



# जुलाई, 2021 मासिक मार्केट मॉनिटरिंग रिपोर्ट

## Monthly Market Monitoring Report

July, 2021



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:

## TABLE OF CONTENTS

| S.N. | Title                                                                     | Page |
|------|---------------------------------------------------------------------------|------|
| 1.   | Day Ahead Market (DAM)                                                    | 4    |
| 2.   | Summary of the Market in the Power Exchanges                              | 4    |
| 3.   | Term Ahead Market (TAM)                                                   | 6    |
| 4.   | Real Time Market (RTM)                                                    | 8    |
| 5.   | Green Term Ahead Market(GTAM)                                             | 9    |
| 6.   | Bilateral Transactions                                                    | 14   |
| 7.   | Analysis of movement of prices observed in DAM Transactions in July, 2021 | 16   |
| 8.   | Analysis of Movement of prices observed in RTM Transactions in July, 2021 | 19   |

### TABLES

|     |                                                                                                                           |    |
|-----|---------------------------------------------------------------------------------------------------------------------------|----|
| 1.  | <b>Table: 1A</b> Daily MCP of IEX and PXIL in DAM for July, 2021 vs June, 2021                                            | 5  |
| 2.  | <b>Table: 1B</b> Daily MCP of IEX and PXIL in DAM for July, 2021 vs July, 2020                                            | 5  |
| 3.  | <b>Table: 2A</b> ACP of IEX and PXIL in DAM for July, 2021 vs June, 2021                                                  | 5  |
| 4.  | <b>Table: 2B</b> ACP of IEX and PXIL in DAM for July, 2021 vs July, 2020                                                  | 6  |
| 5.  | <b>Table: 3A</b> FSV of IEX and PXIL in DAM for July, 2021 vs June, 2021                                                  | 6  |
| 6.  | <b>Table: 3B</b> FSV of IEX and PXIL in DAM for July, 2021 vs July, 2020                                                  | 6  |
| 7.  | <b>Table:4A</b> Volume transacted in TAM in PXs for July, 2021 vs June, 2021 (on trade date basis)                        | 7  |
| 8.  | <b>Table: 4B</b> Volume transacted in TAM in PXs for July, 2021 vs July, 2020 (on trade date basis)                       | 7  |
| 9.  | <b>Table: 4C</b> FSV of IEX and PXIL in TAM for July, 2021 vs June, 2021 (on delivery date basis)                         | 8  |
| 10. | <b>Table: 4D</b> FSV of IEX and PXIL in TAM for July, 2021 vs July, 2020 (on delivery date basis)                         | 8  |
| 11. | <b>Table: 5A</b> FSV of IEX and PXIL in RTM for July, 2021 vs June, 2021 and July, 2020                                   | 9  |
| 12. | <b>Table: 5B</b> Daily MCP of IEX and PXIL in RTM for July, 2021 vs June, 2021 and July, 2020                             | 9  |
| 13. | <b>Table: 5C</b> ACP of IEX and PXIL in RTM for July, 2021 vs June, 2021 and July, 2020                                   | 9  |
| 14. | <b>Table:6A</b> FSV of IEX and PXIL in Solar Segment of GTAM for July, 2021vs June, 2021(on Trade date basis)             | 10 |
| 15. | <b>Table: 6B</b> Daily MCP of IEX and PXIL in Solar Segment of GTAM for July, 2021 vs June, 2021 (on trade date basis)    | 10 |
| 16. | <b>Table: 6C</b> FSV of IEX and PXIL in Solar Segment of GTAM for July, 2021 vs June, 2021 (on delivery date basis)       | 11 |
| 17. | <b>Table: 6D</b> Daily MCP of IEX and PXIL in Solar Segment of GTAM for July, 2021 vs June, 2021 (on delivery date basis) | 12 |
| 18. | <b>Table: 6E</b> FSV of IEX & PXIL in Non-Solar Segment of GTAM for July, 2021 vs June, 2021 (on trade date basis)        | 12 |
| 19. | <b>Table: 6F</b> Daily MCP of IEX & PXIL in Non-Solar Segment of GTAM for July, 2021 vs June, 2021 (on trade date basis)  | 13 |

|     |                                                                                                                             |    |
|-----|-----------------------------------------------------------------------------------------------------------------------------|----|
| 20. | <b>Table: 6G</b> FSV of IEX & PXIL in Non-Solar Segment of GTAM for July, 2021 vs June, 2021 (on delivery date basis)       | 14 |
| 21. | <b>Table: 6H</b> Daily MCP of IEX & PXIL in Non-Solar Segment of GTAM for July, 2021 vs June, 2021 (on delivery date basis) | 14 |
| 22. | <b>Table: 7A</b> Total Buy and Sell volume in Bilateral transaction for July, 2021                                          | 15 |
| 23. | <b>Table: 7B</b> Region wise buy volume in Bilateral transaction for July, 2021                                             | 15 |
| 24. | <b>Table: 7C</b> Region wise sell volume in Bilateral transaction for July, 2021                                            | 15 |

## FIGURES

|    |                                                                                                                                                 |    |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 1. | <b>Figure: 1</b> Comparison of volume of electricity transacted through both PXs together in DAM and Bilateral buy (Direct and through Traders) | 15 |
| 2. | <b>Figure: 2</b> Comparison of Total Purchase, Sell bids along with FSV and Daily MCP in DAM                                                    | 16 |
| 3. | <b>Figure: 3</b> Comparison of Maximum, Minimum, Daily, Evening Time MCP (Rs/kWh) in DAM                                                        | 17 |
| 4. | <b>Figure: 4</b> MCP duration curve for 2976 Time Blocks in July, 2021 in DAM                                                                   | 17 |
| 5. | <b>Figure: 5</b> Daily MCP duration curve for the period 1 <sup>st</sup> April, 2021 to 31 <sup>st</sup> July, 2021 in DAM                      | 17 |
| 6. | <b>Figure: 6</b> Comparison of Total Purchase, Sell bids along with FSV and Daily MCP in RTM                                                    | 19 |
| 7. | <b>Figure: 7</b> Comparison of Maximum, Minimum, Daily, Evening Time MCP (Rs/kWh) in RTM                                                        | 20 |
| 8. | <b>Figure: 8</b> MCP duration curve for 2976 Time Blocks in July, 2021 in RTM                                                                   | 20 |
| 9. | <b>Figure: 9</b> Daily MCP duration curve for the period 1 <sup>st</sup> April, 2021 to 31 <sup>st</sup> July, 2021 in RTM                      | 20 |

## ANNEXURES

|     |                                                                                                                                                                            |    |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 1.  | <b>Annexure I</b> FSV and Average MCP in DAM for the months April, 2021 to March, 2022                                                                                     | 23 |
| 2.  | <b>Annexure II</b> FSV in TAM for the months April, 2021 to March, 2022 (on delivery and trade date basis)                                                                 | 24 |
| 3.  | <b>Annexure-III</b> Top Five Entity (Buyers and Sellers) in Bilateral transactions in July, 2021                                                                           | 25 |
| 4.  | <b>Annexure-IV</b> All MCPs vis: Evening MCP, Day MCP, Night MCP, Morning MCP, Maximum MCP, Minimum MCP, Average MCP and Final Schedule Volume (MU) in DAM in July, 2021   | 26 |
| 5.  | <b>Annexure-V</b> Comparison of MCP w.r.t. Purchase Bid for 2976 Time Blocks during the month of July, 2021 in DAM                                                         | 27 |
| 6.  | <b>Annexure-VI</b> Max. FSV, Min FSV, Max MCP and Min MCP w.r.t. all Time blocks in DAM in July, 2021                                                                      | 28 |
| 7.  | <b>Annexure-VII</b> Sellers and Purchasers of Electricity in DAM in July, 2021                                                                                             | 29 |
| 8.  | <b>Annexure-VIII</b> All MCPs vis: Evening MCP, Day MCP, Night MCP, Morning MCP, Maximum MCP, Minimum MCP, Average MCP and Final Schedule Volume (MU) in RTM in July, 2021 | 31 |
| 9.  | <b>Annexure-IX</b> Comparison of MCP w.r.t. Purchase Bid for 2976 Time Blocks during the month of July, 2021 in RTM                                                        | 32 |
| 10. | <b>Annexure-X</b> Max. FSV, Min FSV, Max MCP and Min MCP w.r.t. all Time blocks in July, 2021 in RTM                                                                       | 33 |

|                         |                                                                                 |           |
|-------------------------|---------------------------------------------------------------------------------|-----------|
| <b>11. Annexure-XI</b>  | Sellers and Purchasers of Electricity in RTM in July, 2021                      | <b>34</b> |
| <b>12. Annexure-XII</b> | Cross Border Transactions of Electricity with Nepal in DAM in IEX in July, 2021 | <b>37</b> |

## APPENDIX

|                       |                                                                                                                                                                                                  |           |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>1. Appendix-I</b>  | Analysis for change in trend of Final Scheduled Volume in DAM during July, 2021 on 03 <sup>rd</sup> Monday (19 <sup>th</sup> July, 2021) & 4 <sup>th</sup> Monday (26 <sup>th</sup> July, 2021). | <b>38</b> |
| <b>2. Appendix-II</b> | Definitions/ Terminologies used in the Report                                                                                                                                                    | <b>39</b> |

## REPORT FOR MONTH: JULY, 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 July, 2021 was **4,241.01 MU**. The total energy supplied in the country during the month of July, 2021 was 1,23,720 MU. Thus, the volume of electricity transacted on both the power exchanges in DAM during July, 2021 was 3.43 % of the total energy supplied in the country. The total volume of electricity transacted in DAM on both the power exchanges during June, 2021 was **4,336.08 MU** which was 3.79% of the total energy supplied [1,14,483 MU] in the country during June, 2021. Similarly, the total volume of electricity transacted in DAM on both the power exchanges during July, 2020 was **4,486.71 MU** which was 4.00 % of the total energy supplied [1,12,147] in the country during July, 2020.
- 1.2. The volume of electricity transacted on IEX and PXIL during July, 2021 were **4,238.25 MU and 2.76 MU**, respectively, which means that the total volume transacted on IEX was **99.93%** of the total volume on power exchanges. The volume of electricity transacted on IEX and PXIL during June, 2021 were **4,314.17 MU and 21.91 MU**, respectively, which means that the total volume transacted on IEX was **99.49 %** of the total volume on power exchanges. Also, the volume of electricity transacted on IEX during July, 2020, was **4,486.71 MU**, whereas, in PXIL, no transaction of electricity happened in July, 2020.
- 1.3. The DAM Volume in IEX for July, 2021 is inclusive of Cross Border Transactions of Electricity of **72.23 MU (purchase only)** happened with Nepal during July, 2021, whereas, the same was **42.89 MU** during June, 2021. The day-wise details of Cross Border Electricity Trade happened during July, 2021 are given in **Annexure-XII**.
- 1.4. The Average Market Clearing Price (MCP) on IEX during the month of July, 2021 was **Rs 2.95/kWh**, which shows a decrease of **3.59%** and an increase of **19.43%** when compared with average MCP's for the month of June, 2021 and July, 2020, which were **Rs 3.06/kWh and Rs 2.47/kWh**, respectively. On PXIL, the average MCP during the month of July, 2021 was **Rs 3.02/kWh**, which shows a decrease of **9.85%** when compared with average MCP for the month of June, 2021, which was **Rs 3.35/kWh**, whereas, no transaction of electricity happened in July, 2020 on PXIL.

#### 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 July, 2021 with that of June, 2021 and July, 2020 is given in Table-1A & 1B:**

**(a) July, 2021 vis- a -vis June, 2021**

| Daily MCP<br>(Rs/kWh) | IEX           |               |             | PXIL          |               |             |
|-----------------------|---------------|---------------|-------------|---------------|---------------|-------------|
|                       | July,<br>2021 | June,<br>2021 | %<br>Change | July,<br>2021 | June,<br>2021 | %<br>Change |
| <b>Minimum</b>        | 1.79          | 2.04          | -12.25      | 2.32          | 2.36          | -1.69       |
| <b>Maximum</b>        | 5.08          | 4.65          | 9.25        | 3.72          | 4.77          | -22.01      |
| <b>Average</b>        | 2.95          | 3.06          | -3.59       | 3.02          | 3.35          | -9.85       |

**Table: 1A****(b) July, 2021 vis- a –vis July, 2020**

| Daily MCP<br>(Rs/kWh) | IEX           |               |             | PXIL          |               |             |
|-----------------------|---------------|---------------|-------------|---------------|---------------|-------------|
|                       | July,<br>2021 | July,<br>2020 | %<br>Change | July,<br>2021 | July,<br>2020 | %<br>Change |
| <b>Minimum</b>        | 1.79          | 1.91          | -6.28       | 2.32          | -             | NA          |
| <b>Maximum</b>        | 5.08          | 2.90          | 75.17       | 3.72          | -             | NA          |
| <b>Average</b>        | 2.95          | 2.47          | 19.43       | 3.02          | -             | NA          |

**Table: 1B**

**2.2.** The maximum Area Clearing Price (ACP) of **Rs 10.90/kWh** in IEX was observed in all 13 regions during the time block **23:15-23:30 Hrs** on 08<sup>th</sup> July, 2021. As there was no congestion in transmission system, the MCP for this time-block was also **Rs 10.90/kWh**. However, the Daily MCP in IEX on pan India basis on 08<sup>th</sup> July, 2021 was **Rs 5.08/kWh**. Whereas, in PXIL, the maximum ACP of **Rs 6.99/kWh** was observed in all 13 regions during the time block **19:45-20:00 Hrs** on 15<sup>th</sup> July, 2021. As there was no congestion in transmission system, the MCP for above time blocks were also **Rs 6.99 /kWh**. However, the Daily MCP in PXIL on 15<sup>th</sup> July, 2021 was **Rs 3.47/kWh**.

**2.3.** The minimum ACP of **Rs 1.00/kWh** in IEX was observed in all 13 regions during the time block **03:30-03:45 Hrs** on 31<sup>st</sup> July, 2021. As there was no congestion in transmission system, the MCP for this time-block was also **Rs 1.00/kWh**. However, the Daily MCP in IEX on pan India basis on 31<sup>st</sup> July, 2021 was **Rs 2.21/kWh**. Whereas, in PXIL, the minimum ACP of **Rs 2.32/kWh** was observed in all 13 regions during the consecutive 8 time blocks from **16:00-16:15 Hrs to 17:45-18:00** on 02<sup>nd</sup> July, 2021 during July, 2021. As no congestion was there in transmission system, the MCP for the above time blocks were also **Rs 2.32/kWh**. Moreover, the Daily MCP in PXIL on 02<sup>nd</sup> July, 2021 was also **Rs 2.32/kWh**.

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

**(a) July, 2021 vis- a -vis June, 2021**

| ACP<br>(Rs/kWh) | IEX        |            |             | PXIL       |               |             |
|-----------------|------------|------------|-------------|------------|---------------|-------------|
|                 | July, 2021 | June, 2021 | %<br>Change | July, 2021 | June,<br>2021 | %<br>Change |
| <b>Minimum</b>  | 1.00       | 0.60       | 66.67       | 2.32       | 2.00          | 16.00       |
| <b>Maximum</b>  | 10.90      | 9.67       | 12.72       | 6.99       | 6.99          | 0.00        |

**Table: 2A**

**(b) July, 2021 vis- a- vis July, 2020**

| ACP<br>(Rs/kWh) | IEX        |            |             | PXIL       |            |             |
|-----------------|------------|------------|-------------|------------|------------|-------------|
|                 | July, 2021 | July, 2020 | %<br>Change | July, 2021 | July, 2020 | %<br>Change |
| <b>Minimum</b>  | 1.00       | 0.88       | 13.64       | 2.32       | -          | NA          |
| <b>Maximum</b>  | 10.90      | 5.17       | 110.83      | 6.99       | -          | NA          |

**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 July, 2021 with that of June, 2021 and July, 2020 is given in Table-3A & 3B:

**(a) July, 2021 vis- a- vis June, 2021**

| Final<br>Scheduled<br>Volume (MU) | IEX           |            |             | PXIL          |            |             |
|-----------------------------------|---------------|------------|-------------|---------------|------------|-------------|
|                                   | July,<br>2021 | June, 2021 | %<br>Change | July,<br>2021 | June, 2021 | %<br>Change |
| <b>Minimum</b>                    | 103.00        | 111.91     | -7.96       | 0.05          | 0.11       | -54.55      |
| <b>Maximum</b>                    | 176.31        | 172.97     | 1.93        | 0.73          | 2.07       | -64.73      |
| <b>Average</b>                    | 136.72        | 143.81     | -4.93       | 0.25          | 0.78       | -67.95      |

**Table: 3A****(b) July, 2021 vis- a- vis July, 2020**

| Final<br>Scheduled<br>Volume (MU) | IEX           |            |             | PXIL          |               |             |
|-----------------------------------|---------------|------------|-------------|---------------|---------------|-------------|
|                                   | July,<br>2021 | July, 2020 | %<br>Change | July,<br>2021 | July,<br>2020 | %<br>Change |
| <b>Minimum</b>                    | 103.00        | 114.05     | -9.69       | 0.05          | -             | NA          |
| <b>Maximum</b>                    | 176.31        | 181.17     | -2.68       | 0.73          | -             | NA          |
| <b>Average</b>                    | 136.72        | 144.73     | -5.53       | 0.25          | -             | NA          |

**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 July, 2021 was **1099.54 MU**, out of which, **832.44 MU** (75.71 %) was transacted on IEX and **267.10 MU** (24.29 %) 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 June, 2021 was **981.16 MU**, out of which, **622.42 MU** (63.44 %) was transacted on IEX and **358.74 MU** (36.56 %) was transacted on PXIL.
- 3.3. Similarly, total volume of electricity transacted during July, 2020 in Term Ahead Market on trade date basis in both the power exchanges was **177.40 MU**, out of which, **60.27 MU** (33.97%) was transacted on IEX and **117.13 MU** (66.03%) was transacted on PXIL.
- 3.4. With respect to the total energy supplied during month of July, 2021 in the country, the volume of electricity traded on power exchanges in TAM on trade date basis represents 0.89 % of the total energy supplied. The same was **0.86%** in June, 2021 and 0.16% in July, 2020.

