha, which constituted **62.38 %** of the market volume. [Annexure III]

- 6.2.** The **top 5 sellers** on bilateral transaction through direct transactions in the month of April, 2021 are Madhya Pradesh, DVC, RKM_Power, SKS Raigarh and Adhunik Power, which constituted **72.92%** of the market volume. Whereas **top 5 sellers** on bilateral transaction through traders in the month of April, 2021 are Raipur Energen, Gujarat, JITPL, Raigarh Energy and DB Power, which constituted **50.06%** of the market volume. [Annexure III]
- 6.3. Deviation Import and Export Volume** - The total volume of Deviation observed in the month of April, 2021 were **1839.33 MU** in import and **1952.86 MU** in export, respectively.
- 6.4.** A comparison of volume of electricity transacted through both the Power Exchanges together in DAM and Bilateral **Buy (i.e. Direct and through traders)** in the month of April, 2021 is shown in **Figure 1**:

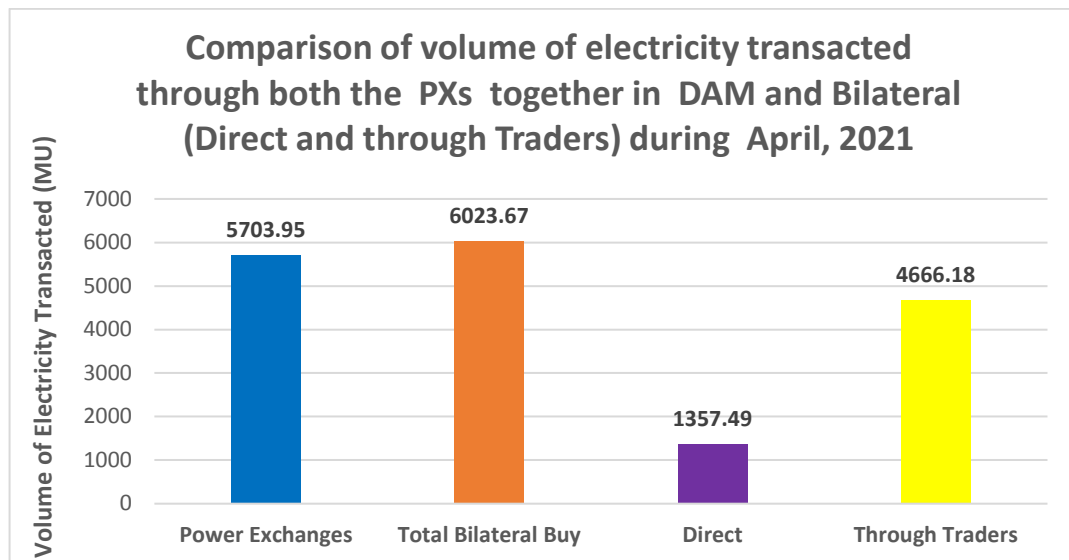


Figure -1

7. ANALYSIS OF MOVEMENT OF PRICES OBSERVED IN DAM DURING APRIL, 2021

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 April, 2021 month. The observations made are as under:

- 7.1.** 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.
- 7.2.** 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 **0.42**. 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 April, 2021.

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

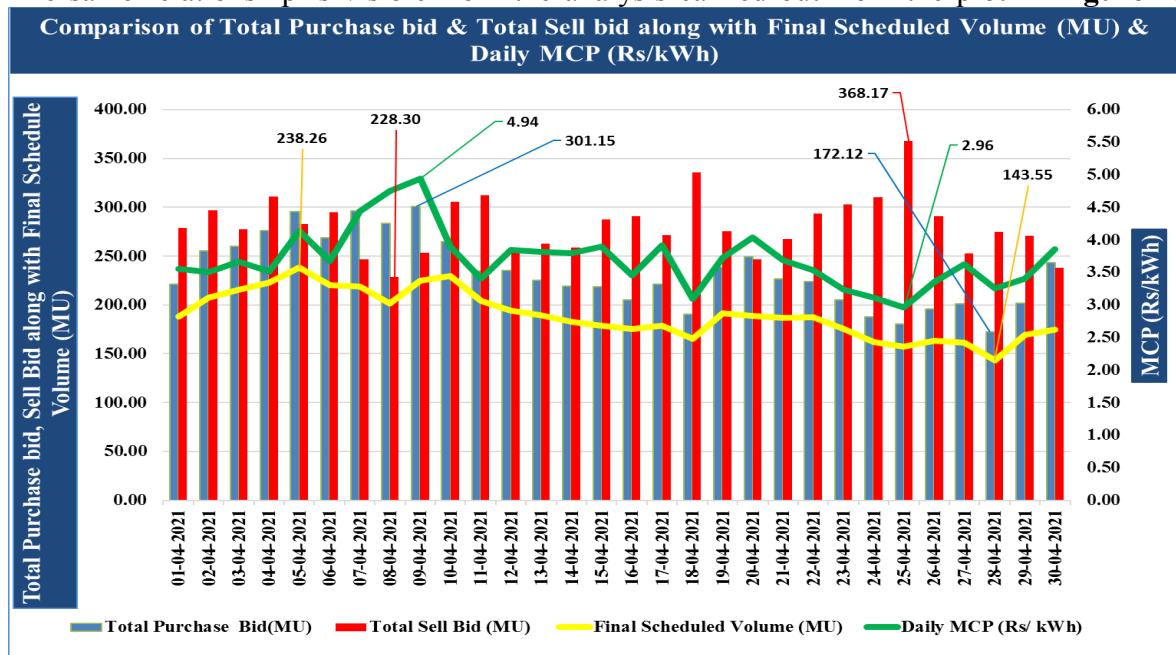


Figure -2

7.4. 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, during the month of April, 2021, it is observed that on second Monday (i.e. 12th April, 2021), FSV showed decreasing trend in comparison to second Sunday (i.e. 11th April, 2021) and on first Sunday (i.e. 4th April, 2021), FSV showed increasing trend in comparison to first Saturday (i.e. 03rd April, 2021). The detailed analysis on this is given at **Appendix-I**.

