# Monthly Report on Short-term Transactions of Electricity in India

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#### **Abbreviations**

**Abbreviation** Expanded Version

ABSP\_ANTP Acme Bhiwadi Solar Power Private Limited, Anantpur

ACBIL ACB (India) Limited
ACP Area Clearing Price
ACV Area Clearing Volume
ACME SLR ACME Solar Power Project

ACME\_RUMS Acme Rewa Ultra Mega Solar Project

ADANI GREEN Adani Green Energy Limited

ADANIHB\_SLR Adani Hybrid Energy Jaisalmer One Limited (Solar)

ADANI\_SLR 4 Adani Solar Energy Four Private Limited

ADANIHB\_WIND

Adani Hybrid Energy Jaisalmer One Limited (Wind)

ADY1\_PVGD

Adyah Solar Energy Pvt Ltd., Block 1 Pavagada Solar Park

ADY2\_PVGD

Adyah Solar Energy Pvt Ltd., Block 2 Pavagada Solar Park

ADY3\_PVGD

Adyah Solar Energy Pvt Ltd., Block 3 Pavagada Solar Park

ADY6\_PVGD

Adyah Solar Energy Pvt Ltd., Block 6 Pavagada Solar Park

ADY10\_PVGD

Adyah Solar Energy Pvt Ltd., Block 10 Pavagada Solar Park

ADY13\_PVGD

Adyah Solar Energy Pvt Ltd., Block 13 Pavagada Solar Park

AGEMPL BHUJ Adani Green Energy (MP) Ltd., Bhuj

AHEJOL\_S\_FTG2
Adani Hybrid Energy Jaisalmer One Limited (SOLAR)
AHEJOL\_W\_FTG2
Adani Hybrid Energy Jaisalmer One Limited (WIND)
AHEJ2L\_SOLAR
AHEJ3L\_SOLAR
AHEJ4L\_SOLAR
AHEJ4L\_SOLAR
AHEJ4L\_WIND
Adani Hybrid Energy Jaisalmer Three Limited (Solar)
Adani Hybrid Energy Jaisalmer Four Limited-Hybrid Solar
Adani Hybrid Energy Jaisalmer Four Limited-Hybrid Wind

AHSP\_ANTP Acme Hisar Solar Power Private Limited, Anantpur

AKS\_PVGD ACME Kurukshetra Solar Energy Pvt. Ltd

AKSP\_ANTP Acme Karnal Solar Power Private Limited, Anantpur

ALFANAR\_BHUJ Alfanar Group Wind Project, Bhuj, Gujarat AMPS Hazira Arcelor Mittal Nippon Steel, Hazira APTEL Appellate Tribunal for Electricity

ARERJL\_SLR Adani Renewable Energy Park Rajasthan Ltd.
ARINSUM\_RUMS Solenergi RewaUltraMega Solar Project
ARS\_PVGD ACME REWARI Solar Power Pvt Ltd.
ASEJTL\_SLR Adani Solar Energy Jodhpur Two Ltd.

AVAADA1\_PVGD Avaada Solar Energy Private Ltd., Pavagada Project 1 AVAADA2\_PVGD Avaada Solar Energy Private Ltd., Pavagada Project 2

AVADARJHN\_SLR Avaada Rjhn Private Limited\_Solar

AYANA\_NPKUNTA Ayana Power, NP Kunta AZURE\_ANTP Azure Power,Anantpur AZURE\_PVGD Azure Power,Pavagada

AZURE\_SLR Azure Power Solar Power Project

AZURE34\_SLR Azure Power 34 Pvt. Ltd. Solar Power Project
AZURE43\_SLR Azure Power Forty Three Private Limited
BALCO Bharat Aluminum Company Limited
BARC Bhabha Atomic Research Centre
BBMB Bhakra Beas Management Board

BETAM\_TCN
BHADRAVATHI HVDC
Betam Wind Energy Private Limited, Tuticorin
Bhadravathi High Voltage Direct Current Link

BRBCL Bhartiya Rail Bijlee Company Limited

CEA Central Electricity Authority

CERC Central Electricity Regulatory Commission

CGPL Coastal Gujarat Power Limited

CHUKHA HEP Chhukha Hydroelectric Project, Bhutan

CHUZACHEN HEP Chuzachen Hydro Electric Power Project

CLEAN\_SLR
Clean Solar Power Pvt. Ltd
CLEANSP\_SLR
COASTGEN
Coastal Energen Private Limited
DAGACHU
Dagachhu Hydro Power Corporation

DAM Day Ahead Market
DB POWER Diligent Power Pvt. Ltd.