3.5. In the month of July, 2021, there was a transmission congestion in IEX of **17.54 MU** in Day Ahead Contingency Contract, **77.09 MU** in Daily/Anyday Contract and **0.20 MU** in Intraday contract, whereas in PXIL, there was a transmission congestion of **1.44 MU** in Intraday contract and **2.80 MU** in Daily/Anyday contract during the month of July, 2021.

3.6. **The comparison of total volume of electricity transacted on both the power exchanges in Term Ahead Market (TAM) during July, 2021 with June, 2021 and July, 2020 is given in Table- 4A&4B:**

(a) **July, 2021 vis- a- vis June, 2021 (on trade Date Basis)**

| Contract Type                    | IEX        |            |          | PXIL       |            |          |
|----------------------------------|------------|------------|----------|------------|------------|----------|
|                                  | July, 2021 | June, 2021 | % Change | July, 2021 | June, 2021 | % Change |
| <b>Intra Day (MU)</b>            | 12.88      | 16.00      | -19.50   | 109.93     | 80.00      | 37.41    |
| <b>Day Ahead Contingency(MU)</b> | 249.01     | 325.92     | -23.60   | -          | -          | NA       |
| <b>Daily/ AnyDay (MU)</b>        | 570.55     | 280.50     | 103.40   | 157.17     | 278.74     | -43.61   |
| <b>Weekly (MU)</b>               | -          | -          | NA       | -          | -          | NA       |

- : No Transaction happened

NA: Not Applicable

**Table: 4A**

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

| Contract Type                    | IEX        |            |          | PXIL       |            |          |
|----------------------------------|------------|------------|----------|------------|------------|----------|
|                                  | July, 2021 | July, 2020 | % Change | July, 2021 | July, 2020 | % Change |
| <b>Intra Day (MU)</b>            | 12.88      | 6.06       | 112.54   | 109.93     | 19.81      | 454.92   |
| <b>Day Ahead Contingency(MU)</b> | 249.01     | 15.57      | 1499.29  | -          | -          | NA       |
| <b>Daily/ AnyDay (MU)</b>        | 570.55     | 38.64      | 1376.58  | 157.17     | 97.32      | 61.50    |
| <b>Weekly (MU)</b>               | -          | -          | 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 July, 2021 was **1093.98 MU**, out of which, **761.26 MU** (69.59 %) was transacted on IEX and **332.72 MU** (30.41 %) 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 June, 2021 was **953.57 MU**, out of which, **640.91 MU** (67.21 %) was transacted on IEX and **312.66 MU** (32.79 %) was transacted on PXIL.

3.9. Similarly, total volume of electricity transacted during July, 2020 in Term Ahead Market on delivery date basis in both the power exchanges was **90.74 MU**, out of which, **62.45 MU** (68.82%) was transacted on IEX and **28.29 MU** (31.18%) was transacted on PXIL.

3.10. With respect to the total energy supplied during the month of July, 2021 in the country, the volume of electricity traded on the power exchanges in TAM on delivery date basis represents **0.88 %** of the total energy supplied. The same was **0.83 %** in June, 2021 and **0.08 %** in July, 2020.

**3.11.** In the month of July, 2021, there was no real time curtailment in IEX in Term Ahead Market, whereas in PXIL, there was real time curtailment of **1.44 MU** in Intraday contract and **8.41 MU** in Daily/Anyday Contract during July, 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 July, 2021 with June, 2021 and July, 2020 is given in Table – 4C&4D:**

**(a) July, 2021 vis- a- vis June, 2021 (on Delivery Date Basis)**

| Contract Type                    | IEX       |            |          | PXIL      |            |          |
|----------------------------------|-----------|------------|----------|-----------|------------|----------|
|                                  | July,2021 | June, 2021 | % Change | July,2021 | June, 2021 | % Change |
| <b>Intra Day (MU)</b>            | 12.88     | 16.00      | -19.50   | 119.10    | 72.03      | 65.35    |
| <b>Day Ahead Contingency(MU)</b> | 263.75    | 316.43     | -16.65   | -         | -          | NA       |
| <b>Daily/ Any Day (MU)</b>       | 484.63    | 308.48     | 57.10    | 213.62    | 240.63     | -11.22   |
| <b>Weekly (MU)</b>               | -         | -          | NA       | -         | -          | NA       |

- : No transaction happened

NA: Not Applicable

**Table: 4C**

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

| Contract Type                    | IEX       |            |          | PXIL      |            |          |
|----------------------------------|-----------|------------|----------|-----------|------------|----------|
|                                  | July,2021 | July, 2020 | % Change | July,2021 | July, 2020 | % Change |
| <b>Intra Day (MU)</b>            | 12.88     | 6.06       | 112.54   | 119.10    | 19.81      | 501.21   |
| <b>Day Ahead Contingency MU)</b> | 263.75    | 17.75      | 1385.92  | -         | -          | NA       |
| <b>Daily/ Any Day (MU)</b>       | 484.63    | 38.64      | 1154.22  | 213.62    | 8.48       | 2419.10  |
| <b>Weekly (MU)</b>               | -         | -          | 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 1<sup>st</sup> 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 July, 2021 as compared with June, 2021 and July, 2020 are as given in table 5A, 5B & 5C:

**(i) Final Scheduled Volume:**

| Exchange | Period                             | Final Scheduled Volume (MU) |         |         |         |
|----------|------------------------------------|-----------------------------|---------|---------|---------|
|          |                                    | Total                       | Minimum | Maximum | Average |
| IEX      | <b>July, 2021</b>                  | 1,596.00                    | 33.33   | 81.61   | 51.48   |
|          | <b>June, 2021</b>                  | 1,725.70                    | 44.84   | 79.96   | 57.52   |
|          | <b>Change % (Month over Month)</b> | -7.52                       | -25.67  | 2.06    | -10.50  |
|          | <b>July, 2020</b>                  | 784.96                      | 14.37   | 42.69   | 25.32   |
|          | <b>Change % (Year over Year)</b>   | 103.32                      | 131.94  | 91.17   | 103.32  |
|          | <b>July, 2021</b>                  | -                           | -       | -       | -       |
|          | <b>June, 2021</b>                  | -                           | -       | -       | -       |

|             |                                    |      |      |      |      |
|-------------|------------------------------------|------|------|------|------|
| <b>PXIL</b> | <b>Change % (Month over Month)</b> | NA   | NA   | NA   | NA   |
|             | <b>July, 2020</b>                  | 0.43 | 0.43 | 0.43 | 0.43 |
|             | <b>Change % (Year over Year)</b>   | NA   | NA   | NA   | NA   |

-: No transaction happened

NA: Not Applicable

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

| <b>Exchange</b> | <b>Period</b>                      | <b>Daily MCP (Rs/kWh)</b> |                |                |
|-----------------|------------------------------------|---------------------------|----------------|----------------|
|                 |                                    | <b>Minimum</b>            | <b>Maximum</b> | <b>Average</b> |
| <b>IEX</b>      | <b>July, 2021</b>                  | 1.62                      | 6.47           | 2.77           |
|                 | <b>June, 2021</b>                  | 1.60                      | 5.85           | 3.02           |
|                 | <b>Change % (Month over Month)</b> | 1.25                      | 10.60          | -8.28          |
|                 | <b>July, 2020</b>                  | 1.55                      | 3.39           | 2.49           |
|                 | <b>Change % (Year over Year)</b>   | 4.52                      | 90.86          | 11.24          |
| <b>PXIL</b>     | <b>July, 2021</b>                  | -                         | -              | -              |
|                 | <b>June, 2021</b>                  | -                         | -              | -              |
|                 | <b>Change % (Month over Month)</b> | NA                        | NA             | NA             |
|                 | <b>July, 2020</b>                  | 2.61                      | 2.61           | 2.61           |
|                 | <b>Change % (Year over Year)</b>   | NA                        | NA             | NA             |

-: No transaction happened

NA: Not Applicable

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

| <b>Exchange</b> | <b>Period</b>                      | <b>ACP (Rs/kWh)</b> |                |
|-----------------|------------------------------------|---------------------|----------------|
|                 |                                    | <b>Minimum</b>      | <b>Maximum</b> |
| <b>IEX</b>      | <b>July, 2021</b>                  | 0.20                | 16.85          |
|                 | <b>June, 2021</b>                  | 0.49                | 13.00          |
|                 | <b>Change % (Month over Month)</b> | -59.18              | 29.62          |
|                 | <b>July, 2020</b>                  | 0.19                | 5.65           |
|                 | <b>Change % (Year over Year)</b>   | 5.26                | 198.23         |
| <b>PXIL</b>     | <b>July, 2021</b>                  | -                   | -              |
|                 | <b>June, 2021</b>                  | -                   | -              |
|                 | <b>Change % (Month over Month)</b> | NA                  | NA             |
|                 | <b>July, 2020</b>                  | 2.60                | 2.61           |
|                 | <b>Change % (Year over Year)</b>   | NA                  | NA             |

-: No transaction happened

NA: Not Applicable

**Table -5C****5. GREEN TERM AHEAD MARKET (GTAM):**

The transaction of electricity in Green Term Ahead Market was started in IEX w.e.f. 21<sup>st</sup> August, 2020 onwards whereas, in PXIL, GTAM (Non-Solar) was started w.e.f. 24<sup>th</sup> March, 2021 and GTAM (Solar) w.e.f. June, 2021 onwards. The total volume of electricity transacted in Solar Energy Segment in GTAM in Day Ahead Contingency, Intraday, Daily/ Anyday and Weekly contracts during July, 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 & PXIL during July, 2021 and its comparison with June, 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 | July, 2021 | 174.26                      | 0.77    | 10.55   | 5.62    |
|          |                       | June, 2021 | 138.39                      | 1.33    | 10.41   | 4.61    |
|          |                       | % Change   | 25.92                       | -42.11  | 1.34    | 21.91   |
|          | Intraday              | July, 2021 | 0.45                        | 0.05    | 0.18    | 0.09    |
|          |                       | June, 2021 | 1.87                        | 0.05    | 0.25    | 0.07    |
|          |                       | % Change   | -75.94                      | 0.00    | -28.00  | 28.57   |
|          | Daily/ Anyday         | July, 2021 | 15.46                       | 0.21    | 2.10    | 0.64    |
|          |                       | June, 2021 | 8.80                        | 0.45    | 5.00    | 1.47    |
|          |                       | % Change   | 75.68                       | -53.33  | -58.00  | -56.46  |
|          | Weekly                | July, 2021 | 2.10                        | 2.10    | 2.10    | 2.10    |
|          |                       | June, 2021 | 8.67                        | 0.28    | 3.57    | 1.73    |
|          |                       | % Change   | -75.78                      | 650.00  | -41.18  | 21.39   |
| PXIL     | Day Ahead Contingency | July, 2021 | -                           |         |         |         |
|          |                       | June, 2021 | -                           |         |         |         |
|          | Intraday              | July, 2021 | -                           | -       | -       | -       |
|          |                       | June, 2021 | 1.86                        | 0.84    | 1.02    | 0.93    |
|          |                       | % Change   | NA                          | NA      | NA      | NA      |
|          | Daily/ Anyday         | July, 2021 | -                           | -       | -       | -       |
|          |                       | June, 2021 | 10.70                       | 0.42    | 1.53    | 0.97    |
|          |                       | % Change   | NA                          | NA      | NA      | NA      |
|          | Weekly                | July, 2021 | -                           |         |         |         |
|          |                       | June, 2021 | -                           |         |         |         |

-: 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 | July, 2021 | 2.63           | 3.40    | 3.05    |
|          |                       | June, 2021 | 3.04           | 3.89    | 3.24    |
|          |                       | % Change   | -13.49         | -12.60  | -5.86   |
|          | Intraday              | July, 2021 | 3.00           | 3.60    | 3.21    |
|          |                       | June, 2021 | 3.00           | 3.09    | 3.01    |
|          |                       | % Change   | 0.00           | 16.50   | 6.64    |
|          | Daily/Anyday          | July, 2021 | 3.00           | 3.90    | 3.35    |
|          |                       | June, 2021 | 3.20           | 4.10    | 3.50    |
|          |                       | % Change   | -6.25          | -4.88   | -4.29   |
|          | Weekly                | July, 2021 | 4.00           | 4.00    | 4.00    |
|          |                       | June, 2021 | 3.30           | 3.80    | 3.43    |
|          |                       | % Change   | 21.21          | 5.26    | 16.62   |
| PXIL     | Day Ahead Contingency | July, 2021 | -              |         |         |
|          |                       | June, 2021 | -              |         |         |
|          | Intraday              | July, 2021 | -              | -       | -       |
|          |                       | June, 2021 | 3.10           | 3.10    | 3.10    |
|          |                       | % Change   | NA             | NA      | NA      |
|          | Daily/ Anyday         | July, 2021 | -              | -       | -       |
|          |                       | June, 2021 | 3.09           | 3.30    | 3.14    |
|          |                       | % Change   | NA             | NA      | NA      |
|          | Weekly                | July, 2021 | -              |         |         |
|          |                       | June, 2021 | -              |         |         |

-: 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 & PXIL during July, 2021 and its comparison with June, 2021 has been shown in Table 6C & 6D below.

**(i) Final Scheduled Volume:**

| Exchange | Solar Energy Contract | Period     | Final Scheduled Volume (MU) |         |         |         |
|----------|-----------------------|------------|-----------------------------|---------|---------|---------|
|          |                       |            | Total                       | Minimum | Maximum | Average |
| IEX      | Day Ahead Contingency | July, 2021 | 176.54                      | 2.41    | 10.55   | 5.69    |
|          |                       | June, 2021 | 141.42                      | 1.33    | 10.41   | 4.71    |
|          |                       | % Change   | 24.83                       | 81.20   | 1.34    | 20.81   |
|          | Intraday              | July, 2021 | 0.45                        | 0.05    | 0.18    | 0.09    |
|          |                       | June, 2021 | 1.87                        | 0.05    | 0.25    | 0.07    |
|          |                       | %Change    | -75.94                      | 0.00    | -28.00  | 28.57   |
|          | Daily/Anyday          | July, 2021 | 18.88                       | 0.21    | 1.20    | 0.61    |
|          |                       | June, 2021 | 2.59                        | 0.08    | 0.45    | 0.18    |
|          |                       | %Change    | 628.96                      | 162.50  | 166.67  | 238.89  |
|          | Weekly                | July, 2021 | 3.25                        | 0.29    | 0.30    | 0.30    |
|          |                       | June, 2021 | 13.42                       | 0.04    | 0.99    | 0.45    |
|          |                       | %Change    | -75.78                      | 625.00  | -69.70  | -33.33  |
| PXIL     | Day Ahead Contingency | July, 2021 | -                           |         |         |         |
|          |                       | June, 2021 | -                           |         |         |         |
|          | Intraday              | July, 2021 | -                           | -       | -       | -       |
|          |                       | June, 2021 | 1.86                        | 0.84    | 1.02    | 0.93    |
|          |                       | %Change    | NA                          | NA      | NA      | NA      |
|          | Daily/Anyday          | July, 2021 | -                           | -       | -       | -       |
|          |                       | June, 2021 | 10.70                       | 0.42    | 1.53    | 0.97    |
|          |                       | %Change    | NA                          | NA      | NA      | NA      |
|          | Weekly                | July, 2021 | -                           |         |         |         |
|          |                       | June, 2021 | -                           |         |         |         |

-: No transaction happened

NA: Not Applicable

Table-6C

**(ii) Daily Market Clearing Price (MCP):**

| Exchange | Solar Energy Contract | Period     | Prices(Rs/kW) |         |         |
|----------|-----------------------|------------|---------------|---------|---------|
|          |                       |            | Minimum       | Maximum | Average |
| IEX      | Day Ahead Contingency | July, 2021 | 2.66          | 3.40    | 3.07    |
|          |                       | June, 2021 | 3.04          | 3.89    | 3.24    |
|          |                       | % Change   | -12.50        | -12.60  | -5.25   |
|          | Intraday              | July, 2021 | 3.00          | 3.60    | 3.21    |
|          |                       | June, 2021 | 3.00          | 3.09    | 3.01    |
|          |                       | %Change    | 0.00          | 16.50   | 6.64    |
|          | Daily/Anyday          | July, 2021 | 3.20          | 3.78    | 3.47    |
|          |                       | June, 2021 | 3.20          | 3.50    | 3.38    |
|          |                       | %Change    | 0.00          | 8.00    | 2.66    |
|          | Weekly                | July, 2021 | 3.80          | 4.00    | 3.93    |
|          |                       | June, 2021 | 3.24          | 3.80    | 3.37    |
|          |                       | %Change    | 17.28         | 5.26    | 16.62   |
| PXIL     |                       | July, 2021 | -             |         |         |

|  |                              |                   |          |      |      |
|--|------------------------------|-------------------|----------|------|------|
|  | <b>Day Ahead Contingency</b> | <b>June, 2021</b> | <b>-</b> |      |      |
|  | <b>Intraday</b>              | <b>July, 2021</b> | -        | -    | -    |
|  |                              | <b>June, 2021</b> | 3.10     | 3.10 | 3.10 |
|  |                              | <b>%Change</b>    | NA       | NA   | NA   |
|  | <b>Daily/Anyday</b>          | <b>July, 2021</b> | -        | -    | -    |
|  |                              | <b>June, 2021</b> | 3.09     | 3.30 | 3.14 |
|  |                              | <b>%Change</b>    | NA       | NA   | NA   |
|  | <b>Weekly</b>                | <b>July, 2021</b> | <b>-</b> |      |      |
|  |                              | <b>June, 2021</b> | <b>-</b> |      |      |

-: 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 on both the power exchanges in non-Solar Energy Segment in GTAM in Day Ahead Contingency, Intraday, Daily/ Anyday and Weekly contracts during July, 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 & PXIL during July, 2021 on trade date basis and its comparison with June, 2021 has been shown in Table 6E & 6F below.