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

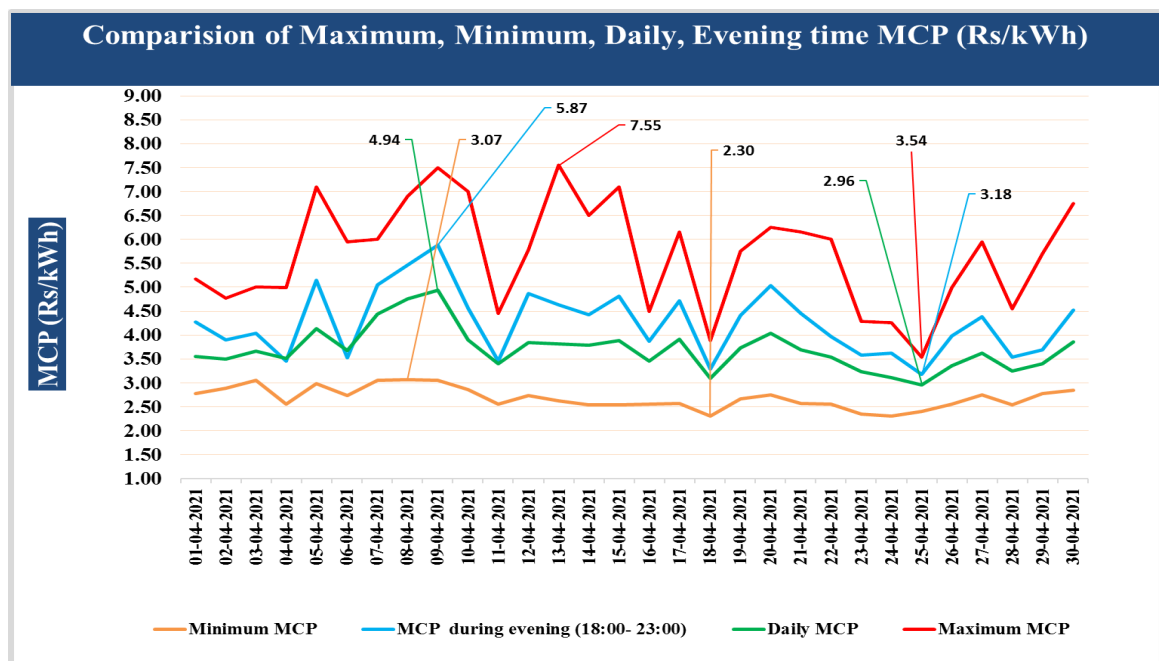


Figure -3

- 7.6. The Purchase Bids and the MCP discovered in each of the 15-minute time block during the month almost followed the same trend [**Annexure V**]. This is also corroborated with the outcome of regression analysis mentioned at **para 7.1 and 7.2 above**.
- 7.7. On **17 days** during the month, the maximum FSV occurred during the **time period 06:30-07:30 Hrs. [Annexure VI]**
- 7.8. On **19 days** during the month, the maximum MCP occurred during the **time period 23:00-00:30 Hrs. [Annexure VI]**
- 7.9. On **8 days** during the month, the minimum FSV occurred during the **time period 09:30-10:30 Hrs. [Annexure VI]**
- 7.10. On **25 days** during the month, the minimum MCP occurred during the **time period 13:00-14:00 Hrs. [Annexure VI]**
- 7.11. The maximum demand met during the month of April, 2021 in the country occurred on **08th April, 2021 at 182.56 GW**, which is 1.87% lower than the maximum demand occurred during **March, 2021 [i.e. 186.04 GW on 11th March, 2021]** and is 37.49% more than the maximum demand occurred during April, 2020 i.e. [**132.78 GW on 30th April, 2020**].
- 7.12. In the month of April, 2021, One nation One Price was observed in IEX for **27 days** during the month, as there was transmission congestion of **11.26 MU** on account of congestion on **3 days** (i.e., 02nd to 04th April, 2021). Whereas, in PXIL, there was no congestion in transmission system during April, 2021, so one nation one price was observed on all **11 days** during which transaction of electricity happened (i.e. 06th to 10th, 12th, 14th, 16th, 19th to 21st April, 2021). While in the month of March, 2021, One nation One Price was observed in IEX for **9 days** during the month, as there was transmission congestion of **24.34 MU** on account of congestion on 22 days (i.e., 01st to 05th, 11th to 13th, 15th to 16th, 20th to 31st March, 2021). Whereas, in PXIL, there was no congestion in transmission system during March, 2021, so one nation one price was observed **on all 27 days** during which transaction of electricity happened (i.e., 1st to 21st, 23rd to 25th and 27th to 29th March, 2021). Similarly, in the month of April, 2020 there was **no** congestion in transmission system in IEX, hence, one nation one price was observed **for all 30 days** in IEX during the month, whereas, **no** transactions of electricity happened on PXIL during April, 2020.
- 7.13. There was **no** real time curtailment in IEX and PXIL in April, 2021. Further, there was **no** real time curtailment in IEX and PXIL in March, 2021. In April, 2020 also, there was no real time curtailment in IEX, whereas, no transactions of electricity happened on PXIL during April, 2020.

- 7.14. The **top 10 sellers** on the power exchanges in **DAM** in the month of April, 2021 were **Uttar Pradesh, Madhya Pradesh, Rajasthan, Delhi, Sembcorp Gayatri, Teesta-3, Jaypee Nigrie, Haryana, Telangana and Chhattisgarh**, which constituted **64.90 %** of the market volume. [Annexure VII]
- 7.15. The **top 10 purchasers** on the power exchanges in **DAM** in the month of April, 2021 were **Andhra Pradesh, Gujarat, Telangana, Maharashtra, Tamil Nadu, Uttarakhand, J&K, Bihar, Uttar Pradesh and West Bengal**, which constituted **84.57 %** of the market volume. [Annexure VII]
- 7.16. The total volume of electricity purchased by Discoms/Licensees in DAM in the month of April, 2021 was **5,634.21 MU**, which constituted **98.78 %** of total volume of electricity purchased on both the power exchanges.
- 7.17. Similarly, the total volume of electricity purchased by Discoms/Licensees in DAM in the month of March, 2021 was **6,518.22 MU**, which constituted **99.36 %** of total volume of electricity purchased on both the power exchanges.

8. ANALYSIS OF MOVEMENT OF PRICES OBSERVED IN REAL TIME MARKET (RTM) TRANSACTIONS IN APRIL, 2021

- 8.1. 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 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 **0.65**. 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 April, 2021 for RTM transactions.
- 8.2. The Purchase Bids and the MCP discovered in each of the 15-minute time block during the month almost followed the same trend [Annexure IX]. This is also corroborated with the outcome of regression analysis mentioned at **para 8.1** above.
- 8.3. The Total Purchase Bid, Total Sell Bid, Daily MCP and FSV are shown in Figure-4 below:

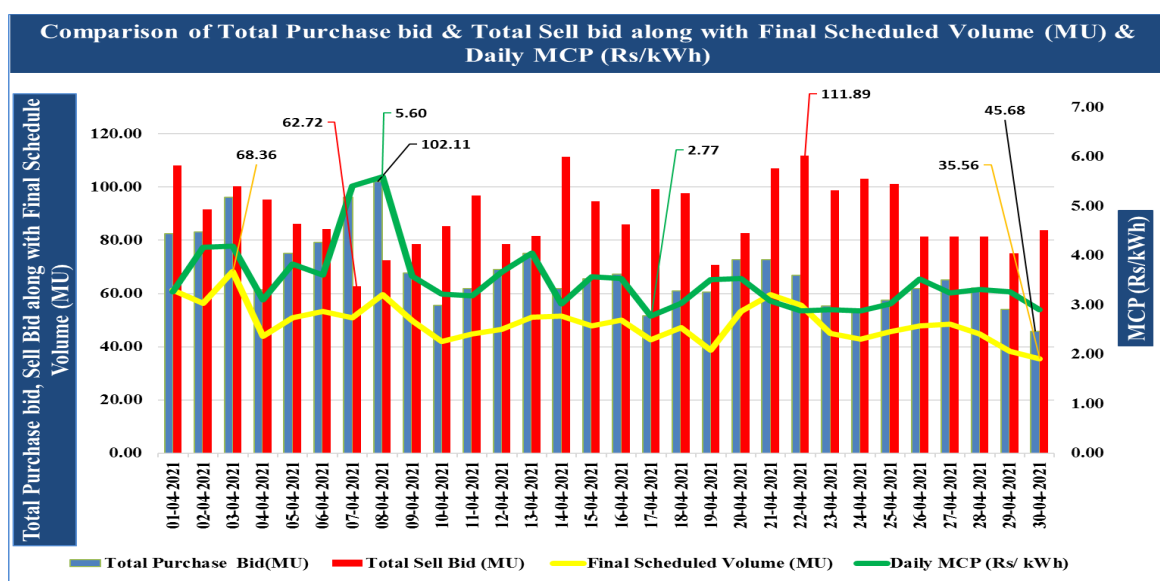


Figure-4

8.4. A comparison of maximum, minimum, daily, non-peak time, peak time MCP is shown in **Figure-5**. The same are also tabulated in **Annexure VIII**.