DCPP Donga Mahua Captive Power Plant
DD&DNH Daman and Diu & Dadar Nagar Haveli

DGEN MEGA POWER DGEN Mega Power Project

DGPCL Bhutan Druk Green Power Corporation Ltd., Bhutan

DHARIWAL POWER Dhariwal Power Station

DIKCHU HEP Dikchu Hydro-electric Project, Sikkim

DOYANG HEP
DoyangHydro Electric Project
DSM
Deviation Settlement Mechanism
DVC
Damodar Valley Corporation
EDEN\_SLR
Eden RE Cite Private limited
EMCO
EMCO Energy Limited

ESPL\_RADHANESDA Electro Solaire Private Limited, Radhanesda

ESSAR POWER Essar Power Limited ESSAR STEEL Essar Steel Ltd

FORTUM1\_PVGD Fortum Finnsurya Energy Private Ltd, Pavagada Project 1 FORTUM2\_PVGD Fortum Finnsurya Energy Private Ltd, Pavagada Project 2

FRV\_ANTP Fotowatio Renewable Ventures, Anantapur FRV\_NPK Fotowatio Renewable Ventures, NP Kunta

GIPCL\_RADHANESDA Gujarat Industries Power Company Ltd, Radhanesda

GIWEL\_BHUJ Green infra wind energy Limited, Bhuj
GIWEL\_TCN Green Infra Wind Energy Limited, Tuticorin

GMR CHHATTISGARH
GMR KAMALANGA
G-DAM
G-TAM
GMR Chhattisgarh Energy Limited
GMR Kamalanga Energy Ltd.
Green Day Ahead Market
Green Term Ahead Market

HPX Hindustan Power Exchange Limited HP-DAM High Price Day Ahead Market

HVDC ALPD Alipurduar High Voltage Direct Current Link

HVDC CHAMPA Champa-Kurukshetra High Voltage Direct Current Link

HVDC PUS PasauliHigh Voltage Direct Current Link

HVDC RAIGARH Raigarh-Pugalur High Voltage Direct Current Link

IEX Indian Energy Exchange Limited

IGSTPS Indira Gandhi Super Thermal Power Station Jhajjar IL&FS Infrastructure Leasing & Financial Services Limited

INOX\_BHUJ INOX Wind Limited, Bhuj, Gujarat

J&K Jammu & Kashmir

JAYPEE NIGRIE Jaypee Nigrie Super Thermal Power Project

JHABUA POWER MP

Jhabua Thermal Power Project

JINDAL POWER

JINDAL STAGE-II

Jindal Power Ltd Stage II

JINDAL STAGE-II

Jindal Power Ltd Stage II

Jindal India Thomas Power I

JITPL Jindal India Thermal Power Ltd.

JORETHANG Jorethang Loop Hydroelectric Power Project

JSW\_RENEW\_2 JSW Renew Energy Two Limited

KAPP 3&4 Kakrapar Atomic Power Station Unit 3 & 4

KARCHAM WANGTOO Karcham Wangtoo H.E. Project
KORBA WEST POWER Korba West Power Company Limited
KOTESHWAR Koteshwar Hydro Power project

KREDL\_PVGD Karnataka Renewable Energy Development Ltd, Pavagada

KSK MAHANADI KSK Mahanadi Power Ltd

KSMPL\_SLR
Kilaj Solar (Maharashtra) Private Limited
KURICHU HEP
Kurichhu Hydro-electric Power Station, Bhutan
LANKO\_AMK
LancoAmarkantak Power Private Limited
LANKO BUDHIL
LANKOKONDAPALLY
Lanco Kondapally Power Private Limited

LOKTAK Loktak Power Project

MAHINDRA\_RUMS

Mahindra Rewa Ultra Mega Solar Project

MAHOBA\_SLR Mahoba Solar Power Project MALANA Malana Hydroelectric Plant

MANGDECHU HEP Mangdechhu Hydroelectric Project, Mangdechhu River, Bhutan

Maruti Coal Maruti Clean Coal and Power Limited

MB POWER MB Power Ltd

MEENAKSHI Meenakshi Energy Private Limited

MP Madhya Pradesh

MRPL Mahindra Renewables Private Limited

MTPS II Muzaffarpur Thermal Power Station – Stage II
MYTRAH\_TCN Mytrah Energy (India) Private Limited, Tuticorin