**(i) Final Scheduled Volume:**

| Exchange | Non- Solar Energy Contract | Period     | Final Scheduled Volume (MU) |         |         |         |
|----------|----------------------------|------------|-----------------------------|---------|---------|---------|
|          |                            |            | Total                       | Minimum | Maximum | Average |
| IEX      | Day Ahead Contingency      | July, 2021 | 272.32                      | 3.02    | 20.73   | 8.78    |
|          |                            | June, 2021 | 231.37                      | 2.55    | 19.84   | 7.71    |
|          |                            | %Change    | 17.70                       | 18.43   | 4.49    | 13.88   |
|          | Intraday                   | July, 2021 | 8.46                        | 0.12    | 5.10    | 1.06    |
|          |                            | June, 2021 | 8.30                        | 0.14    | 3.95    | 0.92    |
|          |                            | %Change    | 1.93                        | -14.29  | 29.11   | 15.22   |
|          | Daily/ Anyday              | July, 2021 | 231.33                      | 0.43    | 127.94  | 33.05   |
|          |                            | June, 2021 | 5.59                        | 0.55    | 3.36    | 1.86    |
|          |                            | %Change    | 4038.28                     | -21.82  | 3707.74 | 1676.88 |
|          | Weekly                     | July, 2021 | 21.00                       | 0.34    | 7.22    | 5.25    |
|          |                            | June, 2021 | 8.85                        | 1.40    | 6.05    | 2.95    |
|          |                            | %Change    | 137.29                      | -75.71  | 19.34   | 77.97   |
| PXIL     | Day Ahead Contingency      | July, 2021 | -                           |         |         |         |
|          |                            | June, 2021 | -                           |         |         |         |
|          | Intraday                   | July, 2021 | -                           | -       | -       | -       |
|          |                            | June, 2021 | 0.40                        | 0.40    | 0.40    | 0.40    |
|          |                            | % Change   | NA                          | NA      | NA      | NA      |
|          | Daily/ Anyday              | July, 2021 | 16.24                       | 0.03    | 0.98    | 0.56    |
|          |                            | June, 2021 | 15.43                       | 0.14    | 0.89    | 0.53    |
|          |                            | % Change   | 5.25                        | -78.57  | 10.11   | 5.66    |
|          | Weekly                     | July, 2021 | -                           |         |         |         |
|          |                            | June, 2021 | -                           |         |         |         |

-: No transaction happened

NA: Not Applicable

Table-6E

## (ii) Daily Market Clearing Price (MCP):

| Exchange | Non- Solar Energy Contract | Period     | Prices(Rs/kWh) |         |         |
|----------|----------------------------|------------|----------------|---------|---------|
|          |                            |            | Minimum        | Maximum | Average |
| IEX      | Day Ahead Contingency      | July, 2021 | 3.13           | 5.70    | 3.88    |
|          |                            | June, 2021 | 3.45           | 6.26    | 4.17    |
|          |                            | % Change   | -9.28          | -8.95   | -6.95   |
|          | Intraday                   | July, 2021 | 3.50           | 5.13    | 4.25    |
|          |                            | June, 2021 | 3.60           | 6.00    | 4.64    |
|          |                            | % Change   | -2.78          | -14.50  | -8.41   |
|          | Daily/Anyday               | July, 2021 | 3.70           | 4.50    | 4.07    |
|          |                            | June, 2021 | 3.80           | 4.10    | 3.90    |
|          |                            | % Change   | -2.63          | 9.76    | 4.36    |
|          | Weekly                     | July, 2021 | 3.65           | 4.20    | 3.94    |
|          |                            | June, 2021 | 3.80           | 4.50    | 4.22    |
|          |                            | % Change   | -3.95          | -6.67   | -6.64   |
| PXIL     | Day Ahead Contingency      | July, 2021 | -              |         |         |
|          |                            | June, 2021 | -              |         |         |
|          | Intraday                   | July, 2021 | -              | -       | -       |
|          |                            | June, 2021 | 4.32           | 4.32    | 4.32    |
|          |                            | % Change   | NA             | NA      | NA      |
|          | Daily/ Anyday              | July, 2021 | 3.38           | 4.32    | 3.76    |
|          |                            | June, 2021 | 3.40           | 4.40    | 3.77    |
|          |                            | % Change   | -0.59          | -1.82   | -0.27   |
|          | Weekly                     | July, 2021 | -              |         |         |
|          |                            | June, 2021 | -              |         |         |

-: 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 & PXIL during July, 2021 and its comparison with June, 2021 has been shown in Table 6G & 6H below.

## (i) Final Scheduled Volume:

| Exchange | Non- Solar Energy Contract | Period     | Final Scheduled Volume (MU) |         |         |         |
|----------|----------------------------|------------|-----------------------------|---------|---------|---------|
|          |                            |            | Total                       | Minimum | Maximum | Average |
| IEX      | Day Ahead Contingency      | July, 2021 | 269.29                      | 3.02    | 20.73   | 8.69    |
|          |                            | June, 2021 | 227.99                      | 2.55    | 19.84   | 7.60    |
|          |                            | % Change   | 18.11                       | 18.43   | 4.49    | 14.34   |
|          | Intraday                   | July, 2021 | 8.46                        | 0.12    | 5.10    | 1.06    |
|          |                            | June, 2021 | 8.30                        | 0.14    | 3.95    | 0.92    |
|          |                            | % Change   | 1.93                        | -14.29  | 29.11   | 15.22   |
|          | Daily/Anyday               | July, 2021 | 188.95                      | 0.05    | 16.87   | 7.87    |
|          |                            | June, 2021 | 9.36                        | 0.12    | 0.58    | 0.39    |
|          |                            | % Change   | 1918.70                     | -58.33  | 2808.62 | 1917.95 |
|          | Weekly                     | July, 2021 | 13.58                       | 0.05    | 1.03    | 0.68    |
|          |                            | June, 2021 | 8.85                        | 0.20    | 0.86    | 0.42    |
|          |                            | % Change   | 53.45                       | -75.00  | 19.77   | 61.90   |
| PXIL     | Day Ahead Contingency      | July, 2021 | -                           |         |         |         |
|          |                            | June, 2021 | -                           |         |         |         |
|          | Intraday                   | July, 2021 | -                           | -       | -       | -       |
|          |                            | June, 2021 | 0.40                        | 0.40    | 0.40    | 0.40    |
|          |                            | % Change   | NA                          | NA      | NA      | NA      |
|          | Daily/Anyday               | July, 2021 | 16.77                       | 0.03    | 0.98    | 0.58    |
|          |                            | June, 2021 | 14.54                       | 0.14    | 0.89    | 0.52    |

|  |        |            |       |        |       |       |
|--|--------|------------|-------|--------|-------|-------|
|  |        | % Change   | 15.34 | -78.57 | 10.11 | 11.54 |
|  | Weekly | July, 2021 | -     |        |       |       |
|  |        | June, 2021 | -     |        |       |       |

-: No transaction happened

NA: Not Applicable

Table-6G

## (ii) Daily Market Clearing Price (MCP):

| Exchange | Non- Solar<br>Energy Contract | Period     | Prices(Rs/kW) |         |         |
|----------|-------------------------------|------------|---------------|---------|---------|
|          |                               |            | Minimum       | Maximum | Average |
| IEX      | Day Ahead<br>Contingency      | July, 2021 | 3.13          | 5.70    | 3.92    |
|          |                               | June, 2021 | 3.45          | 6.26    | 4.17    |
|          |                               | % Change   | -9.28         | -8.95   | -6.00   |
|          | Intraday                      | July, 2021 | 3.50          | 5.13    | 4.25    |
|          |                               | June, 2021 | 3.60          | 6.00    | 4.64    |
|          |                               | % Change   | -2.78         | -14.50  | -8.41   |
|          | Daily/Anyday                  | July, 2021 | 3.88          | 4.50    | 4.22    |
|          |                               | June, 2021 | 3.70          | 4.10    | 3.84    |
|          |                               | % Change   | 4.86          | 9.76    | 9.90    |
|          | Weekly                        | July, 2021 | 3.80          | 4.20    | 4.05    |
|          |                               | June, 2021 | 3.80          | 4.50    | 4.22    |
|          |                               | % Change   | 0.00          | -6.67   | -4.03   |
| PXIL     | Day Ahead<br>Contingency      | July, 2021 | -             |         |         |
|          |                               | June, 2021 | -             |         |         |
|          | Intraday                      | July, 2021 | -             | -       | -       |
|          |                               | June, 2021 | 4.32          | 4.32    | 4.32    |
|          |                               | % Change   | NA            | NA      | NA      |
|          | Daily/Anyday                  | July, 2021 | 3.38          | 4.40    | 3.79    |
|          |                               | June, 2021 | 3.40          | 4.20    | 3.75    |
|          |                               | % Change   | -0.59         | 4.76    | 1.07    |
|          | Weekly                        | July, 2021 | -             |         |         |
|          |                               | June, 2021 | -             |         |         |

-: No transaction happened

NA: Not Applicable

Table-6H

6. BILATRAL TRANSACTIONS:

The total volume of electricity transacted through **bilateral transactions** in the month of July, 2021 for buy and sell were **8,875.71 MU** and **8,875.63 MU** respectively. The total buy volume of electricity transacted in bilateral market through direct transactions and traders in the month of July, 2021 were **2,227.55 MU** and **6,648.16 MU** respectively. Similarly, the total sell volume of electricity transacted in bilateral market through direct transactions and traders in the month of July, 2021 were **2,291.88 MU** and **6,583.75 MU** respectively. The details of Bilateral buy and sell Transactions of Electricity happened during July, 2021 have been shown in Tables Below:

| Volume<br>(MU) | Buy     |         | Total Buy<br>(MU) | Sell    |         | Total Sell<br>(MU) |
|----------------|---------|---------|-------------------|---------|---------|--------------------|
|                | Direct  | Traders |                   | Direct  | Traders |                    |
| <b>Total</b>   | 2227.55 | 6648.16 | 8,875.71          | 2291.88 | 6583.75 | 8,875.63           |
| <b>Maximum</b> | 607.06  | 1558.39 | -                 | 762.99  | 798.65  | -                  |
| <b>Minimum</b> | 0.03    | 0.30    | -                 | 1.34    | 0.44    | -                  |

Table -7A

The region-wise maximum/ minimum volume of electricity for buy and sell happened bilaterally during July, 2021 is given in tables 7B & 7C:

**(i) Region-wise Buy Volume:**

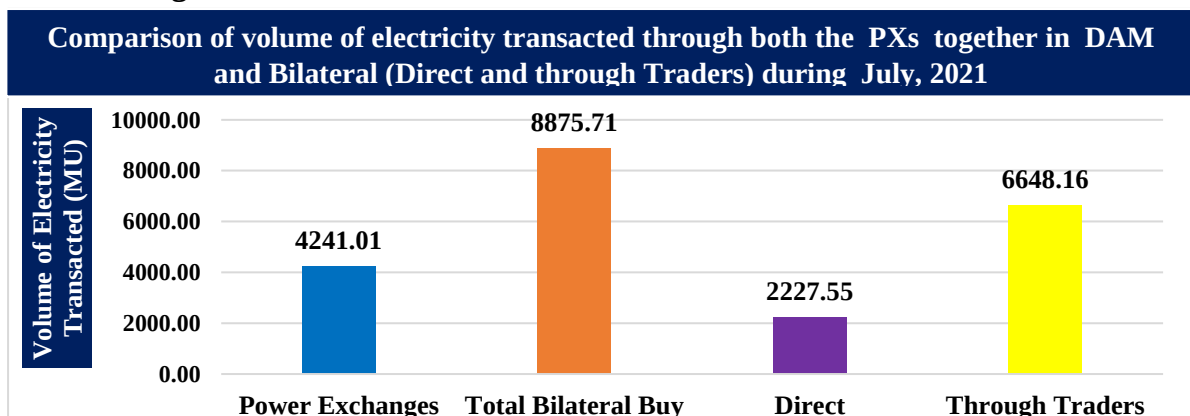
| Region-wise Volume (MU) | ER     |         | WR     |        | NR      |         | SR     |        | NER    |        |
|-------------------------|--------|---------|--------|--------|---------|---------|--------|--------|--------|--------|
|                         | Direct | Trader  | Direct | Trader | Direct  | Trader  | Direct | Trader | Direct | Trader |
| <b>Total</b>            | 214.00 | 1100.63 | 521.71 | 751.06 | 1346.13 | 4666.59 | 145.71 | 124.25 | 0.00   | 5.63   |
| <b>Maximum</b>          | 131.49 | 466.78  | 193.74 | 488.53 | 607.06  | 1558.39 | 133.23 | 115.90 | 0.00   | 5.63   |
| <b>Minimum</b>          | 5.21   | 6.31    | 10.39  | 6.34   | 10.27   | 0.30    | 0.03   | 0.31   | 0.00   | 5.63   |

**Table -7B****(ii) Region-wise Sell Volume:**

| Region-wise Volume (MU) | ER     |         | WR      |         | NR     |         | SR     |         | NER    |        |
|-------------------------|--------|---------|---------|---------|--------|---------|--------|---------|--------|--------|
|                         | Direct | Trader  | Direct  | Trader  | Direct | Trader  | Direct | Trader  | Direct | Trader |
| <b>Total</b>            | 371.27 | 1335.35 | 1364.56 | 2454.05 | 394.33 | 1279.30 | 161.71 | 1458.60 | 0.00   | 56.45  |
| <b>Maximum</b>          | 222.84 | 586.70  | 762.99  | 798.65  | 153.95 | 784.67  | 116.47 | 732.53  | 0.00   | 24.75  |
| <b>Minimum</b>          | 1.34   | 1.34    | 4.59    | 21.23   | 6.35   | 1.50    | 2.86   | 1.80    | 0.00   | 0.44   |

**Table -7C**

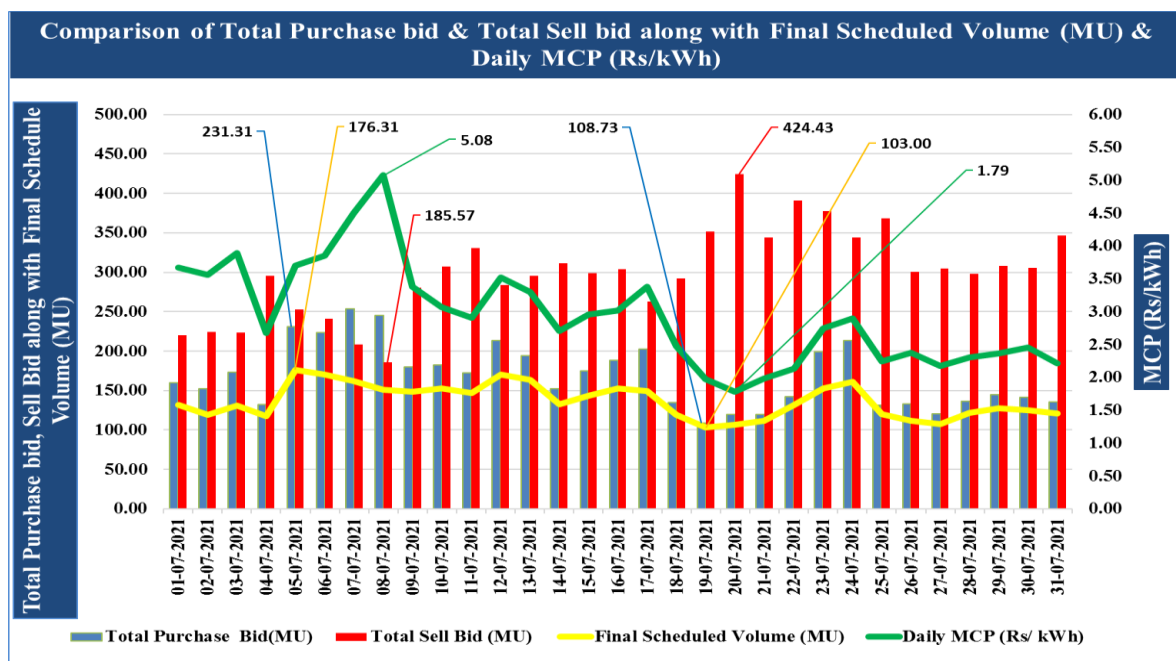
- 6.1.** The **top 5 buyers** on bilateral transaction through direct transactions in the month of July, 2021 were **Punjab, Haryana, Uttar Pradesh, Madhya Pradesh and Telangana**, which constituted **71.31%** of the market volume. Whereas **top 5 buyers** on bilateral transaction through traders in the month of July, 2021 were **Punjab, Haryana, Delhi, Gujarat and Odisha**, which constituted **78.72 %** of the market volume. [Annexure III]
- 6.2.** The **top 5 sellers** on bilateral transaction through direct transactions in the month of July, 2021 were **Madhya Pradesh, DVC, DB Power, Rajasthan and Adhunik Power**, which constituted **63.16%** of the market volume. Whereas **top 5 sellers** on bilateral transaction through traders in the month of July, 2021 were **Raipur Energen, Himachal Pradesh, Karnataka, TEESTA III TUL and JITPL**, which constituted **50.90%** of the market volume. [Annexure III]
- 6.3. Deviation Import and Export Volume** - The total volume of Deviation observed in the month of July, 2021 were **2330.03 MU** in import and **2304.89 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 July, 2021 is shown in **Figure 1**:

**Figure -1**

## 7. ANALYSIS OF MOVEMENT OF PRICES OBSERVED IN DAM DURING JULY, 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 July, 2021 month. The observations made are as under:

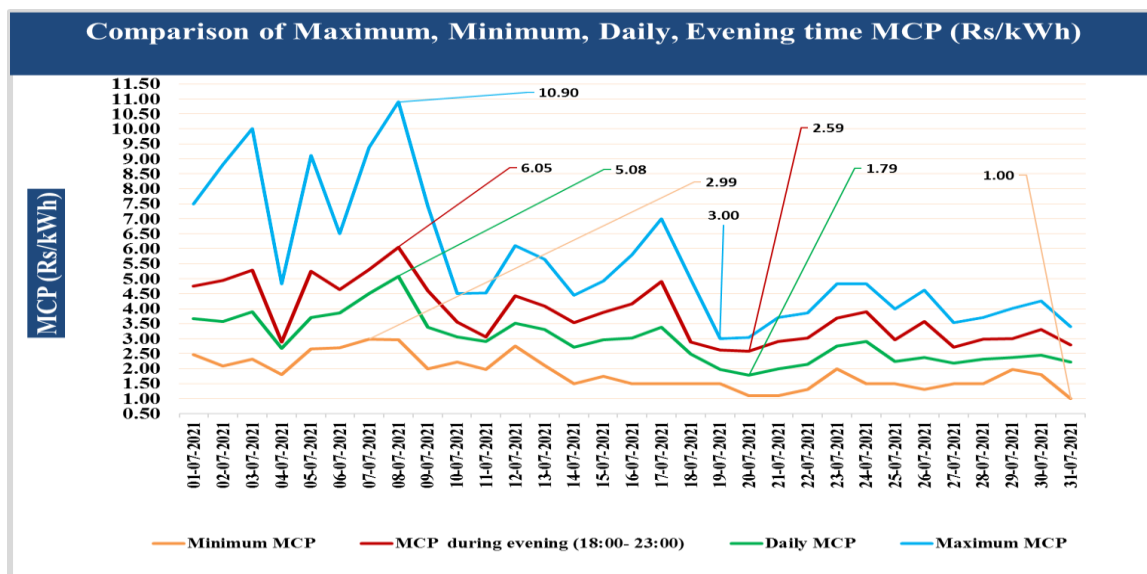
- 7.1. In order to find out the determinants which are responsible for the Daily MCP, a regression analysis has been carried out where the Daily MCP is the dependent variable and the independent variables are peak demand, total purchase bid, total sell bid, coal generation, hydro generation, wind generation 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, total sell bid and coal generation, 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 **0.54**. 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 July, 2021.
- 7.3. The same relationship is visible from the analysis carried out from the plot in **Figure 2**.



**Figure -2**

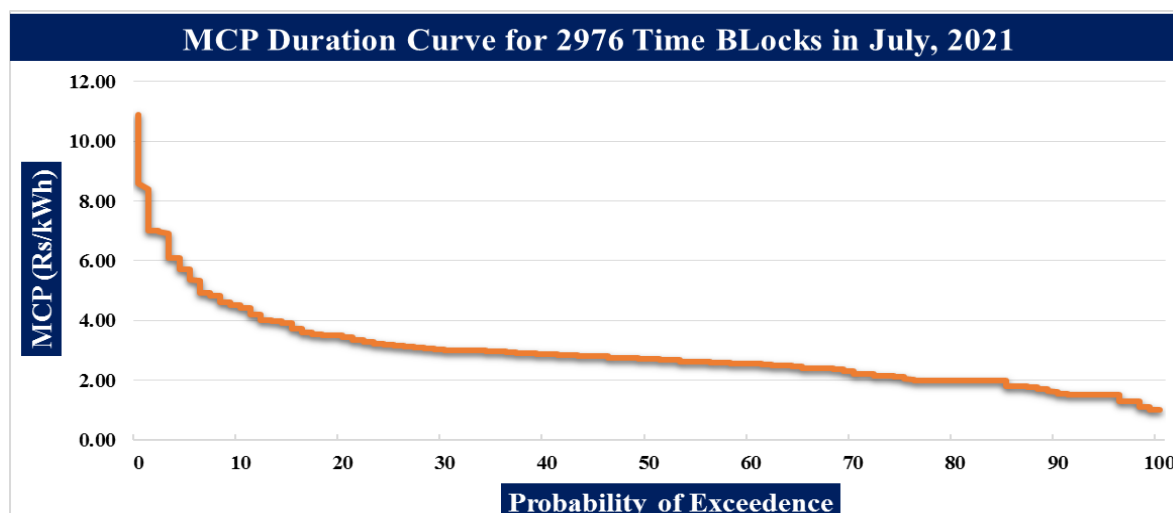
- 7.4. Invariably, the Final Scheduled Volume (MU) and the Daily MCP (Rs/kWh) showed decreasing trend on Sundays as the demand of electricity in the country is less compared to other days of week. However, during the month of July, 2021, it is observed that on third Monday (19<sup>th</sup> July, 2021) and fourth Monday (26<sup>th</sup> July, 2021), FSV showed decreasing trend in comparison to third Sunday (18<sup>th</sup> July, 2021) and fourth Sunday (25<sup>th</sup> July, 2021) respectively. 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**.

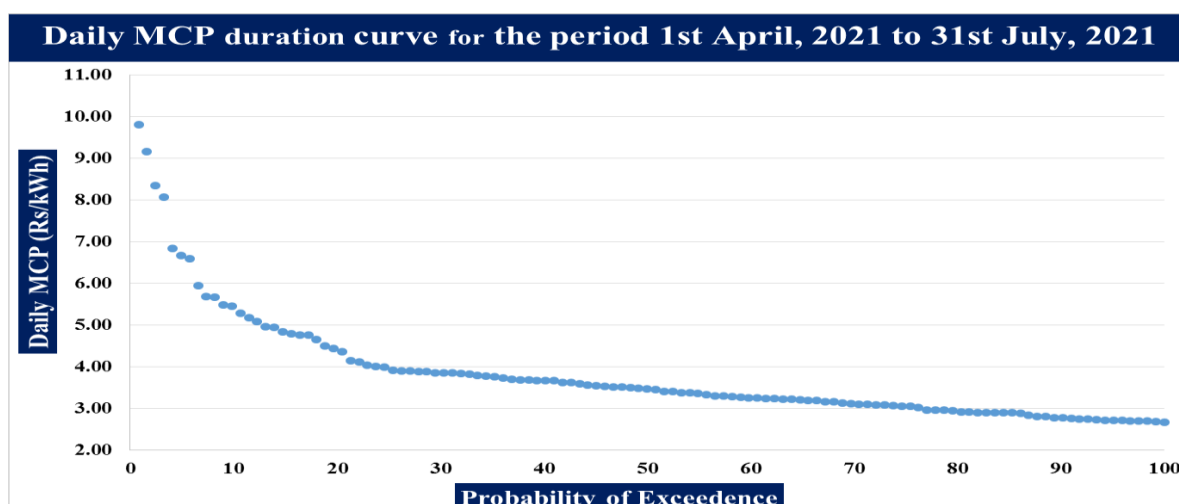


**Figure -3**

- 7.6. The Market Clearing Price duration curves for time block wise MCP for the month of July, 2021 is shown in **Figure 4**, whereas the day wise MCP duration curve for the period 1<sup>st</sup> April, 2021 to 31<sup>st</sup> July, 2021 is shown in **Figure 5**.



**Figure 4**



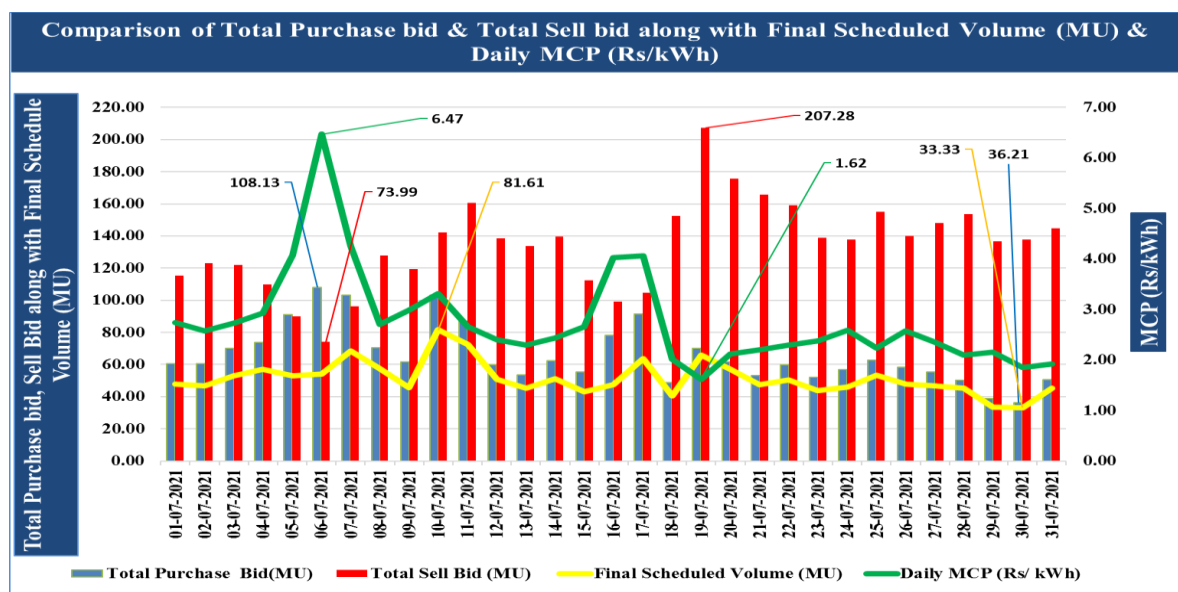
**Figure 5**

- 7.7. It can be seen in figure 4 above that in the MCP duration curve of July 2021, for 36.53 % of the time MCP was above average MCP of the month (i.e. **Rs. 2.95/kWh**) and almost 62.90 % of the time MCP was below average MCP of the month. Similarly, it can be seen in the cumulative MCP duration curve from 1<sup>st</sup> April, 2021 to 31<sup>st</sup> July, 2021 (figure 5), that for 68.03 % of the time the daily MCP was above the average MCP for the period (i.e. **Rs. 3.13/kWh**) and for 31.97 % of the time the daily MCP was below the average MCP for the period.
- 7.8. The Purchase Bids and the MCP discovered in each of the 15-minute time block during the month almost followed the same trend [**Annexure V**]. This is also corroborated with the outcome of regression analysis mentioned at **para 7.1 and 7.2 above**.
- 7.9. On **12 days** during the month, the maximum FSV occurred during the **time period 06:45-07:45 Hrs. [Annexure VI]**
- 7.10. On **14 days** during the month, the maximum MCP occurred during the **time period 21:15-22:00 Hrs. [Annexure VI]**
- 7.11. On **8 days** during the month, the minimum FSV occurred during the **time period 04:45-05:45 Hrs. [Annexure VI]**
- 7.12. On **12 days** during the month, the minimum MCP occurred during the **time period 13:00-13:30 Hrs. [Annexure VI]**
- 7.13. The maximum demand met during the month of July, 2021 in the country occurred on **07<sup>th</sup> July, 2021 at 200.57 GW**, which is 4.73 % more than the maximum demand occurred during **June, 2021 [ i.e. 191.51 GW on 30<sup>th</sup> June, 2021]** and is 17.60 % more than the maximum demand occurred during July, 2020 i.e. **[170.55 GW on 02<sup>nd</sup> July, 2020]**.
- 7.14. In the month of July, 2021, One nation One Price was observed in IEX for **all 31 days** during the month, as there was no transmission congestion. Whereas, in PXIL also, there was no congestion in transmission system during July, 2021, so one nation one price was observed on **11 days** during which transaction of electricity happened (i.e. 01<sup>th</sup> to 04<sup>th</sup>, 06<sup>th</sup> to 07<sup>th</sup>, 14<sup>th</sup> to 17<sup>th</sup> and 20<sup>th</sup> July, 2021). While in the month of June, 2021, One nation One Price was observed in IEX for **all 30 days** during the month, as there was no transmission congestion. Whereas, in PXIL also, there was no congestion in transmission system during June, 2021, so one nation one price was observed on all **28 days** during which transaction of electricity happened (i.e. 01<sup>th</sup> to 07<sup>th</sup>, 10<sup>th</sup> to 30<sup>th</sup> June, 2021). Similarly, in the month of July, 2020, there was no congestion in transmission system in IEX, hence, one nation one price was observed for all 31 days on IEX. Whereas, in PXIL, no transaction of electricity happened in July, 2020.
- 7.15. There was no real time curtailment in both IEX and PXIL during July, 2021. Further, there was real time curtailment of **2.35 MU** on two days (25<sup>th</sup> to 26<sup>th</sup> June, 2021) in IEX, whereas, in PXIL, there was no real time curtailment in June, 2021. In July, 2020, there was no real time curtailment in IEX, whereas, no transaction of electricity happened in PXIL in July, 2020.

- 7.16. The **top 10 sellers** on the power exchanges in **Day Ahead Market (DAM)** in the month of July, 2021 were **Himachal Pradesh, Karnataka, Orissa, Sembcorp Gayatri, Uttar Pradesh, J&K, Kameng HEP, Telangana, Kerala and Essar Power MP Ltd.**, which constituted **50.55%** of the market volume. [Annexure VII]
- 7.17. The **top 10 purchasers** on the power exchanges in **Day Ahead Market (DAM)** in the month of July, 2021 were **Gujarat, Maharashtra, Punjab, Haryana, Tamil Nadu, Uttar Pradesh, Telangana, Bihar, Madhya Pradesh and Andhra Pradesh**, which constituted **84.17 %** of the market volume. [Annexure VII]
- 7.18. The total volume of electricity purchased by Discoms/Licensees in DAM in the month of July, 2021 was **4,213.45 MU**, which constituted **99.35 %** of total volume of electricity purchased on both the power exchanges.
- 7.19. Similarly, the total volume of electricity purchased by Discoms/Licensees in DAM in the month of June, 2021 was **4,332.32 MU**, which constituted **99.91%** 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 JULY, 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, total Sell Bid and solar generation, 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 **0.66**. 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 July, 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-6** below:



**Figure-6**

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

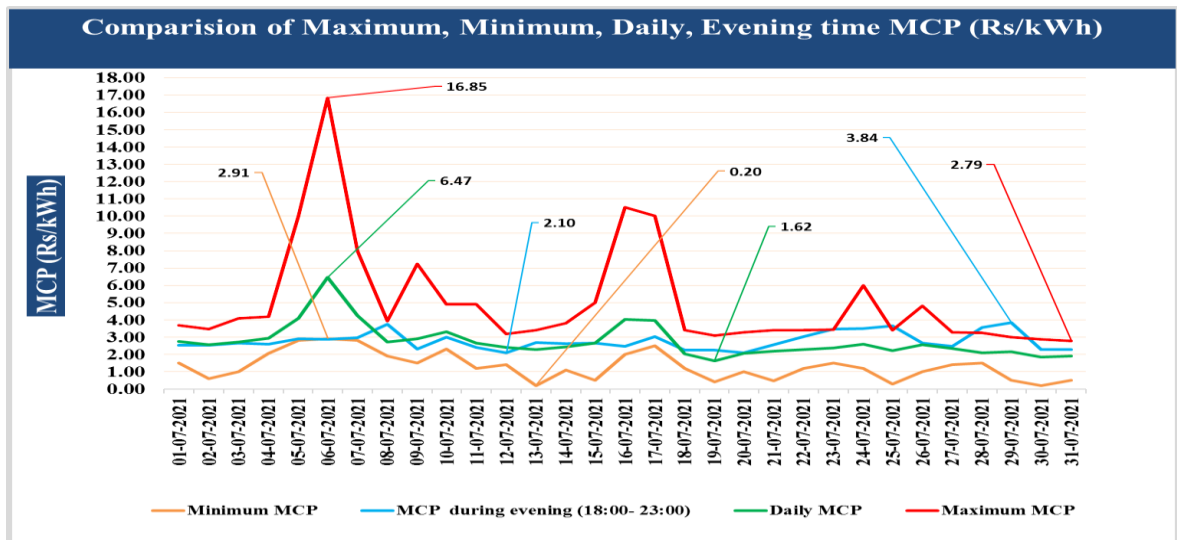


Figure-7

- 8.5. The Market Clearing Price duration curves for time block wise MCP for the month of July, 2021 is shown in **Figure 8**, whereas the day wise MCP duration curve for the period 1<sup>st</sup> April, 2021 to 31<sup>st</sup> July, 2021 is shown in **Figure 9**.