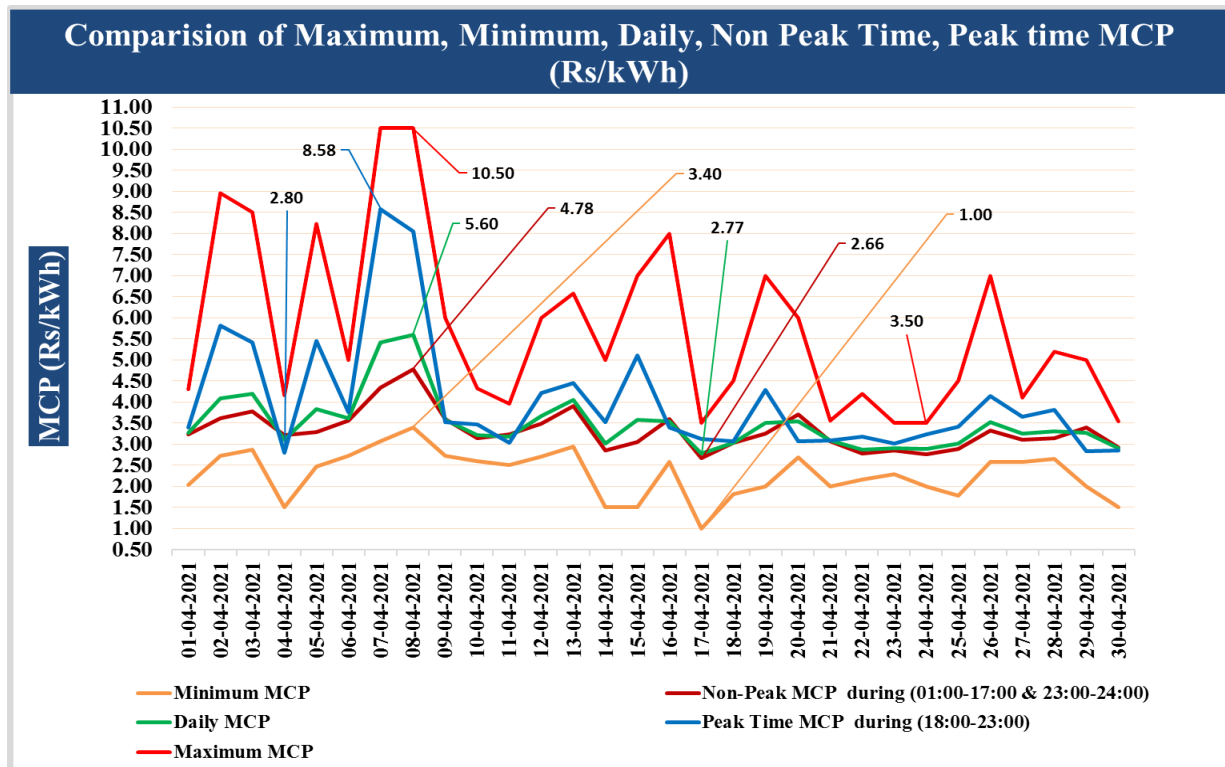


Figure-5

- 8.5. On **8 days** during the month, the maximum FSV occurred during the **time period 16:00-18:00 Hrs.** [Annexure X]
- 8.6. On **7 days** during the month, the maximum MCP occurred during the **time period 18:45-19:45 Hrs.** [Annexure X]
- 8.7. On **6 days** during the month, the minimum FSV occurred during the **time period 08:15-10:00 Hrs.** [Annexure X]
- 8.8. On **10 days** during the month, the minimum MCP occurred during the **time period 12:45-14:15 Hrs.** [Annexure X]
- 8.9. There was **no** real time curtailment in IEX in Real Time Market during April, 2021 and March, 2021, whereas, no transaction of electricity happened in PXIL during April, 2021 and March, 2021.
- 8.10. In the month of April, 2021, there was congestion of **0.64 MU** in transmission system in IEX in Real Time Market on account of congestion on **6 days** (i.e. 3rd, 13th, 17th, 22nd, 23rd and 29th April, 2021), hence, one nation one price was observed for **24 days** in IEX. Whereas, in PXIL, no transaction of electricity happened in April, 2021 in Real Time Market. Further, in the month of March, 2021, there was congestion of **7.30 MU** in transmission system in IEX in Real Time Market on account of congestion on **17 days** (i.e. 6th, 8th, 10th, 13th, 17th, 19th,

20th, 22nd to 31st March, 2021), hence, one nation one price was observed for **14 days** in IEX. Whereas, in PXIL, no transaction of electricity happened in March, 2021 in Real Time Market.

- 8.11.** The **top 10 sellers** on the power exchanges in **RTM** in the month of April, 2021 were **Madhya Pradesh, Uttar Pradesh, Rajasthan, West Bengal, Chhattisgarh, Delhi, Telangana, Karnataka, DVC and RKM Power**, which constituted **70.39 %** of the market volume. [Annexure XI]
- 8.12.** The **top 10 purchasers** on the power exchanges in **RTM** in the month of April, 2021 were **J&K, Maharashtra, Andhra Pradesh, Telangana, Bihar, Gujarat, Odisha, West Bengal, Tamil Nadu and Rajasthan**, which constituted **80.53%** of the market volume. [Annexure XI]
- 8.13.** The total volume of electricity purchased by Discoms/Licensees in RTM in the month of April, 2021 was **1,451.88 MU**, which constituted **98.54 %** of total volume of electricity purchased on both the power exchanges.
- 8.14.** Similarly, the total volume of electricity purchased by Discoms/Licensees in RTM in the month of March, 2021 was **1,412.29 MU**, which constituted **99.88 %** of total volume of electricity purchased on both the power exchanges.

-
- Source DAM, TAM and RTM data: IEX and PXIL
 - Source Entity wise sale and purchase on PXs data: NLDC
 - Source Total Energy supplied: CEA
 - Source Generation & other data for Regression: NLDC and IEX

Final Scheduled Volume, Average MCP and Real-Time Curtailment in Day Ahead Market (DAM) for the months of April, 2021 to March, 2022 of IEX and PXIL

Quarter	Months	Final Scheduled Volume (MU)		Market Clearing Price (Rs/kWh)		Real Time Curtailment (MU)	
		IEX	PXIL	IEX	PXIL	IEX	PXIL
Quarter -I	April, 2021	5,699.22	4.73	3.70	3.69	0	0
Total Quarter -I	April - June, 2021	5,699.22	4.73			0	0
Total April, 2021 - March, 2022		5,699.22	4.73			0	0

-

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

Quarter	Months	Final Scheduled Volume (MU) on Trade Date Basis		
		IEX	PXIL	Total
Quarter -I	April, 2021	325.78	651.35	977.13
Total Quarter -I	April - June, 2021	325.78	651.35	977.13
Total April, 2021 - March, 2022		325.78	651.35	977.13

Quarter	Months	Final Scheduled Volume (MU) on Delivery Date Basis		
		IEX	PXIL	Total
Quarter -I	April, 2021	348.58	576.72	925.30
Total Quarter -I	April - June, 2021	348.58	576.72	925.30
Total April, 2021 - March, 2022		348.58	576.72	925.30

Top Five Entities (Buyers and Sellers) in Bilateral transactions in the month of April, 2021

(i) Top five Buyers in Bilateral transactions

Entity Name	Direct		Entity Name	Through Traders	
	(MU)	Percent		(MU)	Percent
Chattisgarh	214.41	15.79%	Tamil Nadu	1381.69	29.61%
Haryana	211.12	15.55%	Gujarat	781.57	16.75%
Telangana	206.04	15.18%	Andhra Pradesh	277.43	5.95%
MP	193.00	14.22%	Maharashtra	265.36	5.69%
Odisha	143.05	10.54%	Odisha	204.57	4.38%
Total Volume	967.61	71.28%	Total Volume	2910.63	62.38%
Total Volume in Bilateral	1357.49		Total Volume in Bilateral	4666.18	

(ii) Top five Sellers in Bilateral transactions

Entity Name	Direct		Entity Name	Through Traders	
	(MU)	Percent		(MU)	Percent
MP	290.00	20.47%	Raipur Energen	785.97	17.06%
DVC	250.94	17.71%	Gujarat	483.24	10.49%
RKM_POWER	202.97	14.33%	JITPL	381.37	8.28%
SKS Raigarh	153.18	10.81%	Raigarh Energy	355.01	7.71%
Adhunik Power	135.97	9.60%	DB Power	300.66	6.53%
Total Volume	1033.07	72.92%	Total Volume	2306.25	50.06%
Total Volume in Bilateral	1416.75		Total Volume in Bilateral	4606.64	