MU Million Units

NAPP Narora Atomic Power Plant NCR ALLAHABAD North Central Railway, Allahabad

NEEPCO North Eastern Electric Power Corporation Limited

NEP Nepal

NFL National Fertilisers Limited

NHPC STATIONS National Hydro Electric Power Corporation Ltd. Stations

NJPC Nathpa Jhakri Hydroelectric Power Station
NLC Neyveli Lignite Corporation Limited
NLDC National Load Dispatch Centre

NPGC Nabinagar Power Generating Company (Pvt.) Limited
NSPCL NTPC - SAIL Power Company Private Limited
NTECLVallur NTPC Tamil Nadu Energy Company Limited Vallur

NTPC\_ANTP NTPC Anantapur

NTPC STATIONS National Thermal Power Corporation Ltd. Stations

NTPL NLC Tamil Nadu Power Limited NVVN NTPC Vidyut Vyapar Nigam Limited

OCF Order Carry Forward

ONGC Platana ONGC Tripura Power Company
OPGC Odisha Power Generation Corporation
ORANGE TCN Orange Renewable Power Pvt. Ltd, Tuticorin

OSTRO Ostro Energy Private Limited

OTC Over The Counter

PARAM\_PVGD Parampujya Solar Energy Private Ltd

PARE HEP Pare hydroelectric project, Arunachal Pradesh

PX Power Exchange

PXIL Power Exchange India Limited

RAIL Indian Railways

RAMPUR HEP Rampur Hydro Electric Power Project RANGIT HEP Rangit Hydroelectric power project

RANGANADI HEP Ranganadi Hydro Electric Power Project, Arunachal Pradesh

RAP-B Rajasthan Atomic Power Plant-B
RAP-C Rajasthan Atomic Power Plant-C
REC Renewable Energy Certificate
REGL Raigarh Energy Generation Limited

RENEW\_BHACHAU ReNew Power Limited, Bhachau RENEW\_BHUJ ReNew Power Limited, Bhuj

RENEW PVGD ReNew Wind Energy (TN2) Private Limited

RENEW\_SLR\_BKN Renew Solar Bikaner

RENEW\_SR\_SLR Renew Surya Ravi Private Limited (Solar)

RENEWJH\_SLR Renew Solar Energy (Jharkhand Three) Private Limited

RENEWURJA\_SLR ReNew Solar Urja Private Limited

RGPPL\_IR Ratnagiri Gas and Power Private Ltd., supply to Indian Railways

RGPPL\_OTHER Ratnagiri Gas and Power Private Limited

RLDC Regional Load Dispatch Centre

RONGNICHU HEP Rongnichu Hydro Electric Power Project

RPREL Raipur Energen Limited

RSTPS\_FSPP NTPC Ramagundam STPS- Floating Solar PV Project

RTC Round The Clock
RTM Real Time Market

Sasan Ultra Mega Power Project

SB SLR Soft Bank Solar

SB6\_POKARAN SB Energy Six Private Limited, Pokaran

SBG CLEANTECH SLR SBG Cleantech Ltd

SBG\_NPK SB Energy Solar Private Limited,NP Kunta SBG\_PVGD SB Energy Solar Private Limited,Pavagada SBSR\_SLR SBSR Power Cleantech Eleven Private Limited

SEMBCORP Sembcorp Gayatri Power Ltd SIMHAPURI Simhapuri Energy Private Limited

SKS Power Generation Chhattisgarh Limited

SESPL Srijan Energy Systems Pvt. Ltd.

SINGOLI BHATWARI HEP Singoli-Bhatwari Hydroelectric Project, Uttarakhand

SKRPL Sitac Kabini Renewables Pvt. Ltd.