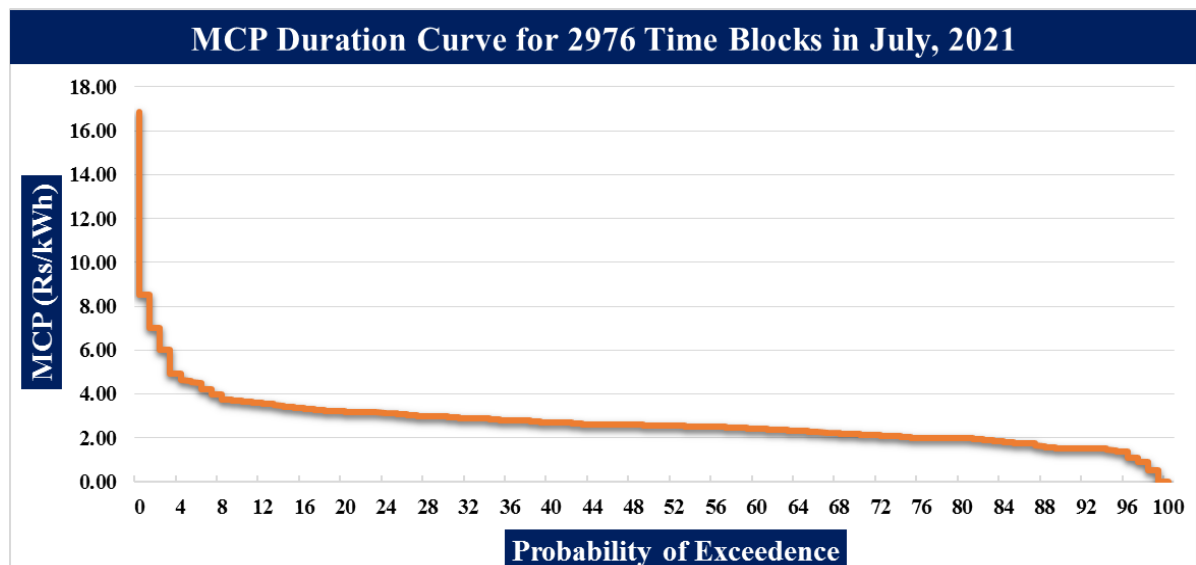


Figure 8

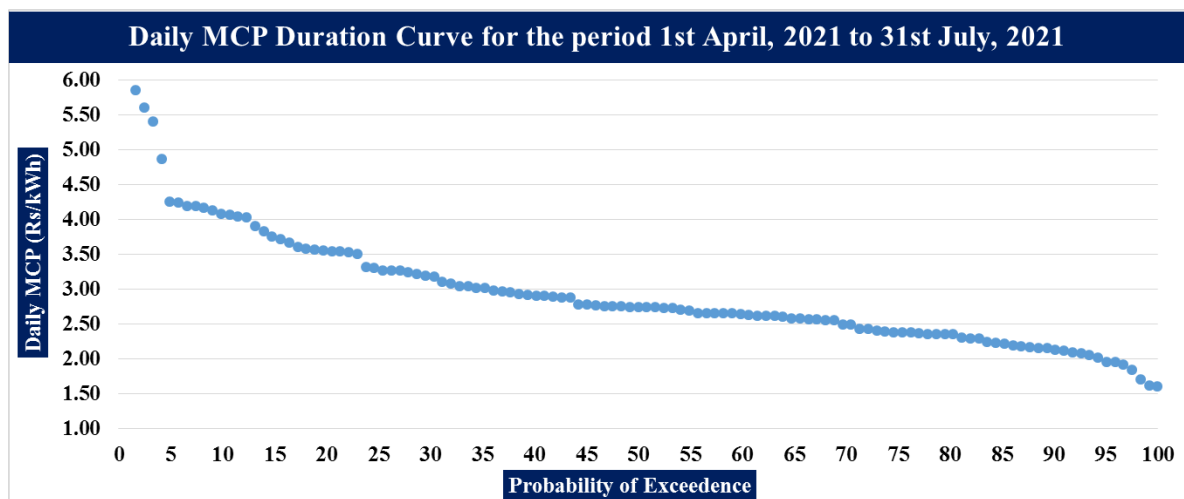


Figure 9

- 8.6.** It can be seen in figure 8 above that in the MCP duration curve of July 2021, for 38.10 % of the time the MCP was above the average MCP of the month (i.e. Rs. 2.76/kWh) and for 61.86 % of the time the MCP was below the average MCP of the month. Similarly, it can be seen in the cumulative MCP duration curve from 1<sup>st</sup> April, 2021 to 31<sup>st</sup> July, 2021 (figure 9) that, for 36.88 % of the time the daily MCP was above the average MCP for the period (i.e. Rs. 2.95/kWh) and for 62.30 % of the time the daily MCP was below the average MCP for the period.
- 8.7.** On **7 days** during the month, the maximum FSV occurred during the **time period 22:45-24:00 Hrs. [Annexure X]**
- 8.8.** On **13 days** during the month, the maximum MCP occurred during the **time period 21:30-23:00 Hrs. [Annexure X]**
- 8.9.** On **7 days** during the month, the minimum FSV occurred during the **time period 08:15-09:15 Hrs. [Annexure X]**
- 8.10.** On **7 days** during the month, the minimum MCP occurred during the **time period 13:00-14:00 Hrs. [Annexure X]**
- 8.11.** There was **no** real time curtailment in IEX in Real Time Market (RTM) during July, 2021 and June, 2021, whereas, no transaction of electricity happened in PXIL during July, 2021 and June, 2021. In July, 2020 also, there was no real time curtailment in both IEX and PXIL in Real Time Market (RTM).
- 8.12.** In the month of July, 2021, there was transmission congestion of **26.01 MU** in IEX in Real Time Market for 27 days (1<sup>st</sup> to 19<sup>th</sup> July, 21<sup>st</sup> to 27<sup>th</sup> July and 31<sup>st</sup> July, 2021), hence, one nation one price was observed for **4 days** only in IEX during July, 2021. Whereas, in PXIL, no transaction of electricity happened in July, 2021 in Real Time Market. Further, in the month of June, 2021, there was transmission congestion of **3.97 MU** in IEX in Real Time Market for 9 days (11<sup>th</sup>, 15<sup>th</sup>, 17<sup>th</sup> to 19<sup>th</sup>, 23<sup>rd</sup> to 25<sup>th</sup> and 30<sup>th</sup> June 2021), hence, one nation one price was observed for **21 days** in IEX during June, 2021. Whereas, in PXIL, no transaction of electricity happened in June, 2021 in Real Time Market. In the month of July, 2020 also, there was congestion of **0.075 MU** in transmission system in IEX on 3<sup>rd</sup> July, 2020, hence, one nation one price was observed for **30 days** on IEX. Whereas, in PXIL there was no congestion in transmission system, so one nation one price was observed on one day only during which transaction happened (3<sup>rd</sup> July, 2020).
- 8.13.** The **top 10 sellers** on the power exchanges in Real Time Market (RTM) in the month of July, 2021 were **J&K, Karnataka, Orissa, Telangana, Delhi, Kameng HEP, West Bengal, NLC TPS-II, Kerala and NLC TPS-II Stg-2**, which constituted **63.37%** of the market volume. **[Annexure XI]**
- 8.14.** The **top 10 purchasers** on the power exchanges in Real Time Market (RTM) in the month of July, 2021 were **Telangana, Haryana, Uttar Pradesh, Rajasthan, West Bengal, Maharashtra, Bihar, Delhi, Gujarat and Andhra Pradesh**, which constituted **84.97%** of the market volume. **[Annexure XI]**

- 8.15.** The total volume of electricity purchased by Discoms/Licensees in RTM in the month of July, 2021 was **1,584.85 MU**, which constituted **99.30 %** of total volume of electricity purchased on both the power exchanges.
- 8.16.** Similarly, the total volume of electricity purchased by Discoms/Licensees in RTM in the month of June, 2021 was **1,715.65 MU**, which constituted **99.42%** 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     |
| <b>Quarter -I</b>                      | April, 2021                  | 5,699.22                    | 4.73         | 3.70                           | 3.69 | 0                          | 0        |
|                                        | May, 2021                    | 4,363.88                    | 3.32         | 2.83                           | 3.06 | 0                          | 0        |
|                                        | June, 2021                   | 4,314.17                    | 21.91        | 3.06                           | 3.35 | 2.35                       | 0        |
| <b>Total Quarter -I</b>                | <b>April - June, 2021</b>    | <b>14,377.27</b>            | <b>29.96</b> |                                |      | <b>2.35</b>                | <b>0</b> |
| <b>Quarter- II</b>                     | July, 2021                   | <b>4,238.25</b>             | <b>2.76</b>  | 2.95                           | 3.02 | <b>0</b>                   | <b>0</b> |
|                                        | August, 2021                 |                             |              |                                |      |                            |          |
|                                        | September, 2021              |                             |              |                                |      |                            |          |
| <b>Total Quarter- II</b>               | <b>July- September, 2021</b> | <b>4,238.25</b>             | <b>2.76</b>  |                                |      | <b>0</b>                   | <b>0</b> |
| <b>Total April, 2021 - March, 2022</b> |                              | <b>18,615.52</b>            | <b>32.72</b> |                                |      | <b>2.35</b>                | <b>0</b> |

**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           |
| <b>Quarter -I</b>                      | April, 2021                  | 325.78                                          | 651.35          | 977.13          |
|                                        | May, 2021                    | 425.63                                          | 344.03          | 769.66          |
|                                        | June, 2021                   | 622.42                                          | 358.74          | 981.16          |
| <b>Total Quarter -I</b>                | <b>April- June, 2021</b>     | <b>1,373.83</b>                                 | <b>1,354.12</b> | <b>2,727.95</b> |
| <b>Quarter- II</b>                     | July, 2021                   | 832.44                                          | 267.10          | 1,099.54        |
|                                        | August, 2021                 |                                                 |                 |                 |
|                                        | September, 2021              |                                                 |                 |                 |
| <b>Total Quarter -II</b>               | <b>July- September, 2021</b> | <b>832.44</b>                                   | <b>267.10</b>   | <b>1,099.54</b> |
| <b>Total April, 2021 - March, 2022</b> |                              | <b>2,206.27</b>                                 | <b>1,621.22</b> | <b>3,827.49</b> |

| Quarter                                | Months                       | Final Scheduled Volume (MU) on Delivery Date Basis |                 |                 |
|----------------------------------------|------------------------------|----------------------------------------------------|-----------------|-----------------|
|                                        |                              | IEX                                                | PXIL            | Total           |
| <b>Quarter -I</b>                      | April, 2021                  | 348.58                                             | 576.72          | 925.30          |
|                                        | May, 2021                    | 382.62                                             | 419.36          | 801.98          |
|                                        | June, 2021                   | 640.91                                             | 312.66          | 953.57          |
| <b>Total Quarter -I</b>                | <b>April- June, 2021</b>     | <b>1,372.11</b>                                    | <b>1,308.74</b> | <b>2,680.85</b> |
| <b>Quarter- II</b>                     | July, 2021                   | 761.26                                             | 332.72          | 1,093.98        |
|                                        | August, 2021                 |                                                    |                 |                 |
|                                        | September, 2021              |                                                    |                 |                 |
| <b>Total Quarter -II</b>               | <b>July- September, 2021</b> | <b>761.26</b>                                      | <b>332.72</b>   | <b>1,093.98</b> |
| <b>Total April, 2021 - March, 2022</b> |                              | <b>2,133.37</b>                                    | <b>1,641.46</b> | <b>3,774.83</b> |

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

### (i) Top five Buyers in Bilateral transactions

| Entity Name                      | Direct         |         | Entity Name                      | Through Traders |         |
|----------------------------------|----------------|---------|----------------------------------|-----------------|---------|
|                                  | (MU)           | Percent |                                  | (MU)            | Percent |
| <b>Punjab</b>                    | 607.06         | 27.25%  | <b>Punjab</b>                    | 1558.39         | 23.44%  |
| <b>Haryana</b>                   | 399.25         | 17.92%  | <b>Haryana</b>                   | 1446.34         | 21.76%  |
| <b>Uttar Pradesh</b>             | 255.19         | 11.46%  | <b>Delhi</b>                     | 1273.09         | 19.15%  |
| <b>MP</b>                        | 193.74         | 8.70%   | <b>Gujarat</b>                   | 488.53          | 7.35%   |
| <b>TELANGANA</b>                 | 133.23         | 5.98%   | <b>Odisha</b>                    | 466.78          | 7.02%   |
| <b>Total Volume</b>              | 1588.47        | 71.31%  | <b>Total Volume</b>              | 5233.14         | 78.72%  |
| <b>Total Volume in Bilateral</b> | <b>2227.55</b> |         | <b>Total Volume in Bilateral</b> | <b>6648.16</b>  |         |

### (ii) Top five Sellers in Bilateral transactions

| Entity Name                      | Direct         |         | Entity Name                      | Through Traders |         |
|----------------------------------|----------------|---------|----------------------------------|-----------------|---------|
|                                  | (MU)           | Percent |                                  | (MU)            | Percent |
| <b>MP</b>                        | 762.99         | 33.29%  | <b>Raipur Energen</b>            | 798.65          | 12.13%  |
| <b>DVC</b>                       | 222.84         | 9.72%   | <b>Himachal Pradesh</b>          | 784.67          | 11.92%  |
| <b>DB Power</b>                  | 176.18         | 7.69%   | <b>KARNATAKA</b>                 | 732.53          | 11.13%  |
| <b>Rajasthan</b>                 | 153.95         | 6.72%   | <b>TEESTA III TUL</b>            | 586.70          | 8.91%   |
| <b>Adhunik Power</b>             | 131.49         | 5.74%   | <b>JITPL</b>                     | 448.66          | 6.81%   |
| <b>Total Volume</b>              | 1447.46        | 63.16%  | <b>Total Volume</b>              | 3351.21         | 50.90%  |
| <b>Total Volume in Bilateral</b> | <b>2291.88</b> |         | <b>Total Volume in Bilateral</b> | <b>6583.75</b>  |         |

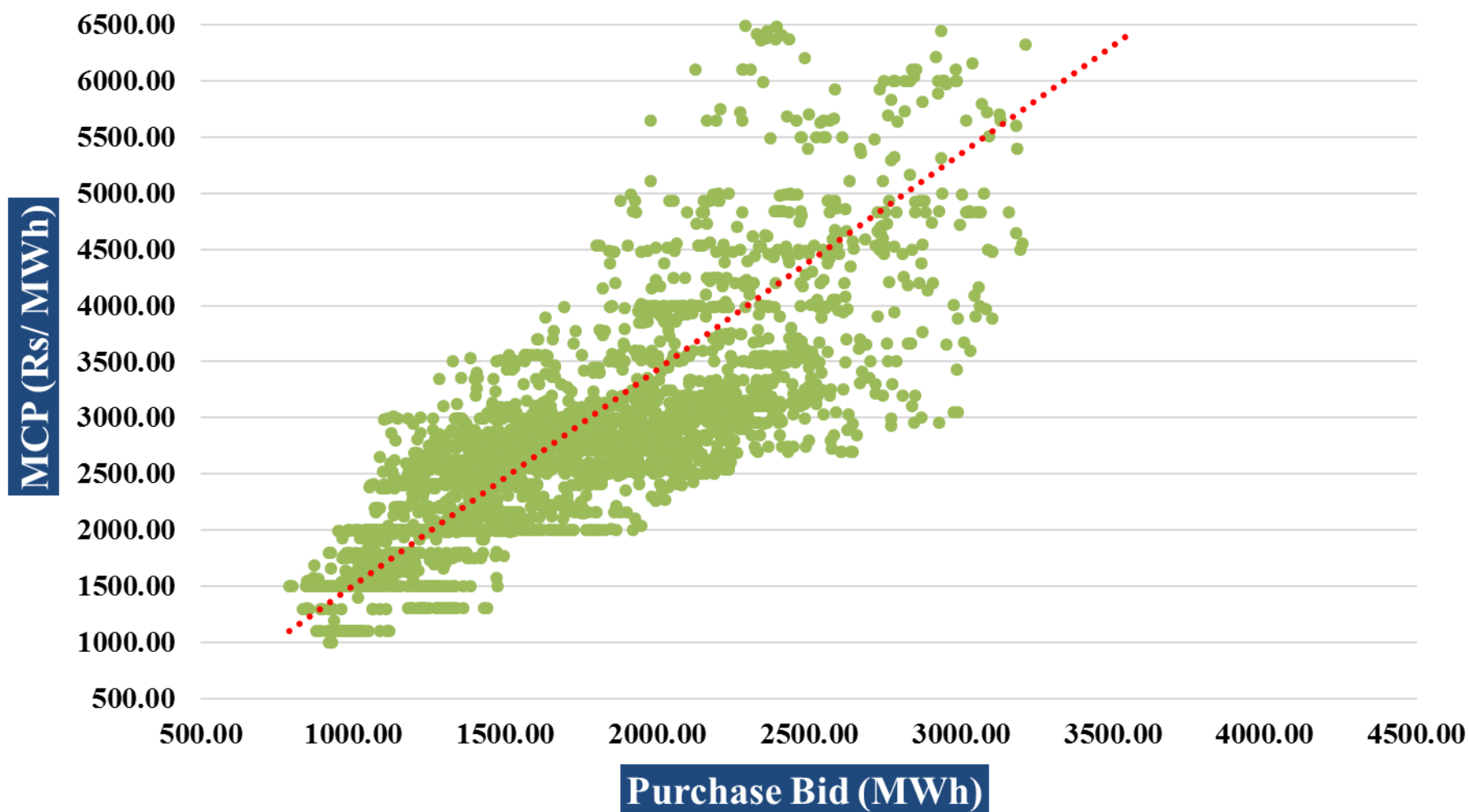
**Evening MCP, Day MCP, Night MCP, Morning MCP, Maximum MCP, Minimum MCP, Average MCP and Final Scheduled Volume (MU) in DAM**