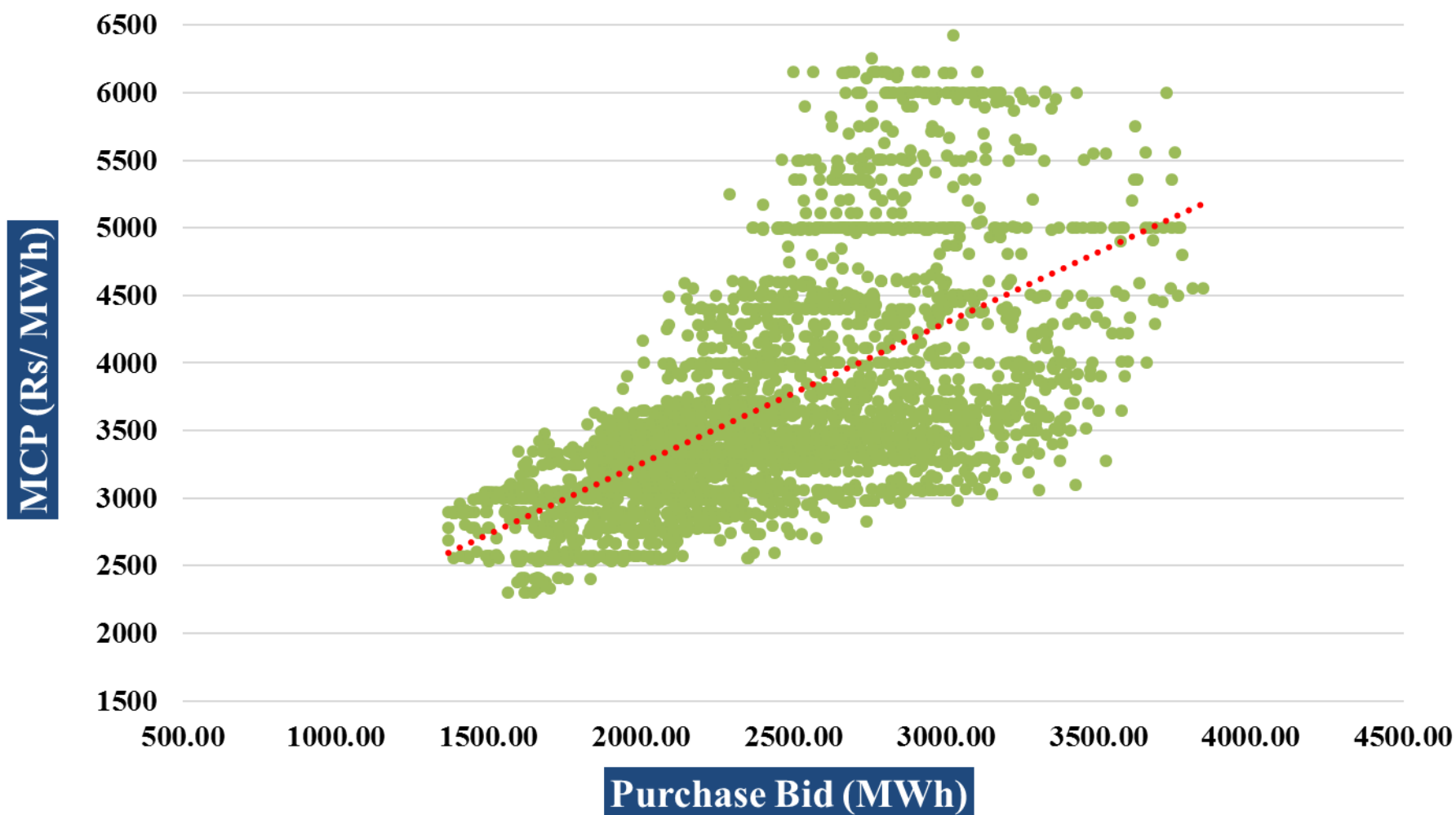
Evening MCP, Day MCP, Night MCP, Morning MCP, Maximum MCP, Minimum MCP, Average MCP and Final Scheduled Volume (MU) in DAM

Date	MCP during night (01:00-06:00, 23:00-24:00)	MCP during morning (07:00- 10:00)	MCP during day (11:00- 17:00)	MCP during evening (18:00- 23:00)	Maximum MCP	Minimum MCP	Average MCP	Final Scheduled Volume (MU)
01-04-2021	3.41	3.21	3.27	4.27	5.17	2.77	3.55	187.82
02-04-2021	3.58	3.42	3.12	3.90	4.78	2.89	3.50	207.68
03-04-2021	3.75	3.64	3.27	4.03	5.00	3.06	3.66	215.77
04-04-2021	4.06	3.62	2.97	3.46	5.00	2.56	3.52	223.16
05-04-2021	4.22	3.93	3.32	5.15	7.10	2.98	4.14	238.26
06-04-2021	3.92	4.25	3.23	3.52	5.95	2.73	3.67	220.26
07-04-2021	4.88	4.31	3.55	5.05	6.00	3.06	4.44	218.74
08-04-2021	5.54	4.45	3.54	5.46	6.90	3.07	4.75	201.69
09-04-2021	5.56	4.41	3.82	5.87	7.50	3.06	4.94	224.79
10-04-2021	4.12	3.69	3.21	4.57	7.00	2.85	3.89	229.73
11-04-2021	3.71	3.50	2.97	3.46	4.45	2.55	3.40	204.44
12-04-2021	3.63	3.79	3.21	4.87	5.78	2.73	3.85	194.24
13-04-2021	3.92	3.55	3.16	4.63	7.55	2.62	3.81	189.25
14-04-2021	4.20	3.55	2.99	4.43	6.50	2.55	3.79	182.91
15-04-2021	4.27	3.42	3.00	4.81	7.10	2.55	3.89	178.73
16-04-2021	3.70	3.14	3.03	3.87	4.50	2.56	3.45	175.27
17-04-2021	4.14	3.61	3.17	4.72	6.15	2.57	3.91	178.54
18-04-2021	3.39	3.15	2.61	3.29	3.89	2.30	3.09	165.27
19-04-2021	3.91	3.43	3.14	4.41	5.75	2.67	3.73	191.25
20-04-2021	4.14	3.66	3.28	5.04	6.25	2.75	4.04	189.11
21-04-2021	3.98	3.19	3.03	4.46	6.15	2.57	3.69	186.91
22-04-2021	3.86	3.24	3.00	3.97	6.00	2.56	3.53	187.68
23-04-2021	3.46	3.04	2.83	3.58	4.29	2.35	3.24	175.43
24-04-2021	3.19	2.91	2.72	3.62	4.26	2.30	3.12	162.24
25-04-2021	3.22	2.88	2.57	3.18	3.54	2.40	2.96	157.55
26-04-2021	3.43	3.05	2.93	3.98	4.99	2.56	3.36	163.42
27-04-2021	3.92	3.13	2.97	4.39	5.95	2.74	3.63	161.21
28-04-2021	3.55	2.93	2.89	3.54	4.55	2.54	3.25	143.55
29-04-2021	3.82	3.02	2.96	3.69	5.70	2.78	3.40	169.26
30-04-2021	4.32	3.30	3.14	4.52	6.75	2.85	3.86	175.05
Maximum	5.56	4.45	3.82	5.87	7.55	3.07	4.94	238.26
Minimum	3.19	2.88	2.57	3.18	3.54	2.30	2.96	143.55
Average	3.96	3.48	3.10	4.26	5.68	2.68	3.70	189.97

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 April, 2021



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

Annexure-VI**Maximum Final Schedule Volume (FSV), Minimum FSV, Maximum Market Clearing Price (MCP) and Minimum MCP in DAM**