SPRNG\_NPKUNTA Sprng Energy, NP Kunta

SPRING\_PUGALUR Spring Solar Power Private Limited, Pugalur

TALA HEP Tala Hydroelectric Project, Bhutan
TASHIDENG HEP Tashiding Hydro Electric Project, Sikkim

TATA\_ANTP TATA Power Anantapur

TATA PVGD Tata Power Renewable Energy Ltd

TATA\_SLR Tata Solar

TEESTA STG3 Teesta Stage 3 Hydro Power Project
TEHRI Tehri Hydro Electric Power Project

TAM Term Ahead Market

THAR1\_SLR Thar Surya Ravi One Pvt Ltd

THERMAL POWERTECH
TPREL\_RADHANESDA
VINDHYACHAL HVDC
Thermal Powertech Corporation India Limited
Tata Power Renewable Energy Limited, Radhanesda
Vindhyachal High Voltage Direct Current Link

YARROW PVGD Yarrow Infra Structure Private Ltd

#### 1. Introduction

1.1. A well-functioning electricity market requires an effective market monitoring process. The monthly report on short-term transactions of electricity, published by CERC since 2008 as part of its market monitoring process, provides a snapshot of key aspects of short-term transactions of electricity in India. Here, "short-term transactions of electricity" refers to the contracts of less than one year period for electricity transacted (inter-State) - through Trading Licensees, directly by the Distribution Licensees and on Power Exchanges (Indian Energy Exchange Ltd (IEX), Power Exchange India Ltd (PXIL) and Hindustan Power Exchange Ltd (HPX)). "DSM Volume" includes the volume recorded under Deviation Settlement Mechanism. The main objectives of the report are: (i) to analyse the volume and price of the short-term transactions of electricity; (ii) to assess the competition among the market players; (iii) to analyse the effect of congestion on the volume of electricity transacted through power exchanges; (iv) to provide information on volume and price of Renewable Energy Certificates (RECs) transacted through power exchanges; and (v) to disseminate all other relevant market information. The analysis of short-term transactions of electricity and DSM volume during the month of **June 2023** is presented in the following sections.

#### 2. Volume of Short-term Transactions of Electricity and DSM

- 2.1. During June 2023, total electricity generation, excluding generation from renewable and captive power plants in India, was 127173.42 MU (Table-1). Of the total electricity generation, 15.57% was transacted through short-term and DSM, comprising of 8.26% through bilateral (through traders and term-ahead contracts on power exchanges, and directly between distribution companies), followed by 5.48% through power exchanges {Day Ahead Market (DAM) (including G-DAM) and Real Time Market (RTM)} and 1.84% through DSM (Table-1 & Figure-1).
- 2.2. Of the total short-term transactions and DSM volume (19801.32 MU), 53.02% was transacted through bilateral (36.45% through traders and term-ahead contracts on power exchanges, and 16.57% directly between distribution companies), followed by 35.18% through power exchanges {DAM (including G-DAM & HP-DAM) and RTM} and 11.80% through DSM (Table-1 & Figure-2). The daily volume of short-term transactions is shown in Table-27. Figure-4 shows the daily volume trend for short-term transactions and DSM volume.

- 2.3. Of the total volume of electricity transacted through power exchanges, 43.76% of the volume was transacted in DAM (including G-DAM & HP-DAM), followed by 28.96% in Term Ahead Market (TAM) (including G-TAM) and 27.28% in RTM (Figure-3).
- 2.4. The share of electricity traded by each trading licensee is given in Table-2 & Figure-5. The volume of electricity transacted by the trading licensees includes bilateral transactions and transactions undertaken through power exchanges. There were 50 trading licensees as of June 2023. Of which, 30 trading licensees were engaged in short-term trading. The top 5 trading licensees, namely PTC India Ltd., Tata Power Trading Company (P) Ltd., NTPC Vidyut Vyapar Nigam Ltd., Adani Enterprises Ltd. and Manikaran Power Ltd., had a share of 77.65% in the total volume of electricity traded by all the licensees.
- 2.5. Herfindahl-Hirschman Index (HHI), a commonly accepted index to calculate market concentration, has been used to measure competition among trading licensees. An increase in the HHI generally indicates a decrease in competition and an increase in market concentration, and vice versa. The HHI below 0.15 indicates non-concentration, HHI between 0.15 and 0.25 indicates moderate concentration, and HHI above 0.25 indicates high concentration. The HHI has been computed based on the volume of electricity traded (inter-State & intra-State) by inter-State trading licensees, and it was 0.1732 for the month of June 2023, which indicates a moderate concentration of market power (Table-2).
- 2.6. The volume of electricity transacted in the DAM of IEX and PXIL was 4123.34 MU and 0.03 MU respectively. No electricity was transacted through DAM of HPX. The volume of total buy bids and sell bids was 7297.73 MU and 7861.64 MU, respectively, in IEX, while the same was 4.32 MU and 61.68 MU, respectively, in PXIL. No bids were received in HPX.
- 2.7. Of the total volume of electricity transacted in the DAM of IEX, the volume purchased by the neighbouring countries of India was 68.41 MU, and the volume was sold by the neighbouring countries of India was 118.36 MU under the Cross Border Trade of electricity through power exchange (Table-34). No Cross Border transaction of electricity was undertaken through PXIL and HPX.