| Date           | MCP during night<br>(01:00-06:00,<br>23:00-24:00) | MCP during<br>morning (07:00-<br>10:00) | MCP during<br>day (11:00-<br>17:00) | MCP during evening<br>(18:00- 23:00) | Maximum<br>MCP | Minimum<br>MCP | Average<br>MCP | Final<br>Scheduled<br>Volume (MU) |
|----------------|---------------------------------------------------|-----------------------------------------|-------------------------------------|--------------------------------------|----------------|----------------|----------------|-----------------------------------|
| 01-07-2021     | 4.24                                              | 2.74                                    | 2.71                                | 4.74                                 | 7.50           | 2.47           | 3.67           | 131.54                            |
| 02-07-2021     | 3.94                                              | 2.62                                    | 2.54                                | 4.95                                 | 8.81           | 2.09           | 3.56           | 119.32                            |
| 03-07-2021     | 4.60                                              | 2.66                                    | 2.68                                | 5.28                                 | 10.00          | 2.32           | 3.89           | 130.82                            |
| 04-07-2021     | 3.07                                              | 2.51                                    | 2.21                                | 2.89                                 | 4.84           | 1.80           | 2.68           | 117.80                            |
| 05-07-2021     | 3.59                                              | 2.93                                    | 2.94                                | 5.24                                 | 9.11           | 2.65           | 3.70           | 176.31                            |
| 06-07-2021     | 4.27                                              | 3.11                                    | 3.18                                | 4.64                                 | 6.51           | 2.70           | 3.85           | 170.00                            |
| 07-07-2021     | 5.35                                              | 3.61                                    | 3.49                                | 5.30                                 | 9.38           | 2.99           | 4.51           | 161.62                            |
| 08-07-2021     | 6.41                                              | 3.75                                    | 3.67                                | 6.05                                 | 10.90          | 2.96           | 5.08           | 150.70                            |
| 09-07-2021     | 3.58                                              | 2.45                                    | 2.65                                | 4.61                                 | 7.41           | 2.00           | 3.38           | 148.60                            |
| 10-07-2021     | 3.11                                              | 2.67                                    | 2.82                                | 3.55                                 | 4.50           | 2.22           | 3.06           | 152.49                            |
| 11-07-2021     | 3.34                                              | 2.70                                    | 2.48                                | 3.05                                 | 4.53           | 1.98           | 2.91           | 147.20                            |
| 12-07-2021     | 3.65                                              | 2.97                                    | 2.93                                | 4.42                                 | 6.10           | 2.75           | 3.52           | 169.89                            |
| 13-07-2021     | 3.43                                              | 2.68                                    | 2.86                                | 4.08                                 | 5.65           | 2.10           | 3.30           | 163.44                            |
| 14-07-2021     | 3.05                                              | 1.80                                    | 2.18                                | 3.53                                 | 4.44           | 1.50           | 2.71           | 132.37                            |
| 15-07-2021     | 3.02                                              | 2.35                                    | 2.46                                | 3.88                                 | 4.93           | 1.75           | 2.96           | 143.48                            |
| 16-07-2021     | 3.09                                              | 2.70                                    | 2.16                                | 4.17                                 | 5.80           | 1.50           | 3.02           | 152.96                            |
| 17-07-2021     | 3.48                                              | 2.93                                    | 2.24                                | 4.90                                 | 7.00           | 1.50           | 3.38           | 149.03                            |
| 18-07-2021     | 3.31                                              | 2.13                                    | 1.50                                | 2.88                                 | 4.98           | 1.50           | 2.48           | 119.37                            |
| 19-07-2021     | 2.06                                              | 1.60                                    | 1.55                                | 2.62                                 | 3.00           | 1.50           | 1.98           | 103.00                            |
| 20-07-2021     | 1.90                                              | 1.44                                    | 1.19                                | 2.59                                 | 3.04           | 1.10           | 1.79           | 106.83                            |
| 21-07-2021     | 2.17                                              | 1.41                                    | 1.35                                | 2.90                                 | 3.70           | 1.10           | 1.99           | 111.33                            |
| 22-07-2021     | 1.95                                              | 2.09                                    | 1.58                                | 3.03                                 | 3.85           | 1.30           | 2.14           | 131.81                            |
| 23-07-2021     | 2.36                                              | 2.64                                    | 2.39                                | 3.69                                 | 4.83           | 2.00           | 2.75           | 152.28                            |
| 24-07-2021     | 2.83                                              | 2.79                                    | 2.18                                | 3.89                                 | 4.84           | 1.50           | 2.90           | 161.32                            |
| 25-07-2021     | 2.38                                              | 2.07                                    | 1.57                                | 2.97                                 | 4.00           | 1.50           | 2.24           | 120.32                            |
| 26-07-2021     | 2.21                                              | 2.00                                    | 1.75                                | 3.57                                 | 4.62           | 1.30           | 2.38           | 112.00                            |
| 27-07-2021     | 2.25                                              | 2.19                                    | 1.63                                | 2.71                                 | 3.53           | 1.50           | 2.17           | 107.26                            |
| 28-07-2021     | 2.17                                              | 2.46                                    | 1.79                                | 2.98                                 | 3.70           | 1.50           | 2.31           | 121.81                            |
| 29-07-2021     | 2.12                                              | 2.43                                    | 2.02                                | 3.01                                 | 4.00           | 1.98           | 2.37           | 127.85                            |
| 30-07-2021     | 2.11                                              | 2.47                                    | 2.05                                | 3.31                                 | 4.25           | 1.80           | 2.45           | 125.03                            |
| 31-07-2021     | 1.63                                              | 2.48                                    | 2.16                                | 2.78                                 | 3.39           | 1.00           | 2.21           | 120.45                            |
| <b>Maximum</b> | <b>6.41</b>                                       | <b>3.75</b>                             | <b>3.67</b>                         | <b>6.05</b>                          | <b>10.90</b>   | <b>2.99</b>    | <b>5.08</b>    | <b>176.31</b>                     |
| <b>Minimum</b> | <b>1.63</b>                                       | <b>1.41</b>                             | <b>1.19</b>                         | <b>2.59</b>                          | <b>3.00</b>    | <b>1.00</b>    | <b>1.79</b>    | <b>103.00</b>                     |
| <b>Average</b> | <b>3.12</b>                                       | <b>2.50</b>                             | <b>2.29</b>                         | <b>3.81</b>                          | <b>5.59</b>    | <b>1.87</b>    | <b>2.95</b>    | <b>136.72</b>                     |

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 July, 2021



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

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

| Date       | Max. FSV (MU) |       | Max. MCP (Rs/kWh) |       | Min FSV (MU)  |       | Min. MCP (Rs/kWh) |       |
|------------|---------------|-------|-------------------|-------|---------------|-------|-------------------|-------|
|            | Time Block    | Value | Time Block        | Value | Time Block    | Value | Time Block        | Value |
| 01-07-2021 | 00:00 - 00:15 | 1.87  | 22:15 - 22:30     | 7.50  | 18:00 - 18:15 | 1.05  | 11:15 - 11:30     | 2.47  |
| 02-07-2021 | 00:00 - 00:15 | 1.78  | 21:45 - 22:00     | 8.81  | 10:30 - 10:45 | 0.91  | 08:00 - 08:15     | 2.09  |
| 03-07-2021 | 00:00 - 00:15 | 1.74  | 23:45 - 24:00     | 10.00 | 10:00 - 10:15 | 0.99  | 10:00 - 10:15     | 2.32  |
| 04-07-2021 | 06:45 - 07:00 | 1.66  | 23:00 - 23:15     | 4.84  | 13:45 - 14:00 | 0.99  | 04:15 - 04:30     | 1.80  |
| 05-07-2021 | 07:15 - 07:30 | 2.55  | 22:15 - 22:30     | 9.11  | 03:15 - 03:30 | 1.46  | 10:00 - 10:15     | 2.65  |
| 06-07-2021 | 07:15 - 07:30 | 2.32  | 23:30 - 23:45     | 6.51  | 09:45 - 10:00 | 1.43  | 10:00 - 10:15     | 2.70  |
| 07-07-2021 | 07:15 - 07:30 | 2.17  | 21:45 - 22:00     | 9.38  | 18:45 - 19:00 | 1.39  | 18:30 - 18:45     | 2.99  |
| 08-07-2021 | 07:15 - 07:30 | 1.82  | 23:15 - 23:30     | 10.90 | 17:45 - 18:00 | 1.32  | 18:45 - 19:00     | 2.96  |
| 09-07-2021 | 23:00 - 23:15 | 2.09  | 22:15 - 22:30     | 7.41  | 09:00 - 09:15 | 1.15  | 08:00 - 08:15     | 2.00  |
| 10-07-2021 | 07:00 - 07:15 | 2.05  | 21:45 - 22:00     | 4.50  | 04:45 - 05:00 | 1.27  | 17:45 - 18:00     | 2.22  |
| 11-07-2021 | 00:00 - 00:15 | 2.30  | 23:15 - 23:30     | 4.53  | 17:45 - 18:00 | 1.14  | 16:45 - 17:00     | 1.98  |
| 12-07-2021 | 23:15 - 23:30 | 2.28  | 21:30 - 21:45     | 6.10  | 05:45 - 06:00 | 1.40  | 13:00 - 13:15     | 2.75  |
| 13-07-2021 | 22:30 - 22:45 | 2.09  | 21:45 - 22:00     | 5.65  | 17:45 - 18:00 | 1.34  | 08:00 - 08:15     | 2.10  |
| 14-07-2021 | 21:45 - 22:00 | 1.99  | 21:15 - 21:30     | 4.44  | 08:00 - 08:15 | 0.92  | 09:00 - 09:15     | 1.50  |
| 15-07-2021 | 22:45 - 23:00 | 2.26  | 21:30 - 21:45     | 4.93  | 04:45 - 05:00 | 1.16  | 08:00 - 08:15     | 1.75  |
| 16-07-2021 | 23:00 - 23:15 | 2.35  | 22:15 - 22:30     | 5.80  | 13:15 - 13:30 | 1.14  | 13:15 - 13:30     | 1.50  |
| 17-07-2021 | 00:00 - 00:15 | 2.05  | 21:45 - 22:00     | 7.00  | 13:15 - 13:30 | 1.05  | 13:15 - 13:30     | 1.50  |
| 18-07-2021 | 00:00 - 00:15 | 2.33  | 00:00 - 00:15     | 4.98  | 11:00 - 11:15 | 0.78  | 11:00 - 11:15     | 1.50  |
| 19-07-2021 | 19:45 - 20:00 | 1.46  | 22:30 - 22:45     | 3.00  | 05:15 - 05:30 | 0.80  | 13:15 - 13:30     | 1.50  |
| 20-07-2021 | 19:45 - 20:00 | 1.38  | 22:45 - 23:00     | 3.04  | 08:00 - 08:15 | 0.84  | 13:00 - 13:15     | 1.10  |
| 21-07-2021 | 22:30 - 22:45 | 1.77  | 19:45 - 20:00     | 3.70  | 17:45 - 18:00 | 0.91  | 13:15 - 13:30     | 1.10  |
| 22-07-2021 | 21:30 - 21:45 | 2.05  | 19:45 - 20:00     | 3.85  | 04:45 - 05:00 | 1.00  | 13:00 - 13:15     | 1.30  |
| 23-07-2021 | 22:15 - 22:30 | 1.92  | 19:45 - 20:00     | 4.83  | 05:30 - 05:45 | 1.27  | 13:15 - 13:30     | 2.00  |
| 24-07-2021 | 07:15 - 07:30 | 2.36  | 20:30 - 20:45     | 4.84  | 17:45 - 18:00 | 1.32  | 13:00 - 13:15     | 1.50  |
| 25-07-2021 | 22:45 - 23:00 | 1.92  | 21:30 - 21:45     | 4.00  | 13:00 - 13:15 | 0.87  | 12:45 - 13:00     | 1.50  |
| 26-07-2021 | 21:45 - 22:00 | 1.72  | 21:45 - 22:00     | 4.62  | 04:45 - 05:00 | 0.77  | 05:15 - 05:30     | 1.30  |
| 27-07-2021 | 07:30 - 07:45 | 1.51  | 21:45 - 22:00     | 3.53  | 04:45 - 05:00 | 0.83  | 13:00 - 13:15     | 1.50  |
| 28-07-2021 | 07:15 - 07:30 | 1.78  | 21:30 - 21:45     | 3.70  | 01:45 - 02:00 | 1.04  | 13:15 - 13:30     | 1.50  |
| 29-07-2021 | 07:30 - 07:45 | 1.89  | 19:45 - 20:00     | 4.00  | 23:45 - 24:00 | 1.03  | 13:15 - 13:30     | 1.98  |
| 30-07-2021 | 07:00 - 07:15 | 2.02  | 21:30 - 21:45     | 4.25  | 00:00 - 00:15 | 0.93  | 04:30 - 04:45     | 1.80  |
| 31-07-2021 | 07:15 - 07:30 | 2.00  | 21:45 - 22:00     | 3.39  | 04:45 - 05:00 | 0.87  | 03:30 - 03:45     | 1.00  |

**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 July, 2021**

| S. No. | Entity Name            | Sell   |             | Entity Name          | Purchase |             |
|--------|------------------------|--------|-------------|----------------------|----------|-------------|
|        |                        | (MU)   | Percent (%) |                      | (MU)     | Percent (%) |
| 1.     | Himachal Pradesh       | 407.13 | 9.60%       | Gujarat              | 919.86   | 21.69%      |
| 2.     | Karnataka              | 352.61 | 8.31%       | Maharashtra          | 539.31   | 12.72%      |
| 3.     | Orissa                 | 245.73 | 5.79%       | Punjab               | 518.66   | 12.23%      |
| 4.     | Sembcorp Gayatri       | 190.66 | 4.50%       | Haryana              | 335.12   | 7.90%       |
| 5.     | Uttar Pradesh          | 180.88 | 4.27%       | Tamilnadu            | 304.56   | 7.18%       |
| 6.     | J&K                    | 179.57 | 4.23%       | Uttar Pradesh        | 297.08   | 7.00%       |
| 7.     | Kameng HEP             | 162.29 | 3.83%       | Telangana            | 237.98   | 5.61%       |
| 8.     | Telangana              | 146.69 | 3.46%       | Bihar                | 161.98   | 3.82%       |
| 9.     | Kerala                 | 139.76 | 3.30%       | Madhya Pradesh       | 132.52   | 3.12%       |
| 10.    | Essar Power MP Ltd     | 138.66 | 3.27%       | Andhra Pradesh       | 122.48   | 2.89%       |
| 11.    | Teesta -3              | 138.35 | 3.26%       | Rajasthan            | 110.11   | 2.60%       |
| 12.    | West Bengal            | 121.90 | 2.87%       | Uttarakhand          | 103.75   | 2.45%       |
| 13.    | Jindal Power           | 110.29 | 2.60%       | Assam                | 80.93    | 1.91%       |
| 14.    | Chhatisgarh            | 104.47 | 2.46%       | Delhi                | 72.63    | 1.71%       |
| 15.    | Delhi                  | 97.86  | 2.31%       | NVVN (SNA) - NEA     | 72.23    | 1.70%       |
| 16.    | MB Power               | 75.91  | 1.79%       | Karnataka            | 47.78    | 1.13%       |
| 17.    | Thermal Powertech      | 73.15  | 1.72%       | Kerala               | 38.02    | 0.90%       |
| 18.    | Rajasthan              | 69.74  | 1.64%       | ArcelorMittal Nippon | 27.56    | 0.65%       |
| 19.    | Maharashtra            | 69.25  | 1.63%       | Dadra & Nagar Haveli | 25.75    | 0.61%       |
| 20.    | Sainj HEP              | 68.95  | 1.63%       | Chhatisgarh          | 19.84    | 0.47%       |
| 21.    | Singoli Bhagwati       | 65.37  | 1.54%       | West Bengal          | 18.59    | 0.44%       |
| 22.    | Jorethang              | 65.01  | 1.53%       | Himachal Pradesh     | 14.98    | 0.35%       |
| 23.    | Tashiding HEP          | 63.50  | 1.50%       | Daman & Diu          | 11.43    | 0.27%       |
| 24.    | Madhya Pradesh         | 62.90  | 1.48%       | Orissa               | 10.40    | 0.25%       |
| 25.    | RKM Power              | 56.20  | 1.33%       | Jharkhand            | 7.20     | 0.17%       |
| 26.    | Karcham Wangtoo        | 54.02  | 1.27%       | Meghalaya            | 4.14     | 0.10%       |
| 27.    | Assam                  | 51.02  | 1.20%       | Chandigarh           | 2.83     | 0.07%       |
| 28.    | Jaypee Nigrie          | 49.26  | 1.16%       | Goa WR               | 2.83     | 0.07%       |
| 29.    | AD Hydro               | 46.34  | 1.09%       | Manipur              | 0.47     | 0.01%       |
| 30.    | Bihar                  | 43.09  | 1.02%       |                      |          |             |
| 31.    | Jindal Power Ltd. Stg- | 37.23  | 0.88%       |                      |          |             |
| 32.    | Maruti Clean Coal      | 36.91  | 0.87%       |                      |          |             |
| 33.    | GMR Warora             | 36.73  | 0.87%       |                      |          |             |
| 34.    | JITPL                  | 34.79  | 0.82%       |                      |          |             |
| 35.    | Talcher Stg-2          | 28.35  | 0.67%       |                      |          |             |
| 36.    | Dikchu                 | 27.71  | 0.65%       |                      |          |             |
| 37.    | Goa WR                 | 26.64  | 0.63%       |                      |          |             |
| 38.    | Meghalaya              | 25.24  | 0.60%       |                      |          |             |
| 39.    | GMR Kamalanga          | 25.22  | 0.59%       |                      |          |             |
| 40.    | Chandigarh             | 23.72  | 0.56%       |                      |          |             |