Date	Max. FSV (MU)		Max. MCP (Rs/kWh)		Min FSV (MU)		Min. MCP (Rs/kWh)	
	Time Block	Value	Time Block	Value	Time Block	Value	Time Block	Value
01-04-2021	15:45 - 16:00	2.53	19:15 - 19:30	5.17	10:00 - 10:15	1.59	13:45 - 14:00	2.77
02-04-2021	06:30 - 06:45	2.68	19:45 - 20:00	4.78	13:45 - 14:00	1.75	13:45 - 14:00	2.89
03-04-2021	15:30 - 15:45	2.77	00:00 - 00:15	5.00	22:45 - 23:00	1.70	13:45 - 14:00	3.06
04-04-2021	15:45 - 16:00	2.91	00:00 - 00:15	5.00	18:15 - 18:30	1.90	13:30 - 13:45	2.56
05-04-2021	15:00 - 15:15	3.01	19:00 - 19:15	7.10	23:30 - 23:45	2.01	13:30 - 13:45	2.98
06-04-2021	15:45 - 16:00	2.90	00:00 - 00:15	5.95	22:15 - 22:30	1.79	13:30 - 13:45	2.73
07-04-2021	07:15 - 07:30	2.85	21:30 - 21:45	6.00	18:00 - 18:15	1.75	13:15 - 13:30	3.06
08-04-2021	06:45 - 07:00	2.71	01:15 - 01:30	6.90	22:45 - 23:00	1.70	13:45 - 14:00	3.07
09-04-2021	06:45 - 07:00	2.94	00:00 - 00:15	7.50	09:30 - 09:45	1.96	13:15 - 13:30	3.06
10-04-2021	06:45 - 07:00	3.07	23:15 - 23:30	7.00	10:00 - 10:15	1.95	13:30 - 13:45	2.85
11-04-2021	07:00 - 07:15	2.98	00:00 - 00:15	4.45	18:00 - 18:15	1.74	13:15 - 13:30	2.55
12-04-2021	07:15 - 07:30	2.76	22:15 - 22:30	5.78	02:00 - 02:15	1.47	13:00 - 13:15	2.73
13-04-2021	16:45 - 17:00	2.54	23:00 - 23:15	7.55	09:45 - 10:00	1.60	13:15 - 13:30	2.62
14-04-2021	07:15 - 07:30	2.50	00:00 - 00:15	6.50	03:00 - 03:15	1.44	13:45 - 14:00	2.55
15-04-2021	06:45 - 07:00	2.34	23:30 - 23:45	7.10	10:00 - 10:15	1.37	13:15 - 13:30	2.55
16-04-2021	15:30 - 15:45	2.20	00:00 - 00:15	4.50	03:45 - 04:00	1.46	17:00 - 17:15	2.56
17-04-2021	07:15 - 07:30	2.45	19:00 - 19:15	6.15	01:45 - 02:00	1.50	13:15 - 13:30	2.57
18-04-2021	07:15 - 07:30	2.36	23:15 - 23:30	3.89	03:45 - 04:00	1.36	13:45 - 14:00	2.30
19-04-2021	07:00 - 07:15	2.76	23:00 - 23:15	5.75	23:45 - 24:00	1.56	13:30 - 13:45	2.67
20-04-2021	07:00 - 07:15	2.74	19:30 - 19:45	6.25	10:15 - 10:30	1.52	13:30 - 13:45	2.75
21-04-2021	06:45 - 07:00	2.60	00:00 - 00:15	6.15	02:45 - 03:00	1.45	08:15 - 08:30	2.57
22-04-2021	06:30 - 06:45	2.55	23:30 - 23:45	6.00	03:00 - 03:15	1.58	13:30 - 13:45	2.56
23-04-2021	16:00 - 16:15	2.36	00:00 - 00:15	4.29	01:30 - 01:45	1.42	13:30 - 13:45	2.35
24-04-2021	18:45 - 19:00	2.37	22:45 - 23:00	4.26	03:00 - 03:15	1.08	13:15 - 13:30	2.30
25-04-2021	06:30 - 06:45	2.08	23:00 - 23:15	3.54	03:45 - 04:00	1.19	13:30 - 13:45	2.40
26-04-2021	18:45 - 19:00	2.22	21:00 - 21:15	4.99	13:15 - 13:30	1.27	08:15 - 08:30	2.56
27-04-2021	21:45 - 22:00	2.26	21:15 - 21:30	5.95	13:00 - 13:15	1.22	13:30 - 13:45	2.74
28-04-2021	07:00 - 07:15	1.92	00:00 - 00:15	4.55	10:15 - 10:30	1.13	08:00 - 08:15	2.54
29-04-2021	21:45 - 22:00	2.28	23:30 - 23:45	5.70	12:45 - 13:00	1.34	13:30 - 13:45	2.78
30-04-2021	21:45 - 22:00	2.33	00:00 - 00:15	6.75	10:15 - 10:30	1.32	08:00 - 08:15	2.85

MCP: Market Clearing Price (Rs/kWh)**FSV: Final Scheduled Volume (MU)**

Annexure-VII**Sellers and Purchasers in Day Ahead Market (DAM) in the month of April, 2021**

S. No.	Entity Name	Sell		Entity Name	Purchase	
		(MU)	Percent (%)		(MU)	Percent (%)
1.	Uttar Pradesh	1094.17	19.18%	Andhra Pradesh	1238.20	21.71%
2.	Madhya Pradesh	539.88	9.47%	Gujarat	989.33	17.34%
3.	Rajasthan	504.50	8.84%	Telangana	590.76	10.36%
4.	Delhi	398.18	6.98%	Maharashtra	558.44	9.79%
5.	Sembcorp Gayatri	319.84	5.61%	Tamilnadu	439.56	7.71%
6.	Teesta -3	179.38	3.14%	Uttarakhand	303.67	5.32%
7.	Jaypee Nigrie	175.86	3.08%	J&K	204.09	3.58%
8.	Haryana	170.81	2.99%	Bihar	190.64	3.34%
9.	Telangana	160.05	2.81%	Uttar Pradesh	155.66	2.73%
10.	Chhattisgarh	158.94	2.79%	West Bengal	153.58	2.69%
11.	Jindal Power	147.95	2.59%	Assam	149.88	2.63%
12.	RKM Power	143.24	2.51%	Jharkhand	114.66	2.01%
13.	Karnataka	113.02	1.98%	Himachal Pradesh	102.74	1.80%
14.	Thermal Powertech	97.54	1.71%	Madhya Pradesh	73.16	1.28%
15.	Himachal Pradesh	88.63	1.55%	Rajasthan	64.76	1.14%
16.	JITPL	87.04	1.53%	ArcelorMittal Nippon	53.26	0.93%
17.	DB Power	86.17	1.51%	Punjab	51.45	0.90%
18.	Essar Power MP Ltd	83.43	1.46%	Karnataka	48.91	0.86%
19.	West Bengal	73.45	1.29%	Haryana	45.77	0.80%
20.	Adhunik Power	67.95	1.19%	Orissa	42.85	0.75%
21.	MB Power	66.14	1.16%	Goa WR	21.41	0.38%
22.	Adani Power STG2	62.76	1.10%	Dadra & Nagar Haveli	21.01	0.37%
23.	Adani Power STG3	61.78	1.08%	Kerala	18.72	0.33%
24.	Spectrum Coal	59.66	1.05%	E0XNPO	16.47	0.29%
25.	DVC	58.35	1.02%	Delhi	14.70	0.26%
26.	Bihar	57.81	1.01%	Arunachal Pradesh	11.31	0.20%
27.	IL&FS	54.89	0.96%	Nagaland	9.23	0.16%
28.	Maruti Clean Coal	52.56	0.92%	Tripura	6.16	0.11%
29.	Orissa	46.34	0.81%	Daman & Diu	5.72	0.10%
30.	GMR Kamalanga	41.08	0.72%	Meghalaya	3.28	0.06%
31.	Maharashtra	40.98	0.72%	Goa SR	1.75	0.03%
32.	Bongaigaon	39.01	0.68%	Chandigarh	1.51	0.03%
33.	ACBIL	32.53	0.57%	Mizoram	0.93	0.02%
34.	Kerala	22.37	0.39%	Manipur	0.36	0.01%
35.	Raipur Energen	21.23	0.37%			
36.	Shree Cement	21.11	0.37%			
37.	Tamilnadu	19.14	0.34%			
38.	Chandigarh	19.08	0.33%			
39.	Assam	18.57	0.33%			
40.	Jhabua Power	18.46	0.32%			

41.	Andhra Pradesh	18.12	0.32%			
42.	Torrent Power	17.18	0.30%			
43.	Dikchu	16.97	0.30%			
44.	Karcham Wangtoo	14.65	0.26%			
45.	NTPL	13.14	0.23%			
46.	Singoli Bhagwati	12.43	0.22%			
47.	Sainj HEP	11.72	0.21%			
48.	Jindal Power Ltd. Stg-II	11.46	0.20%			
49.	Guarat	11.34	0.20%			
50.	Goa WR	10.73	0.19%			
51.	Punjab	9.74	0.17%			
52.	Palatana	7.97	0.14%			
53.	NLC TPS-II	7.54	0.13%			
54.	AD Hydro	4.82	0.08%			
55.	BALCO 2	4.70	0.08%			
56.	TRN Energy	4.08	0.07%			
57.	RGPP	4.02	0.07%			
58.	Dadra & Nagar Haveli	2.92	0.05%			
59.	Sikkim	2.78	0.05%			
60.	Ramagundam Stg-1	2.43	0.04%			
61.	Chuzachen	1.94	0.03%			
62.	Tripura	1.61	0.03%			
63.	Mizoram	1.53	0.03%			
64.	Dhariwal	1.30	0.02%			
65.	Arunachal Pradesh	1.23	0.02%			
66.	Lanco Budhil	1.09	0.02%			
67.	Simhadri Stg-2	1.08	0.02%			
68.	Nagaland	0.91	0.02%			
69.	Jharkhand	0.30	0.01%			
70.	Uttarakhand	0.24	0.00%			
71.	Raigarh Energy Ltd.	0.12	0.00%			
Total Volume of top 10		3,701.61	64.90%	Total Volume of top 10	4,823.94	84.57%
Total Volume in PXs		5,703.95		Total Volume in PXs	5,703.95	