- 2.8. The volume of electricity transacted in the G-DAM of IEX was 167.36 MU, while no electricity was transacted in the G-DAM of PXIL and HPX. The volume of total buy bids and sell bids was 806.94 MU and 361.37 MU, respectively, in IEX, while no bids were received in PXIL and HPX.
- 2.9. The volume of electricity transacted in the HP-DAM of IEX was 0.53 MU. The volume of total buy bids and sell bids was 1.79 MU and 211.37 MU, respectively, in IEX.
- 2.10. The volume of electricity transacted in the RTM of IEX was 2675.25 MU, while no electricity was transacted in the RTM of PXIL and HPX. The volume of total buy bids and sell bids was 4200.50 and 4244.64 MU, respectively in IEX. No bids were received in PXIL and HPX. The variation in the volume of buy bids and sell bids placed through power exchanges shows variation in the demand and supply position.
- 2.11. The volume of electricity transacted in the TAM of IEX, PXIL and HPX was 1117.62 MU, 761.66 MU and 758.89 MU, respectively (Table-9, Table-10 & Table-11). The volume of electricity transacted in the Green Term Ahead Market (G-TAM) of IEX, PXIL and HPX was 105.98 MU, 43.12 MU and 52.08 MU, respectively (Table-12, Table-13 & Table-14).

#### 3. Price of Short-term Transactions of Electricity and DSM charges

- 3.1. *Price of electricity transacted through Traders*: The minimum, maximum and weighted average sale prices for the electricity transacted through traders were ₹2.70/kWh, ₹12.00/kWh and ₹8.04/kWh, respectively (Table-3). The weighted average sale prices were also computed for the electricity transacted during Round the Clock (RTC), Peak and Off-peak periods separately, and the sale prices were ₹7.80/kWh, ₹8.78/kWh and ₹8.82/kWh, respectively (Table-4).
- 3.2. *Price of electricity transacted through Power Exchanges*: The minimum, maximum and weighted average prices for the electricity transacted in the DAM of IEX were ₹1.33/kWh, ₹10.00/kWh and ₹5.16/kWh, respectively, while the same were ₹10.00/kWh, ₹10.00/kWh and ₹10.00/kWh, respectively in DAM of PXIL (Table-5). The minimum, maximum and weighted average prices for the electricity transacted in the G-DAM of IEX were ₹1.84/kWh, ₹10.00/kWh and ₹4.95/kWh, respectively (Table-6). The minimum, maximum and weighted

average prices for the electricity transacted in the HP-DAM of IEX were ₹10.00/kWh, ₹20.00/kWh and ₹11.52/kWh, respectively (Table-7). The minimum, maximum and weighted average prices for the electricity transacted in the RTM of IEX were ₹0.98/kWh, ₹10.00/kWh and ₹4.85/kWh, respectively (Table-8). The weighted average price of electricity transacted in the TAM of IEX, PXIL and HPX was ₹6.47/kWh, ₹6.62/kWh and ₹6.71/kWh, respectively (Table-9, Table-10 and Table-11). The weighted average price of electricity transacted in the G-TAM of IEX, PXIL and HPX was ₹5.94/kWh, ₹6.34/kWh and ₹5.19/kWh, respectively (Table-12, Table-13 and Table-14). No electricity was transacted in G-DAM & RTM of PXIL and in DAM, G-DAM and RTM of HPX.

- 3.3. *DSM Charges*: The minimum, maximum and average charge under DSM was ₹1.50/kWh, ₹13.71/kWh and ₹5.71/kWh, respectively (Table-30).
- 3.4. The comparison of weighted average prices of electricity transacted through trading licensees and power exchanges is shown in Figure-6. The daily prices of electricity transacted through various segments at power exchanges and their comparison are shown in Table-28(a), (b) & (c) and Figure-7. The daily volume and charges under DSM are shown in Table-30.