|                               |                   |                 |               |                               |                 |               |
|-------------------------------|-------------------|-----------------|---------------|-------------------------------|-----------------|---------------|
| 41.                           | Palatana          | 23.52           | 0.55%         |                               |                 |               |
| 42.                           | Spectrum Coal     | 22.89           | 0.54%         |                               |                 |               |
| 43.                           | Tamilnadu         | 20.80           | 0.49%         |                               |                 |               |
| 44.                           | Andhra Pradesh    | 19.04           | 0.45%         |                               |                 |               |
| 45.                           | Ramagundam Stg-1  | 15.42           | 0.36%         |                               |                 |               |
| 46.                           | Jindal Steel      | 14.61           | 0.34%         |                               |                 |               |
| 47.                           | Jharkhand         | 14.29           | 0.34%         |                               |                 |               |
| 48.                           | Bongaigaon        | 12.63           | 0.30%         |                               |                 |               |
| 49.                           | Adhunik Power     | 12.35           | 0.29%         |                               |                 |               |
| 50.                           | Jhabua Power      | 12.29           | 0.29%         |                               |                 |               |
| 51.                           | Arunachal Pradesh | 12.11           | 0.29%         |                               |                 |               |
| 52.                           | Chuzachen         | 12.05           | 0.28%         |                               |                 |               |
| 53.                           | ACBIL             | 11.80           | 0.28%         |                               |                 |               |
| 54.                           | DVC               | 11.69           | 0.28%         |                               |                 |               |
| 55.                           | DB Power          | 10.18           | 0.24%         |                               |                 |               |
| 56.                           | Torrent Power     | 9.88            | 0.23%         |                               |                 |               |
| 57.                           | Sikkim            | 7.94            | 0.19%         |                               |                 |               |
| 58.                           | Gujarat           | 7.91            | 0.19%         |                               |                 |               |
| 59.                           | Adani Power STG2  | 6.71            | 0.16%         |                               |                 |               |
| 60.                           | Lanco Budhil      | 6.65            | 0.16%         |                               |                 |               |
| 61.                           | NTPC Kudgi        | 4.59            | 0.11%         |                               |                 |               |
| 62.                           | Mizoram           | 4.58            | 0.11%         |                               |                 |               |
| 63.                           | BALCO 2           | 4.49            | 0.11%         |                               |                 |               |
| 64.                           | Simhadri Stg-2    | 4.19            | 0.10%         |                               |                 |               |
| 65.                           | Ramagundam Stg-3  | 4.09            | 0.10%         |                               |                 |               |
| 66.                           | IL&FS             | 3.01            | 0.07%         |                               |                 |               |
| 67.                           | Raipur Energen    | 2.65            | 0.06%         |                               |                 |               |
| 68.                           | Adani Power STG3  | 2.59            | 0.06%         |                               |                 |               |
| 69.                           | NLC TPS-II        | 2.39            | 0.06%         |                               |                 |               |
| 70.                           | Nagaland          | 2.34            | 0.06%         |                               |                 |               |
| 71.                           | Tripura           | 2.30            | 0.05%         |                               |                 |               |
| 72.                           | Dadri TPS         | 1.40            | 0.03%         |                               |                 |               |
| 73.                           | RGPP              | 1.39            | 0.03%         |                               |                 |               |
| 74.                           | KSK Mahanadi      | 1.25            | 0.03%         |                               |                 |               |
| 75.                           | Haryana           | 0.71            | 0.02%         |                               |                 |               |
| 76.                           | Dhariwal          | 0.47            | 0.01%         |                               |                 |               |
| 77.                           | Uttarakhand       | 0.31            | 0.01%         |                               |                 |               |
| 78.                           | Dadri_RLNG Fuel   | 0.26            | 0.01%         |                               |                 |               |
| 79.                           | Auraiya_RLNG Fuel | 0.07            | 0.00%         |                               |                 |               |
| 80.                           | Talcher           | 0.03            | 0.00%         |                               |                 |               |
| 81.                           | Anta_RLNG Fuel    | 0.02            | 0.00%         |                               |                 |               |
| 82.                           | Farakka           | 0.01            | 0.00%         |                               |                 |               |
| <b>Total Volume of top 10</b> |                   | <b>2,143.98</b> | <b>50.55%</b> | <b>Total Volume of top 10</b> | <b>3,569.55</b> | <b>84.17%</b> |
| <b>Total Volume in PXs</b>    |                   | <b>4,241.01</b> |               | <b>Total Volume in PXs</b>    | <b>4,241.01</b> |               |

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

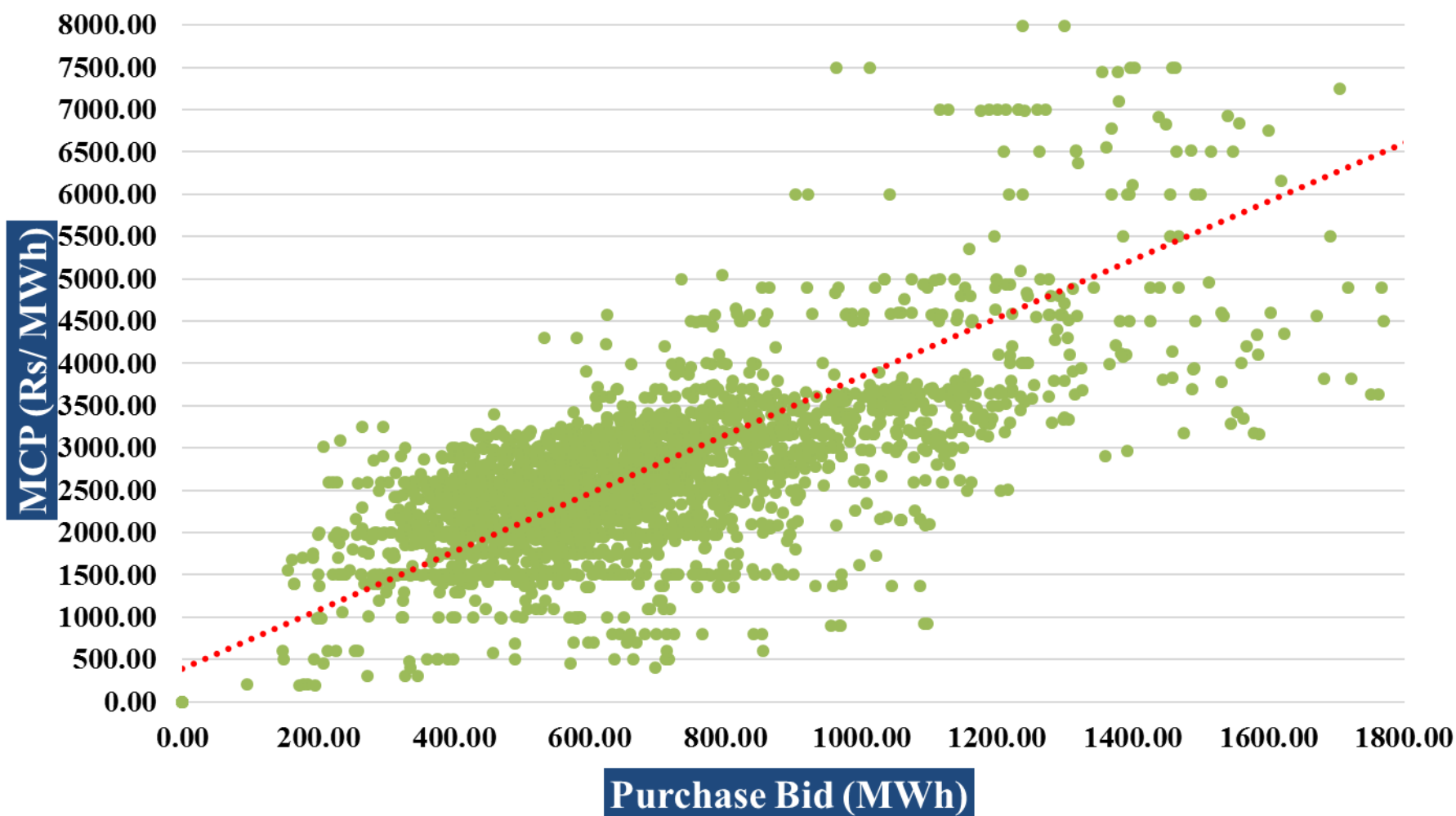
| Date       | MCP during night (01:00-06:00, 23:00-) | MCP during morning (07:00-10:00) | MCP during day (11:00-17:00) | MCP during evening (18:00- 23:00) | Maximum MCP | Minimum MCP | Average MCP | Final Scheduled Volume (MU) |
|------------|----------------------------------------|----------------------------------|------------------------------|-----------------------------------|-------------|-------------|-------------|-----------------------------|
| 01-07-2021 | 2.92                                   | 2.08                             | 2.46                         | 2.54                              | 3.70        | 1.50        | 2.74        | 47.84                       |
| 02-07-2021 | 3.07                                   | 2.43                             | 2.33                         | 2.52                              | 3.45        | 0.60        | 2.58        | 46.91                       |
| 03-07-2021 | 2.59                                   | 2.53                             | 2.78                         | 2.65                              | 4.10        | 1.00        | 2.73        | 53.01                       |
| 04-07-2021 | 2.64                                   | 2.61                             | 2.42                         | 2.59                              | 4.20        | 2.07        | 2.93        | 56.94                       |
| 05-07-2021 | 2.82                                   | 2.17                             | 2.45                         | 2.90                              | 10.00       | 2.82        | 4.08        | 53.18                       |
| 06-07-2021 | 3.09                                   | 2.78                             | 2.86                         | 2.87                              | 16.85       | 2.91        | 6.47        | 53.93                       |
| 07-07-2021 | 2.65                                   | 2.30                             | 2.93                         | 2.98                              | 7.99        | 2.80        | 4.25        | 68.29                       |
| 08-07-2021 | 3.27                                   | 2.73                             | 3.18                         | 3.74                              | 3.94        | 1.90        | 2.71        | 57.52                       |
| 09-07-2021 | 3.25                                   | 2.70                             | 2.59                         | 2.33                              | 7.24        | 1.50        | 2.92        | 45.71                       |
| 10-07-2021 | 2.77                                   | 2.51                             | 2.76                         | 3.00                              | 4.90        | 2.30        | 3.31        | 81.61                       |
| 11-07-2021 | 2.65                                   | 1.31                             | 2.20                         | 2.42                              | 4.90        | 1.20        | 2.66        | 72.51                       |
| 12-07-2021 | 2.19                                   | 2.44                             | 1.76                         | 2.10                              | 3.20        | 1.40        | 2.39        | 50.62                       |
| 13-07-2021 | 1.95                                   | 1.53                             | 1.92                         | 2.70                              | 3.41        | 0.20        | 2.30        | 45.36                       |
| 14-07-2021 | 2.97                                   | 2.99                             | 2.49                         | 2.64                              | 3.80        | 1.10        | 2.44        | 51.16                       |
| 15-07-2021 | 2.61                                   | 2.29                             | 2.04                         | 2.65                              | 5.00        | 0.50        | 2.66        | 43.07                       |
| 16-07-2021 | 2.54                                   | 1.80                             | 1.60                         | 2.48                              | 10.50       | 2.01        | 4.03        | 47.53                       |
| 17-07-2021 | 2.73                                   | 2.24                             | 2.38                         | 3.03                              | 10.00       | 2.50        | 3.98        | 63.69                       |
| 18-07-2021 | 2.89                                   | 2.36                             | 1.90                         | 2.26                              | 3.40        | 1.20        | 2.02        | 40.57                       |
| 19-07-2021 | 2.12                                   | 1.72                             | 1.65                         | 2.27                              | 3.10        | 0.40        | 1.62        | 65.93                       |
| 20-07-2021 | 1.78                                   | 1.78                             | 1.27                         | 2.10                              | 3.29        | 1.00        | 2.07        | 57.21                       |
| 21-07-2021 | 2.26                                   | 1.15                             | 1.60                         | 2.56                              | 3.41        | 0.48        | 2.20        | 47.38                       |
| 22-07-2021 | 2.13                                   | 2.12                             | 2.39                         | 3.05                              | 3.41        | 1.20        | 2.30        | 50.58                       |
| 23-07-2021 | 2.62                                   | 2.08                             | 2.22                         | 3.46                              | 3.43        | 1.50        | 2.38        | 43.92                       |
| 24-07-2021 | 3.41                                   | 2.71                             | 2.47                         | 3.50                              | 6.00        | 1.20        | 2.59        | 46.12                       |
| 25-07-2021 | 3.07                                   | 2.59                             | 2.49                         | 3.66                              | 3.41        | 0.30        | 2.24        | 53.22                       |
| 26-07-2021 | 2.74                                   | 1.92                             | 2.03                         | 2.67                              | 4.80        | 1.00        | 2.57        | 47.73                       |
| 27-07-2021 | 2.55                                   | 1.78                             | 1.75                         | 2.47                              | 3.28        | 1.40        | 2.36        | 46.93                       |
| 28-07-2021 | 2.77                                   | 2.33                             | 2.40                         | 3.55                              | 3.25        | 1.50        | 2.10        | 45.47                       |
| 29-07-2021 | 4.21                                   | 2.86                             | 3.07                         | 3.84                              | 3.00        | 0.50        | 2.15        | 33.64                       |
| 30-07-2021 | 3.02                                   | 2.23                             | 2.29                         | 2.29                              | 2.88        | 0.20        | 1.85        | 33.33                       |
| 31-07-2021 | 2.54                                   | 2.21                             | 2.31                         | 2.28                              | 2.79        | 0.50        | 1.92        | 45.11                       |
| Maximum    | 4.21                                   | 2.99                             | 3.18                         | 3.84                              | 16.85       | 2.91        | 6.47        | 81.61                       |
| Minimum    | 1.78                                   | 1.15                             | 1.27                         | 2.10                              | 2.79        | 0.20        | 1.62        | 33.33                       |
| Average    | 2.74                                   | 2.24                             | 2.29                         | 2.78                              | 5.05        | 1.31        | 2.76        | 51.48                       |

MCP: Market Clearing Price (Rs/kWh)

FSV: Final Scheduled Volume (MU)