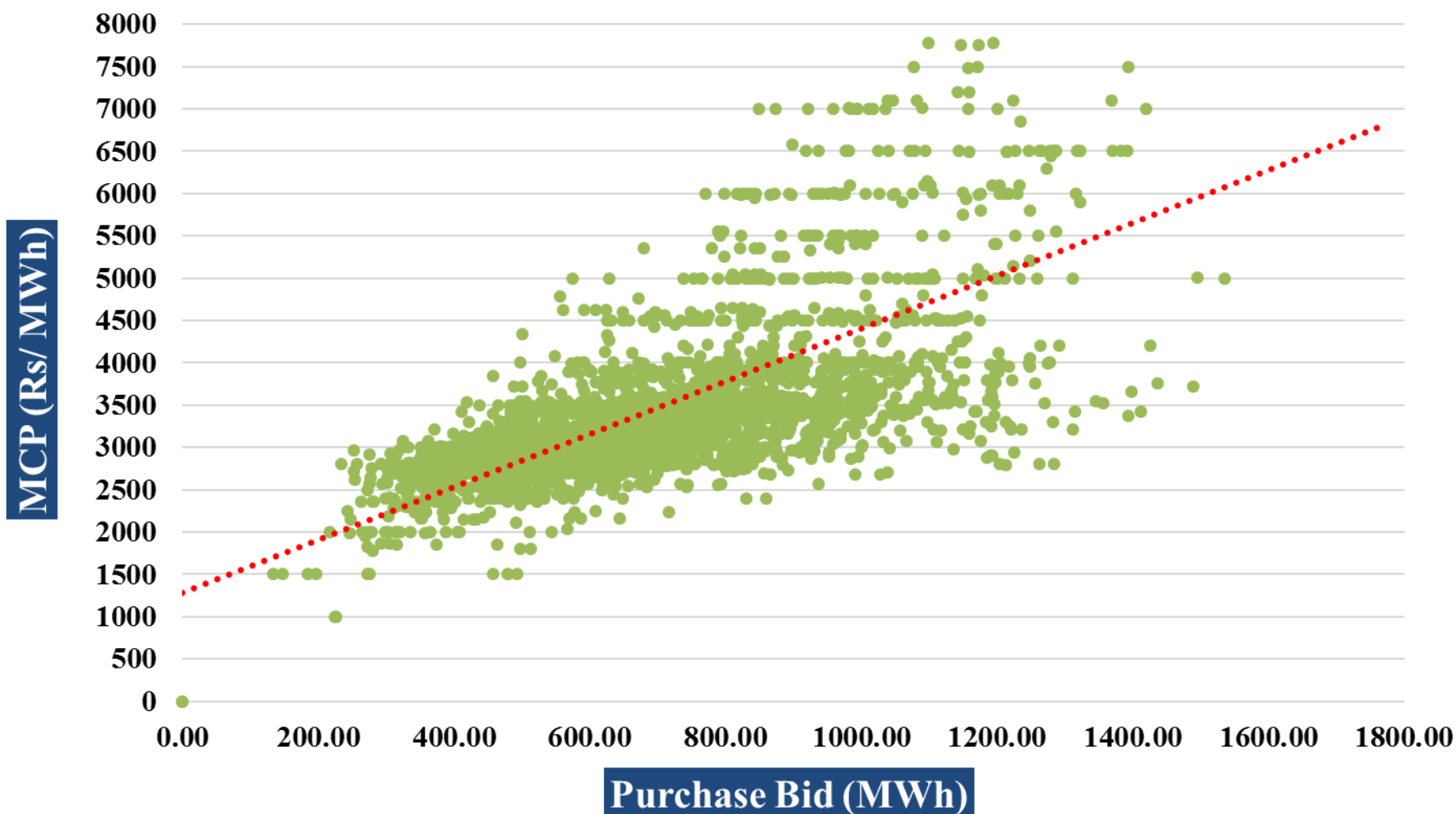
Annexure-VIII**Peak Time MCP, Non-Peak MCP, Maximum MCP, Minimum MCP, Average MCP and Final Scheduled Volume (MU) in RTM**

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)
01-04-2021	3.41	3.51	2.87	3.41	3.23	4.30	2.04	3.27	61.39
02-04-2021	4.11	3.23	3.33	5.82	3.61	8.96	2.72	4.08	56.42
03-04-2021	4.03	4.02	3.40	5.42	3.78	8.50	2.87	4.19	68.36
04-04-2021	3.41	3.54	2.82	2.80	3.21	4.15	1.50	3.10	43.87
05-04-2021	3.40	3.05	3.31	5.44	3.29	8.24	2.46	3.83	50.87
06-04-2021	3.86	3.92	3.05	3.76	3.56	5.00	2.72	3.61	53.16
07-04-2021	4.53	4.05	4.34	8.58	4.35	10.50	3.07	5.41	50.94
08-04-2021	5.25	5.19	4.08	8.05	4.78	10.50	3.40	5.60	59.50
09-04-2021	4.16	3.58	3.05	3.52	3.60	6.00	2.72	3.58	49.71
10-04-2021	3.34	3.16	2.90	3.47	3.13	4.33	2.60	3.22	42.04
11-04-2021	3.47	3.17	3.02	3.03	3.23	3.96	2.50	3.18	44.78
12-04-2021	3.55	3.31	3.50	4.22	3.48	6.00	2.71	3.66	46.50
13-04-2021	4.33	3.69	3.62	4.45	3.91	6.58	2.95	4.05	51.00
14-04-2021	3.10	2.36	2.87	3.52	2.85	5.00	1.50	3.02	51.59
15-04-2021	3.70	2.73	2.60	5.11	3.06	7.00	1.50	3.57	47.75
16-04-2021	3.91	3.64	3.24	3.39	3.59	8.00	2.57	3.54	49.92
17-04-2021	2.92	2.27	2.63	3.12	2.66	3.51	1.00	2.77	42.59
18-04-2021	3.54	3.15	2.44	3.07	3.03	4.50	1.81	3.04	47.27
19-04-2021	3.49	3.01	3.15	4.28	3.25	7.00	2.00	3.51	38.82
20-04-2021	4.17	3.73	3.21	3.07	3.70	6.00	2.69	3.54	53.20
21-04-2021	3.19	3.13	2.93	3.09	3.08	3.55	2.00	3.08	59.57
22-04-2021	2.75	2.90	2.72	3.18	2.77	4.20	2.16	2.88	55.62
23-04-2021	3.03	2.75	2.75	3.02	2.86	3.50	2.29	2.90	45.02
24-04-2021	2.97	2.79	2.55	3.24	2.77	3.50	2.00	2.88	42.81
25-04-2021	3.54	2.81	2.28	3.42	2.89	4.50	1.78	3.02	45.74
26-04-2021	3.80	2.91	3.08	4.14	3.32	7.00	2.57	3.53	47.91
27-04-2021	3.29	2.81	3.10	3.64	3.11	4.10	2.57	3.24	48.47
28-04-2021	3.25	2.87	3.19	3.82	3.14	5.20	2.65	3.31	44.80
29-04-2021	3.52	2.93	3.56	2.84	3.40	5.00	2.00	3.26	38.21
30-04-2021	2.87	2.82	3.03	2.85	2.92	3.53	1.50	2.90	35.56
Maximum	5.25	5.19	4.34	8.58	4.78	10.50	3.40	5.60	68.36
Minimum	2.75	2.27	2.28	2.80	2.66	3.50	1.00	2.77	35.56
Average	3.60	3.23	3.09	4.03	3.32	5.74	2.30	3.50	49.11