#### 4. Trading Margin

4.1. As per the CERC (Procedure, Terms and Conditions for grant of trading licence and other related matters) Regulations 2020, the trading licensees are allowed to charge a trading margin of not less than 0 paise/kWh and upto 7 paise/kWh. The weighted average trading margin charged by the trading licensees for bilateral transactions during the month was ₹0.021/kWh.

#### **5.** Volume of Short-term Transactions of Electricity (Regional Entity¹-Wise)

5.1. Of the total bilateral transactions, the top 5 regional entities/states sold 25.79% of the volume. These were Himachal Pradesh, Raipur Energen Limited, Karnataka, Madhya Pradesh and Teesta Stage 3 Hydro Power Project (Table-15). The top 5 regional entities/states

<sup>&</sup>lt;sup>1</sup> In case of a State, the entities which are "selling" also include generators connected to State Grid and the entities which are "buying" also include open access consumers.

purchased 53.84% of the volume, and these were Uttar Pradesh, Haryana, Delhi, Maharashtra and Punjab (Table-16).

- 5.2. Of the total DAM transactions at power exchanges, the top 5 regional entities/states sold 31.31% of the volume, and these were Delhi, Chhattisgarh, Rajasthan, Uttar Pradesh, and Himachal Pradesh (Table-17). The top 5 regional entities/states purchased 62.87% of the volume, and these were Maharashtra, West Bengal, Andhra Pradesh, Punjab and Gujarat (Table-18).
- 5.3. Of the total G-DAM transactions at power exchanges, the top 5 regional entities/states sold 49.50% of the volume, and these were Renew Surya Ravi Private Limited (Solar), Jammu & Kashmir, Maharashtra, Adani Wind and Andhra Pradesh (Table-19). The top 5 regional entities/states purchased 70.26% of the volume, and these were Maharashtra, Damodar Valley Corporation, Tamil Nadu, Karnataka and Bharat Aluminum Company Limited (Table-20).
- 5.4. Of the total HP-DAM transactions at power exchanges, only 4 regional entities/states sold 100.00% of the volume, and these were Gujarat, Simhapuri Energy Private Limited, Tamil Nadu and Coastal Energen Private Limited (Table-21). Only 1 regional entities/states purchased 100.00% of the volume, and it was Meghalaya (Table-22).
- 5.5. Of the total RTM transactions at power exchanges, the top 5 regional entities/states sold 42.78% of the volume, and these were Madhya Pradesh, Rajasthan, Bihar, NTPC Stations (Eastern Region) and Delhi (Table-23). The top 5 regional entities/states purchased 53.83% of the volume, and these were Telangana, Maharashtra, West Bengal, Punjab and Andhra Pradesh (Table-24).
- 5.6. The total volume of net short-term transactions of electricity (Regional entity-wise), i.e., the volume of net transactions through bilateral and power exchanges are shown in Table-25 & 29. The top 5 electricity selling regional entities/states of short-term transactions were Himachal Pradesh, Raipur Energen Limited, Madhya Pradesh, Teesta Stage 3 Hydro Power Project and Karnataka. The top 5 electricity purchasing regional entities/states of short-term transactions were Maharashtra, Uttar Pradesh, West Bengal, Punjab and Haryana.

5.7. Of the total under-drawal/ over-injection volume under DSM in June 2023, the top 5 regional entities/states accounted for 27.07% of the volume, and these were Rajasthan, Gujarat, Uttar Pradesh, Madhya Pradesh and Tamil Nadu (Table-31). The top 5 regional entities/states under DSM accounted for 25.88% of the total over-drawal/ under-injection volume, and these were NTPC Stations (Northern Region), Maharashtra, NTPC Stations (Western Region), NTPC Stations (Eastern Region) and Karnataka (Table-32).