Annexure-IX

## Comparison of MCP w.r.t. Purchase Bid for 2,976 Time Blocks during the month of July, 2021



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

**Maximum Final Schedule Volume (FSV), Minimum FSV, Maximum Market Clearing Price (MCP) and Minimum MCP in RTM**

| Date       | Max. FSV (MU) |       | Max. MCP (Rs/kWh) |       | Min FSV (MU) |       | Min. MCP (Rs/kWh) |       |
|------------|---------------|-------|-------------------|-------|--------------|-------|-------------------|-------|
|            | Time Block    | Value | Time Block        | Value | Time Block   | Value | Time Block        | Value |
| 01-07-2021 | 21:45-22:00   | 1.04  | 00:15-00:30       | 3.70  | 05:45-06:00  | 0.26  | 18:00-18:15       | 1.50  |
| 02-07-2021 | 12:30-12:45   | 0.80  | 00:00-00:15       | 3.45  | 18:45-19:00  | 0.25  | 18:45-19:00       | 0.60  |
| 03-07-2021 | 21:30-21:45   | 0.93  | 21:45-22:00       | 4.10  | 12:30-12:45  | 0.30  | 04:45-05:00       | 1.00  |
| 04-07-2021 | 21:30-21:45   | 1.09  | 22:15-22:30       | 4.20  | 08:45-09:00  | 0.38  | 18:00-18:15       | 2.07  |
| 05-07-2021 | 01:00-01:15   | 0.98  | 23:30-23:45       | 10.00 | 08:45-09:00  | 0.30  | 18:00-18:15       | 2.82  |
| 06-07-2021 | 15:30-15:45   | 0.83  | 23:30-23:45       | 16.85 | 22:00-22:15  | 0.31  | 09:30-09:45       | 2.91  |
| 07-07-2021 | 23:30-23:45   | 1.18  | 00:15-00:30       | 7.99  | 05:15-05:30  | 0.35  | 18:15-18:30       | 2.80  |
| 08-07-2021 | 00:00-00:15   | 1.11  | 21:00-21:15       | 3.94  | 18:30-18:45  | 0.31  | 07:45-08:00       | 1.90  |
| 09-07-2021 | 22:45-23:00   | 1.11  | 22:15-22:30       | 7.24  | 04:15-04:30  | 0.27  | 12:15-12:30       | 1.50  |
| 10-07-2021 | 23:45-24:00   | 1.48  | 20:45-21:00       | 4.90  | 08:15-08:30  | 0.54  | 13:00-13:15       | 2.30  |
| 11-07-2021 | 00:30-00:45   | 1.11  | 00:45-01:00       | 4.90  | 22:30-22:45  | 0.39  | 11:30-11:45       | 1.20  |
| 12-07-2021 | 16:15-16:30   | 0.77  | 22:45-23:00       | 3.20  | 18:00-18:15  | 0.35  | 06:15-06:30       | 1.40  |
| 13-07-2021 | 23:15-23:30   | 0.81  | 22:30-22:45       | 3.41  | 08:15-08:30  | 0.18  | 08:15-08:30       | 0.20  |
| 14-07-2021 | 15:15-15:30   | 0.85  | 20:15-20:30       | 3.80  | 09:00-09:15  | 0.30  | 13:45-14:00       | 1.10  |
| 15-07-2021 | 23:30-23:45   | 0.95  | 22:30-22:45       | 5.00  | 13:30-13:45  | 0.19  | 13:30-13:45       | 0.50  |
| 16-07-2021 | 23:45-24:00   | 0.79  | 22:15-22:30       | 10.50 | 18:15-18:30  | 0.31  | 04:00-04:15       | 2.01  |
| 17-07-2021 | 01:30-01:45   | 0.93  | 20:30-20:45       | 10.00 | 23:15-23:30  | 0.34  | 23:15-23:30       | 2.50  |
| 18-07-2021 | 15:45-16:00   | 0.74  | 00:00-00:15       | 3.40  | 18:45-19:00  | 0.24  | 09:45-10:00       | 1.20  |
| 19-07-2021 | 15:00-15:15   | 1.06  | 22:15-22:30       | 3.10  | 09:00-09:15  | 0.40  | 13:30-13:45       | 0.40  |
| 20-07-2021 | 15:30-15:45   | 0.88  | 20:45-21:00       | 3.29  | 18:15-18:30  | 0.30  | 13:00-13:15       | 1.00  |
| 21-07-2021 | 23:45-24:00   | 0.78  | 19:15-19:30       | 3.41  | 00:15-00:30  | 0.28  | 02:45-03:00       | 0.48  |
| 22-07-2021 | 03:15-03:30   | 0.80  | 22:45-23:00       | 3.41  | 13:00-13:15  | 0.27  | 05:15-05:30       | 1.20  |
| 23-07-2021 | 02:00-02:15   | 0.70  | 21:30-21:45       | 3.43  | 13:00-13:15  | 0.20  | 12:30-12:45       | 1.50  |
| 24-07-2021 | 21:45-22:00   | 1.02  | 21:00-21:15       | 6.00  | 08:00-08:15  | 0.20  | 13:15-13:30       | 1.20  |
| 25-07-2021 | 14:45-15:00   | 1.01  | 22:15-22:30       | 3.41  | 03:45-04:00  | 0.27  | 18:00-18:15       | 0.30  |
| 26-07-2021 | 21:15-21:30   | 0.97  | 21:45-22:00       | 4.80  | 09:15-09:30  | 0.21  | 14:45-15:00       | 1.00  |
| 27-07-2021 | 01:00-01:15   | 0.76  | 00:00-00:15       | 3.28  | 11:00-11:15  | 0.26  | 10:15-10:30       | 1.40  |
| 28-07-2021 | 06:45-07:00   | 0.77  | 19:45-20:00       | 3.25  | 19:00-19:15  | 0.18  | 22:30-22:45       | 1.50  |
| 29-07-2021 | 07:00-07:15   | 0.57  | 19:45-20:00       | 3.00  | 14:30-14:45  | 0.15  | 13:00-13:15       | 0.50  |
| 30-07-2021 | 17:30-17:45   | 0.60  | 19:45-20:00       | 2.88  | 12:15-12:30  | 0.09  | 05:30-05:45       | 0.20  |
| 31-07-2021 | 08:30-08:45   | 0.66  | 21:45-22:00       | 2.79  | 23:30-23:45  | 0.16  | 11:45-12:00       | 0.50  |

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 July, 2021**

| S. No. | Entity Name            | Sell   |             | Entity Name          | Purchase |             |
|--------|------------------------|--------|-------------|----------------------|----------|-------------|
|        |                        | (MU)   | Percent (%) |                      | (MU)     | Percent (%) |
| 1.     | J&K                    | 278.42 | 17.44%      | Telangana            | 243.19   | 15.24%      |
| 2.     | Karnataka              | 131.17 | 8.22%       | Haryana              | 188.64   | 11.82%      |
| 3.     | Orissa                 | 104.66 | 6.56%       | Uttar Pradesh        | 175.04   | 10.97%      |
| 4.     | Telangana              | 89.40  | 5.60%       | Rajasthan            | 167.79   | 10.51%      |
| 5.     | Delhi                  | 88.20  | 5.53%       | West Bengal          | 166.09   | 10.41%      |
| 6.     | Kameng HEP             | 75.05  | 4.70%       | Maharashtra          | 105.26   | 6.59%       |
| 7.     | West Bengal            | 68.23  | 4.27%       | Bihar                | 95.50    | 5.98%       |
| 8.     | NLC TPS-II             | 58.96  | 3.69%       | Delhi                | 77.22    | 4.84%       |
| 9.     | Kerala                 | 58.86  | 3.69%       | Gujarat              | 70.02    | 4.39%       |
| 10.    | NLC TPS-II Stg-2       | 58.40  | 3.66%       | Andhra Pradesh       | 67.49    | 4.23%       |
| 11.    | Rajasthan              | 56.45  | 3.54%       | Punjab               | 46.46    | 2.91%       |
| 12.    | Uttar Pradesh          | 54.99  | 3.45%       | Tamilnadu            | 40.57    | 2.54%       |
| 13.    | NLC                    | 35.11  | 2.20%       | Orissa               | 29.06    | 1.82%       |
| 14.    | MB Power               | 32.85  | 2.06%       | Assam                | 24.96    | 1.56%       |
| 15.    | Neyveli New Thermal    | 31.32  | 1.96%       | Madhya Pradesh       | 23.51    | 1.47%       |
| 16.    | Chhattisgarh           | 28.72  | 1.80%       | Himachal Pradesh     | 13.18    | 0.83%       |
| 17.    | Sasan UMPP             | 27.81  | 1.74%       | Karnataka            | 11.85    | 0.74%       |
| 18.    | Himachal Pradesh       | 23.34  | 1.46%       | ArcelorMittal Nippon | 7.76     | 0.49%       |
| 19.    | Haryana                | 22.68  | 1.42%       | Jharkhand            | 7.56     | 0.47%       |
| 20.    | Ramagundam Stg-1       | 22.66  | 1.42%       | Kerala               | 6.59     | 0.41%       |
| 21.    | Madhya Pradesh         | 16.83  | 1.05%       | Uttarakhand          | 4.96     | 0.31%       |
| 22.    | RKM Power              | 14.80  | 0.93%       | Manipur              | 4.68     | 0.29%       |
| 23.    | Talcher Stg-2          | 13.50  | 0.85%       | Chhattisgarh         | 4.64     | 0.29%       |
| 24.    | Bihar                  | 13.38  | 0.84%       | Dadra & Nagar Haveli | 3.72     | 0.23%       |
| 25.    | Jhabua Power           | 13.19  | 0.83%       | Tripura              | 2.77     | 0.17%       |
| 26.    | GMR Warora             | 11.92  | 0.75%       | Tashiding HEP        | 1.48     | 0.09%       |
| 27.    | Jharkhand              | 11.47  | 0.72%       | Meghalaya            | 1.43     | 0.09%       |
| 28.    | Jindal Power Ltd. Stg- | 9.61   | 0.60%       | Jorethang            | 1.24     | 0.08%       |
| 29.    | Maharashtra            | 9.27   | 0.58%       | Daman & Diu          | 1.11     | 0.07%       |
| 30.    | Tripura                | 8.64   | 0.54%       | J&K                  | 0.62     | 0.04%       |
| 31.    | NLC TPS-II Expn        | 7.83   | 0.49%       | SKS Power            | 0.49     | 0.03%       |
| 32.    | NTPC Kudgi             | 6.48   | 0.41%       | DVC                  | 0.44     | 0.03%       |
| 33.    | Ramagundam Stg-3       | 6.33   | 0.40%       | Sikkim               | 0.42     | 0.03%       |
| 34.    | Simhadri Stg-2         | 6.12   | 0.38%       | Sainj HEP            | 0.21     | 0.01%       |
| 35.    | Manipur                | 6.10   | 0.38%       | Arunachal Pradesh    | 0.08     | 0.00%       |
| 36.    | Bongaigaon             | 6.05   | 0.38%       | ACBIL                | 0.02     | 0.00%       |
| 37.    | Assam                  | 5.93   | 0.37%       | DGEN Mega Power      | 0.01     | 0.00%       |
| 38.    | Jindal Power           | 5.73   | 0.36%       | Adani Power STG2     | 0.01     | 0.00%       |
| 39.    | Sikkim                 | 5.47   | 0.34%       |                      |          |             |

|     |                   |      |       |  |  |  |
|-----|-------------------|------|-------|--|--|--|
| 40. | Tamilnadu         | 4.86 | 0.30% |  |  |  |
| 41. | Sembcorp Gayatri  | 4.15 | 0.26% |  |  |  |
| 42. | Meghalaya         | 3.91 | 0.25% |  |  |  |
| 43. | Tashiding HEP     | 3.90 | 0.24% |  |  |  |
| 44. | Arunachal Pradesh | 3.37 | 0.21% |  |  |  |
| 45. | Teesta -3         | 3.22 | 0.20% |  |  |  |
| 46. | BALCO 2           | 3.09 | 0.19% |  |  |  |
| 47. | GMR Kamalanga     | 3.08 | 0.19% |  |  |  |
| 48. | Palatana          | 2.83 | 0.18% |  |  |  |
| 49. | Gujarat           | 2.58 | 0.16% |  |  |  |
| 50. | AGTPP             | 2.13 | 0.13% |  |  |  |
| 51. | Torrent Power     | 2.06 | 0.13% |  |  |  |
| 52. | NTPC Gadarwara    | 1.89 | 0.12% |  |  |  |
| 53. | Sainj HEP         | 1.79 | 0.11% |  |  |  |
| 54. | AD Hydro          | 1.73 | 0.11% |  |  |  |
| 55. | Maruti Clean Coal | 1.57 | 0.10% |  |  |  |
| 56. | Raipur Energen    | 1.56 | 0.10% |  |  |  |
| 57. | Mouda Stg-1       | 1.56 | 0.10% |  |  |  |
| 58. | Thermal Powertech | 1.54 | 0.10% |  |  |  |
| 59. | Khargone STPP     | 1.50 | 0.09% |  |  |  |
| 60. | AGBPP             | 1.33 | 0.08% |  |  |  |
| 61. | Andhra Pradesh    | 1.28 | 0.08% |  |  |  |
| 62. | Jorethang         | 1.19 | 0.07% |  |  |  |
| 63. | Karcham Wangtoo   | 1.14 | 0.07% |  |  |  |
| 64. | Adani Power STG3  | 1.12 | 0.07% |  |  |  |
| 65. | Adani Power STG2  | 1.09 | 0.07% |  |  |  |
| 66. | Singoli Bhagwati  | 1.07 | 0.07% |  |  |  |
| 67. | Farakka           | 0.96 | 0.06% |  |  |  |
| 68. | Jindal Steel      | 0.94 | 0.06% |  |  |  |
| 69. | Mouda Stg-2       | 0.90 | 0.06% |  |  |  |
| 70. | Simhadri Stg-1    | 0.89 | 0.06% |  |  |  |
| 71. | NTPC Sholapur     | 0.82 | 0.05% |  |  |  |
| 72. | ACBIL             | 0.76 | 0.05% |  |  |  |
| 73. | Dikchu            | 0.72 | 0.05% |  |  |  |
| 74. | DVC               | 0.53 | 0.03% |  |  |  |
| 75. | Farakka Stg 3     | 0.50 | 0.03% |  |  |  |
| 76. | Barh Stg-2        | 0.42 | 0.03% |  |  |  |
| 77. | Tanda Stg-2       | 0.35 | 0.02% |  |  |  |
| 78. | SKS Power         | 0.33 | 0.02% |  |  |  |
| 79. | IL&FS             | 0.32 | 0.02% |  |  |  |
| 80. | DB Power          | 0.28 | 0.02% |  |  |  |
| 81. | Spectrum Coal     | 0.22 | 0.01% |  |  |  |
| 82. | RGPPPL            | 0.13 | 0.01% |  |  |  |
| 83. | RGPPPL_IR         | 0.12 | 0.01% |  |  |  |
| 84. | RGPPPL_Others     | 0.08 | 0.00% |  |  |  |
| 85. | Nagaland          | 0.06 | 0.00% |  |  |  |

|                               |                      |                 |               |                               |                 |               |
|-------------------------------|----------------------|-----------------|---------------|-------------------------------|-----------------|---------------|
| 86.                           | NSPCL Bhilai         | 0.06            | 0.00%         |                               |                 |               |
| 87.                           | Chandigarh           | 0.06            | 0.00%         |                               |                 |               |
| 88.                           | Coastal Gujrat Power | 0.06            | 0.00%         |                               |                 |               |
| 89.                           | Dhariwal             | 0.04            | 0.00%         |                               |                 |               |
| 90.                           | Essar Power MP Ltd   | 0.02            | 0.00%         |                               |                 |               |
| <b>Total Volume of top 10</b> |                      | <b>1,011.35</b> | <b>63.37%</b> | <b>Total Volume of top 10</b> | <b>1,356.24</b> | <b>84.97%</b> |
| <b>Total Volume in PXs</b>    |                      | <b>1,596.06</b> |               | <b>Total Volume in PXs</b>    | <b>1,596.06</b> |               |

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

| S. No        | Delivery Date | Traded Volume (MU) |
|--------------|---------------|--------------------|
| 1            | 01-07-2021    | 2.86               |
| 2            | 02-07-2021    | 2.20               |
| 3            | 03-07-2021    | 0.10               |
| 4            | 04-07-2021    | 1.23               |
| 5            | 05-07-2021    | 2.15               |
| 6            | 06-07-2021    | 2.58               |
| 7            | 07-07-2021    | 2.64               |
| 8            | 08-07-2021    | 2.66               |
| 9            | 09-07-2021    | 3.10               |
| 10           | 10-07-2021    | 3.82               |
| 11           | 11-07-2021    | 4.10               |
| 12           | 12-07-2021    | 3.47               |
| 13           | 13-07-2021    | 3.94               |
| 14           | 14-07-2021    | 4.40               |
| 15           | 15-07-2021    | 4.40               |
| 16           | 16-07-2021    | 4.20               |
| 17           | 17-07-2021    | 2.80               |
| 18           | 18-07-2021    | 2.27               |
| 19           | 19-07-2021    | 1.27               |
| 20           | 20-07-2021    | 1.53               |
| 21           | 21-07-2021    | 0.77               |
| 22           | 22-07-2021    | 1.53               |
| 23           | 23-07-2021    | 1.54               |
| 24           | 24-07-2021    | 1.20               |
| 25           | 25-07-2021    | 0.90               |
| 26           | 26-07-2021    | 0.73               |
| 27           | 27-07-2021    | 0.73               |
| 28           | 28-07-2021    | 3.76               |
| 29           | 29-07-2021    | 4.39               |
| 30           | 30-07-2021    | 0.99               |
| 31           | 31-07-2021    | -                  |
| <b>Total</b> |               | <b>72.23</b>       |

∴ No transaction happened.

**Note:** Cross Border Transactions of Electricity of 72.23 MU (purchase only) happened with Nepal only during July, 2021.

**Appendix-I****Analysis for change in trend of Final Scheduled Volume in DAM on 03<sup>rd</sup> Monday and 04<sup>th</sup> Monday of July, 2021 (i.e. 19<sup>th</sup> July, 2021 and 26<sup>th</sup> July, 2021 respectively)**

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 July, 2021, it is observed that on third Monday (i.e. 19<sup>th</sup> July, 2021) and fourth Monday (i.e. 26<sup>th</sup> July, 2021), FSV showed decreasing trend in comparison to third Sunday (i.e. 18<sup>th</sup> July, 2021) and fourth Sunday (i.e. 25<sup>th</sup> July, 2021) respectively. On analysis, it has been found as under:

- (i) On third Monday (19<sup>th</sup> July, 2021), although there was increase in purchase on power exchange by some of the States in comparison to third Sunday (18<sup>th</sup> July, 2021) by **12.25 MU** [i.e. Maharashtra (5.62 MU), Punjab (2.00 MU), Tamil Nadu (1.83 MU), Andhra Pradesh (1.61 MU) and Telangana (1.20 MU), etc.], there was also decrease in purchase on power exchange by some of the States by **25.18 MU** [i.e. Haryana (9.42 MU), Gujarat (7.55 MU), Bihar (5.16 MU), Arcelor Mittal (2.05 MU) and Uttar Pradesh (1.00 MU) etc.]. This resulted in an overall decrease in FSV by **16.37 MU** on Monday (19<sup>th</sup> July, 2021).
- (ii) On fourth Monday (26<sup>th</sup> July, 2021), although there was increase in purchase on power exchange by some of the States in comparison to fourth Sunday (25<sup>th</sup> July, 2021) by **14.44 MU** [i.e. Maharashtra (5.23 MU), Tamilnadu (3.70 MU), Telangana (3.63 MU) and Bihar (1.89 MU), etc.], there was also decrease in purchase on power exchange by some of the States by **24.31 MU** [i.e. Gujarat (12.39 MU), Punjab (8.05 MU), Uttar Pradesh (2.85 MU) and Haryana (1.02 MU) etc.]. This resulted in an overall decrease in FSV by **8.32 MU** on Monday (26<sup>th</sup> July, 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.