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 April, 2021



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

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
01-04-2021	16:45-17:00	1.10	07:15-07:30	4.30	04:00-04:15	0.24	13:00-13:15	2.04
02-04-2021	15:00-15:15	1.17	23:00-23:15	8.96	00:15-00:30	0.27	13:15-13:30	2.72
03-04-2021	14:30-14:45	1.12	19:30-19:45	8.50	19:45-20:00	0.32	13:45-14:00	2.87
04-04-2021	07:15-07:30	0.68	06:45-07:00	4.15	09:45-10:00	0.28	20:00-20:15	1.50
05-04-2021	16:00-16:15	0.80	20:30-20:45	8.24	11:00-11:15	0.32	05:30-05:45	2.46
06-04-2021	18:15-18:30	0.89	19:30-19:45	5.00	09:00-09:15	0.36	14:00-14:15	2.72
07-04-2021	17:00-17:15	0.90	20:15-20:30	10.50	01:30-01:45	0.16	05:45-06:00	3.07
08-04-2021	16:00-16:15	0.96	19:30-19:45	10.50	18:45-19:00	0.29	13:00-13:15	3.40
09-04-2021	06:30-06:45	0.85	01:45-02:00	6.00	04:00-04:15	0.23	13:00-13:15	2.72
10-04-2021	07:30-07:45	0.75	19:00-19:15	4.33	18:45-19:00	0.21	12:45-13:00	2.60
11-04-2021	13:45-14:00	0.83	06:15-06:30	3.96	04:30-04:45	0.29	17:45-18:00	2.50
12-04-2021	06:30-06:45	0.71	23:45-24:00	6.00	23:45-24:00	0.30	03:15-03:30	2.71
13-04-2021	16:15-16:30	0.87	22:00-22:15	6.58	04:15-04:30	0.29	12:15-12:30	2.95
14-04-2021	21:00-21:15	0.99	00:15-00:30	5.00	08:15-08:30	0.13	08:15-08:30	1.50
15-04-2021	20:00-20:15	0.81	23:30-23:45	7.00	15:00-15:15	0.31	11:15-11:30	1.50
16-04-2021	17:30-17:45	0.85	00:15-00:30	8.00	13:30-13:45	0.24	14:00-14:15	2.57
17-04-2021	23:30-23:45	0.80	23:30-23:45	3.51	09:15-09:30	0.16	08:45-09:00	1.00
18-04-2021	07:00-07:15	0.83	22:30-22:45	4.50	12:30-12:45	0.21	10:30-10:45	1.81
19-04-2021	15:00-15:15	0.70	23:15-23:30	7.00	02:45-03:00	0.21	09:30-09:45	2.00
20-04-2021	23:00-23:15	0.78	00:30-00:45	6.00	00:15-00:30	0.25	17:45-18:00	2.69
21-04-2021	21:30-21:45	1.23	22:45-23:00	3.55	13:15-13:30	0.24	13:00-13:15	2.00
22-04-2021	17:00-17:15	0.75	18:45-19:00	4.20	06:15-06:30	0.33	13:30-13:45	2.16
23-04-2021	16:30-16:45	0.65	18:45-19:00	3.50	02:45-03:00	0.22	02:00-02:15	2.29
24-04-2021	23:45-24:00	0.65	21:15-21:30	3.50	10:15-10:30	0.31	10:15-10:30	2.00
25-04-2021	05:00-05:15	0.88	01:30-01:45	4.50	11:15-11:30	0.25	11:30-11:45	1.78
26-04-2021	14:00-14:15	0.74	19:15-19:30	7.00	09:15-09:30	0.23	07:30-07:45	2.57
27-04-2021	23:45-24:00	0.78	22:45-23:00	4.10	05:45-06:00	0.20	08:30-08:45	2.57
28-04-2021	20:15-20:30	0.78	23:00-23:15	5.20	05:45-06:00	0.21	03:45-04:00	2.65
29-04-2021	14:15-14:30	0.70	16:30-16:45	5.00	08:45-09:00	0.21	23:45-24:00	2.00
30-04-2021	23:30-23:45	0.80	16:45-17:00	3.53	00:00-00:15	0.18	00:00-00:15	1.50

MCP: Market Clearing Price (Rs/kWh)

FSV: Final Scheduled Volume (MU)

Annexure-XI**Sellers and Purchasers in Real Time Market (RTM) in the month of April, 2021**

S. No.	Entity Name	Sell		Entity Name	Purchase	
		(MU)	Percent (%)		(MU)	Percent (%)
1.	Madhya Pradesh	227.05	15.63%	J&K	244.99	16.87%
2.	Uttar Pradesh	189.43	13.04%	Maharashtra	150.81	10.38%
3.	Rajasthan	145.38	10.01%	Andhra Pradesh	141.09	9.71%
4.	West Bengal	99.51	6.85%	Telangana	115.50	7.95%
5.	Chhattisgarh	75.24	5.18%	Bihar	112.34	7.73%
6.	Delhi	74.86	5.15%	Gujarat	101.06	6.96%
7.	Telangana	67.45	4.64%	Orissa	89.44	6.16%
8.	Karnataka	53.76	3.70%	West Bengal	85.41	5.88%
9.	DVC	45.53	3.13%	Tamilnadu	72.05	4.96%
10.	RKM Power	44.12	3.04%	Rajasthan	56.92	3.92%
11.	Orissa	38.52	2.65%	Uttar Pradesh	45.78	3.15%
12.	Kameng HEP	29.55	2.03%	Assam	39.57	2.72%
13.	Himachal Pradesh	28.58	1.97%	Punjab	39.46	2.72%
14.	Khargone STPP	16.01	1.10%	Tripura	36.14	2.49%
15.	NLC TPS-II Stg-2	15.52	1.07%	Delhi	16.79	1.16%
16.	MB Power	14.47	1.00%	Jharkhand	16.32	1.12%
17.	Assam	13.76	0.95%	Haryana	13.11	0.90%
18.	NLC TPS-II	13.01	0.90%	Himachal Pradesh	12.88	0.89%
19.	Jindal Power	11.51	0.79%	DVC	11.73	0.81%
20.	Bihar	10.76	0.74%	Manipur	9.20	0.63%
21.	Sembcorp Gayatri	10.15	0.70%	Meghalaya	8.06	0.55%
22.	Adani Power STG2	10.03	0.69%	Karnataka	7.45	0.51%
23.	Mouda Stg-2	9.87	0.68%	Kerala	7.11	0.49%
24.	NTPC Gadarwara	9.87	0.68%	Chhattisgarh	4.58	0.32%
25.	Teesta -3	9.54	0.66%	Madhya Pradesh	4.08	0.28%
26.	Jindal Power Ltd. Stg-II	9.32	0.64%	Uttarakhand	2.81	0.19%
27.	NTPL	9.10	0.63%	Goa WR	2.36	0.16%
28.	NTPC Kudgi	9.04	0.62%	Dadra & Nagar Haveli	1.63	0.11%
29.	BALCO 2	8.77	0.60%	Arunachal Pradesh	1.05	0.07%
30.	Bongaigaon	7.90	0.54%	Sikkim	0.78	0.05%
31.	IL&FS	7.89	0.54%	Mizoram	0.52	0.04%
32.	Adani Power STG3	7.77	0.54%	ArcelorMittal Nippon	0.51	0.03%
33.	Sikkim	7.71	0.53%	Goa SR	0.49	0.03%
34.	Haryana	7.70	0.53%	Nagaland	0.34	0.02%
35.	Sasan UMPP	7.57	0.52%	ACBIL	0.04	0.00%
36.	Kerala	6.27	0.43%	Daman & Diu	0.02	0.00%
37.	Maharashtra	6.23	0.43%	Jhabua Power	0.02	0.00%
38.	NTPC Sholapur	5.75	0.40%			

39.	NLC TPS-II Expn	4.95	0.34%			
40.	Thermal Powertech	4.76	0.33%			
41.	Punjab	4.55	0.31%			
42.	Dikchu	4.35	0.30%			
43.	Torrent Power	4.11	0.28%			
44.	Auraiya	4.00	0.28%			
45.	Jharkhand	3.96	0.27%			
46.	Ramagundam Stg-1	3.75	0.26%			
47.	Jhabua Power	3.68	0.25%			
48.	Farakka	3.53	0.24%			
49.	Mouda Stg-1	3.22	0.22%			
50.	Gujarat	3.03	0.21%			
51.	Dadri GPP	2.91	0.20%			
52.	Tripura	2.91	0.20%			
53.	Barh Stg-2	2.34	0.16%			
54.	Palatana	2.11	0.15%			
55.	Shree Cement	1.96	0.14%			
56.	Simhadri Stg-2	1.72	0.12%			
57.	Raipur Energen	1.66	0.11%			
58.	Manipur	1.52	0.10%			
59.	J&K	1.48	0.10%			
60.	NLC	1.47	0.10%			
61.	Meghalaya	1.39	0.10%			
62.	Farakka Stg 3	1.38	0.09%			
63.	Tanda Stg-2	1.30	0.09%			
64.	RGPPL_IR	1.26	0.09%			
65.	Tamilnadu	1.24	0.09%			
66.	BRBCL	1.18	0.08%			
67.	AGBPP	1.07	0.07%			
68.	Simhadri Stg-1	0.89	0.06%			
69.	Singoli Bhagwati	0.80	0.06%			
70.	Andhra Pradesh	0.74	0.05%			
71.	Rihand-II	0.68	0.05%			
72.	Sainj HEP	0.67	0.05%			
73.	GMR Kamalanga	0.65	0.04%			
74.	Karcham Wangtoo	0.63	0.04%			
75.	Neyveli New Thermal	0.62	0.04%			
76.	AGTPP	0.59	0.04%			
77.	RGPPL	0.54	0.04%			
78.	SKS Power	0.51	0.04%			
79.	Gandhar_NAPM	0.47	0.03%			
80.	Ramagundam Stg-3	0.46	0.03%			
81.	Chuzachen	0.35	0.02%			
82.	RGPPL_Others	0.34	0.02%			
83.	Chandigarh	0.34	0.02%			
84.	Uttarakhand	0.29	0.02%			

85.	Auraiya_RLNG Fuel	0.24	0.02%			
86.	DB Power	0.21	0.01%			
87.	GMR Warora	0.15	0.01%			
88.	Ranganadi	0.14	0.01%			
89.	ACBIL	0.13	0.01%			
90.	Dhariwal	0.12	0.01%			
91.	NSPCL Bhilai	0.12	0.01%			
92.	Spectrum Coal	0.08	0.01%			
93.	AD Hydro	0.07	0.00%			
94.	Kawas_RLNG Fuel	0.07	0.00%			
95.	Gandhar	0.06	0.00%			
96.	Maruti Clean Coal	0.05	0.00%			
97.	Gandhar_RLNG Fuel	0.03	0.00%			
98.	Pare HEP	0.02	0.00%			
99.	Jorethang	0.02	0.00%			
100.	Khandong	0.02	0.00%			
101.	Doyang	0.01	0.00%			
	Total Volume of top 10	1022.33	70.39%	Total Volume of top 10	1,169.61	80.53%
	Total Volume in PXs	1,452.43*		Total Volume in PXs	1,452.43	

- Based on Figure of NLDC for RTM Transactions during April, 2021.

Annexure-XII**Cross Border Electricity Transactions in Day Ahead Market (DAM) in IEX with Nepal During the month of April, 2021**

S. No	Delivery Date	Traded Volume (MU)
1	18-04-2021	1.04
2	19-04-2021	1.51
3	20-04-2021	0.60
4	21-04-2021	1.23
5	22-04-2021	1.54
6	23-04-2021	2.05
7	24-04-2021	2.31
8	25-04-2021	1.38
9	26-04-2021	0.87
10	27-04-2021	0.68
11	28-04-2021	1.21
12	29-04-2021	1.21
13	30-04-2021	0.84
Total		16.47

Note: *Cross Border Transactions of Electricity of 16.47 MU (purchase only) happened with Nepal only during April, 2021.*

Appendix-I**Analysis for change in trend of Final Scheduled Volume in DAM on 01st Saturday and 2nd Monday of April, 2021 (i.e. 03rd and 12th April, 2021)**

Final Scheduled Volume (MU) and the Daily MCP (Rs/kWh) invariably shows decreasing trend on Sundays as the demand of electricity in the country is less compared to other days of week. However, during the month of April, 2021, it is observed that on second Monday (i.e. 12th April, 2021), FSV showed decreasing trend in comparison to second Sunday (i.e. 11th April, 2021) and on first Sunday (i.e. 04th April, 2021), FSV showed increasing trend in comparison to first Saturday (i.e. 03rd April, 2021). On analysis, it has been found as under:

- (i) On second Monday (12th April, 2021), although there was increase in purchase on power exchange by some of the States in comparison to Sunday (11th April, 2021) by **26.91 MU** [i.e. Gujarat (10.45 MU), Tamil Nadu (6.32 MU), Himachal Pradesh (3.26 MU), West Bengal (1.90 MU) and Rajasthan (0.64 MU), etc.], there was also decrease in purchase on power exchange by some of the States by **36.19 MU** [i.e. Telangana (18.03 MU), Maharashtra (10.91 MU), Andhra Pradesh (5.03 MU), J&K (1.75 MU) and Karnataka (0.35 MU) etc.]. This resulted in an overall decrease in FSV by **10.20 MU** on Monday (12th April, 2021).
- (ii) On first Sunday (04th April, 2021), although there was decrease in purchase on power exchange by some of the States in comparison to first Saturday (03rd April, 2021) by **15.20 MU** [i.e. Gujarat (6.17 MU), Uttar Pradesh (3.18 MU), Uttarakhand (2.01 MU), Tamil Nadu (1.03 MU) and Andhra Pradesh (1.02 MU), etc.], there was also increase in purchase on power exchange by some of the States by **22.73 MU** [i.e. Maharashtra (13.18 MU), Telangana (2.90 MU), Bihar (2.47 MU), J&K (1.60 MU) and Dadar & Nagar Haveli (1.21 MU), etc.]. This resulted in an overall increase in FSV by **7.39 MU** on Sunday (04th April, 2021).

Definitions/ Terminologies used in the Report

1. **Area Clearing Price (ACP)** is price discovered in each time block of concerned bid area. The country has been divided into 13 bid areas for the purpose of calculating prices in Power Exchanges.

13 Bid area are as under:

N1:Jammu and Kashmir, Himachal Pradesh, Chandigarh, Haryana; **N2:** Uttar Pradesh, Uttaranchal, Rajasthan, Delhi; **N3:** Punjab; **E1:** West Bengal, Sikkim, Bihar, Jharkhand; **E2:** Odisha; **W1:** Madhya Pradesh; **W2:** Maharashtra, Gujarat, Daman and Diu, Dadar and Nagar Haveli, North Goa; **W3:** Chhattisgarh; **S1:** Andhra Pradesh, Telangana, Karnataka, Pondicherry (Yanam), South Goa; **S2:** Tamil Nadu, Pondicherry (Puducherry), Pondicherry (Karaikal), Pondicherry (Mahe); **S3:** Kerala; **A1:** Tripura, Manipur, Mizoram, Nagaland; **A2:** Assam, Arunachal Pradesh, Meghalaya.

2. **Average MCP** is the average of daily MCP of the days during the month on which transaction happened.
3. **Bilateral Transaction** means a transaction for exchange of electrical energy (MWh) between a specified buyer and a specified seller, from a specified point of injection to a specified point of drawal for a fixed or varying quantum of power (MW) for any time block during a month.
4. **Daily MCP** is the average of MCP of all 96 Time Blocks of the day during which transaction happened.
5. **Day-Ahead Market (DAM)** on the power exchanges are market for electricity where market participants purchase and sell electricity at financially binding day-ahead prices for the following day.
6. **Elasticity** is percentage of change in MCP with respect to change in independent variable viz. peak demand, average purchase bid, average sell bid, generation from coal based plants, generation from hydro based plants, generation from wind based plants and generation from solar plants.
7. **Energy Supplied** is the total energy (MU) available at the States' periphery.
8. **Final Scheduled Volume** is the total of scheduled volume of all 96 time blocks in a day during the month in which transaction happened.
9. **Green Term Ahead Market (GTAM)** is based on the principles of current Term Ahead Market (TAM) and will offer trade through Intra-Day Contracts, Day ahead contingency Contracts, Daily Contracts and Weekly Contracts for both solar and non-Solar Renewable Energy (RE) generation. GTAM is a market-based mechanism, where RE surplus and RE deficit States can trade RE Power and balance their RPO targets.
10. **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.
11. **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.

- 12. 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.