## 6. Congestion<sup>2</sup> on Inter-State Transmission Corridor for Day-Ahead Market and Real Time Market on Power Exchanges

- 6.1. Power exchanges use a price discovery mechanism in which the aggregate demand and supply are matched to arrive at an unconstrained market price and volume. This process assumes that there is no congestion in the inter-State transmission system between different regions. However, in reality, the system operator (NLDC), in coordination with RLDCs, limits the flow (due to congestion) in the inter-State transmission system. In such a situation, power exchanges adopt a mechanism called "Market Splitting"<sup>3</sup>.
- 6.2. The volume of electricity that could not be cleared due to congestion & other reasons and could not be transacted through power exchanges is the difference between unconstrained cleared volume and actual cleared volume. During the month of June 2023, congestion was experienced in DAM, HP-DAM & RTM on IEX only.
- 6.3. The volume of electricity that could not be cleared due to congestion in DAM, HP-DAM and RTM of IEX was 0.02%, 0.36% and 0.03% of the unconstrained cleared volume, respectively. In terms of time, congestion occurred was 0.66% in DAM, 0.14% in HP-DAM and 1.60% in RTM of IEX during the month. (Table-26).

<sup>&</sup>lt;sup>2</sup> "Congestion" means a situation where the demand for transmission capacity exceeds the available transfer capability

<sup>&</sup>lt;sup>3</sup> "Market Splitting" is a mechanism adopted by Power Exchanges, where the market is split in the event of transmission congestion, into predetermined (by NLDC) bid areas or zones, which are cleared individually at their respective area prices such that the energy balance in every bid area is reached based upon the demand and supply in individual bid areas and using the available transmission corridor capacity between various bid areas simultaneously. As a result of this market splitting the price of electricity in the importing region, where demand for electricity is more than supply, becomes relatively higher than the price of electricity in the exporting region.

#### 7. Volume and Price of Renewable Energy Certificates (RECs)

- 7.1. The concept of Renewable Energy Certificates (RECs) seeks to address the mismatch between the availability of renewable energy and the requirement of the obligated entities to meet their renewable purchase obligation by purchasing green attributes of renewable energy remotely located in the form of RECs. The REC mechanism is a market-based instrument to promote renewable sources of energy and the development of the electricity market.
- 7.2. One REC is equivalent to 1 MWh electricity injected into the grid from renewable energy sources. The REC is exchanged only in the power exchanges approved by CERC within the band of a floor price and forbearance (ceiling) price as notified by CERC from time to time. The first REC trading was held on power exchanges in May 2011.
- 7.3. The categorisation of RECs has been dispensed with on introduction of the concept of multiplier under the CERC (Terms and Conditions for Renewable Energy Certificates for Renewable Energy Generation) Regulations, 2022, brought into effect from 05.12.2022. Accordingly, the power exchanges deactivated the Solar and Non-Solar REC contract for trading w.e.f. December 2022. A new contract named "REC" has been made available for trading on the power exchanges. Further, RECs can also be exchanged through trading licensees as per the REC Regulations 2022.
- 7.4. The details of REC transactions for the month of June 2023 are shown in Table-33. The market clearing volume of RECs transacted on IEX and PXIL were 533392 and 122038, respectively. The weighted average market clearing price of these RECs was ₹745/MWh in IEX and ₹745/MWh in PXIL. No RECs were transacted on HPX.
- 7.5. The gap between the volume of buy and sell bids of RECs placed through power exchanges shows the variation in demand for the RECs. The ratio of buy bids to sell bids was 0.05 and 0.04 in IEX and PXIL respectively. No buy bids were received at HPX.
- 7.6. The volume of RECs transacted through Trading Licensees in June 2023 was 36532. The weighted average trade price for the RECs transacted through traders was ₹ 837/MWh.

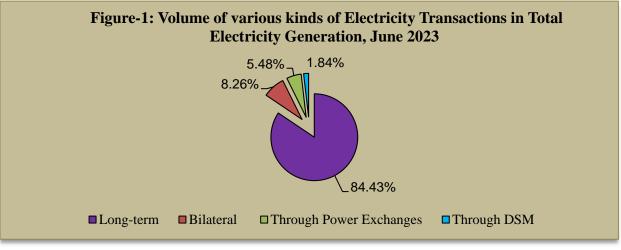
#### 8. Inferences:

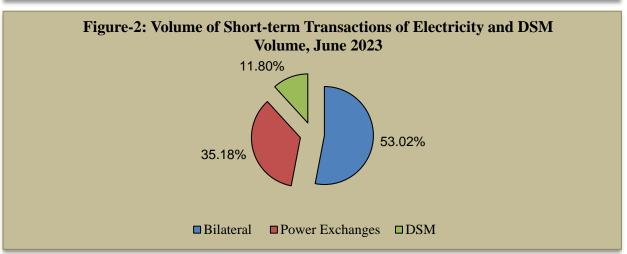
- a) The percentage of short-term transactions of electricity and DSM volume to total electricity generation was 15.57%.
- b) Of the total short-term transactions and DSM volume (19801.32 MU), 53.02% was transacted through bilateral (36.45% through traders and term-ahead contracts on power exchanges, and 16.57% directly between distribution companies), followed by 35.18% through power exchanges {DAM (including G-DAM & HP-DAM) and RTM} and 11.80% through DSM
- c) Of the total volume of electricity transacted through power exchanges, 43.76% of the volume was transacted in DAM (including G-DAM & HP-DAM), followed by 28.96% in Term Ahead Market (TAM) (including G-TAM) and 27.28% in RTM.
- d) The top 5 trading licensees had a share of 77.65% in the total volume traded by all the trading licensees.
- e) The Herfindahl Hirschman Index computed for the volume of electricity traded by trading licensees was 0.1732, indicating a moderate concentration of market power.
- f) The weighted average sale price of electricity transacted through trading licensees was ₹8.04/kWh.
- g) The weighted average price of electricity transacted in DAM of IEX and PXIL was ₹5.16/kWh and ₹10.00/kWh respectively, while no electricity was transacted in DAM of HPX. The weighted average price of electricity transacted in G-DAM of IEX was ₹4.95/kWh, while no electricity was transacted in G-DAM of PXIL and HPX. The weighted average price of electricity transacted in HP-DAM of IEX was ₹11.52/kWh. The weighted average price of electricity transacted in RTM of IEX was ₹4.85/kWh. No electricity was transacted in the RTM of PXIL and HPX.
- h) The weighted average price of electricity transacted in TAM of IEX, PXIL and HPX was ₹6.47/kWh, ₹6.62/kWh and ₹6.71/kWh, respectively. The weighted average price of electricity transacted in G-TAM of IEX, PXIL and HPX was ₹5.94/kWh, ₹6.34/kWh and ₹5.19/kWh, respectively.

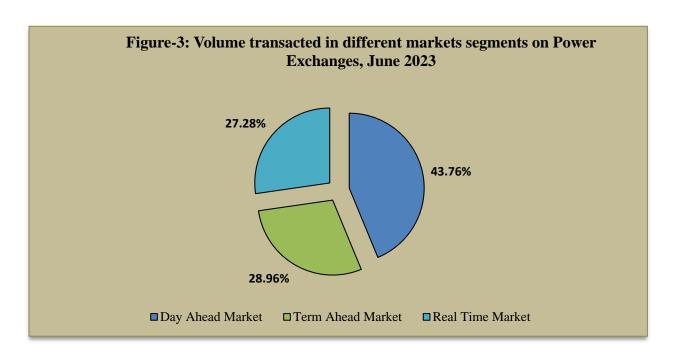
- i) The average charge under DSM was ₹5.71/kWh.
- j) The weighted average trading margin charged by the trading licensees for bilateral transactions was ₹0.021/kWh.
- k) The top 5 electricity selling regional entities/states of short-term transactions were Himachal Pradesh, Raipur Energen Limited, Madhya Pradesh, Teesta Stage 3 Hydro Power Project and Karnataka. The top 5 electricity purchasing regional entities/states of short-term transactions were Maharashtra, Uttar Pradesh, West Bengal, Punjab and Haryana.
- The top 5 under-drawing/over-injecting regional entities/states under DSM were Rajasthan, Gujarat, Uttar Pradesh, Madhya Pradesh and Tamil Nadu. The top 5 overdrawing/under-injecting regional entities/states under DSM were NTPC Stations (Northern Region), Maharashtra, NTPC Stations (Western Region), NTPC Stations (Eastern Region) and Karnataka.
- m) During the month of June 2023, congestion was experienced in DAM, HP-DAM & RTM of IEX. The volume of electricity that could not be cleared due to congestion in DAM, HP-DAM and RTM of IEX was 0.02%, 0.36% and 0.03% of the unconstrained cleared volume, respectively.
- n) The market clearing volume of RECs transacted on IEX and PXIL were 533392 and 122038, respectively. The weighted average market clearing price of these RECs was ₹745/MWh in IEX and ₹745/MWh in PXIL. No RECs were transacted on HPX. The volume of RECs transacted through Trading Licensees in June 2023 was 36532. The weighted average trade price for the RECs transacted through traders was ₹837/MWh.

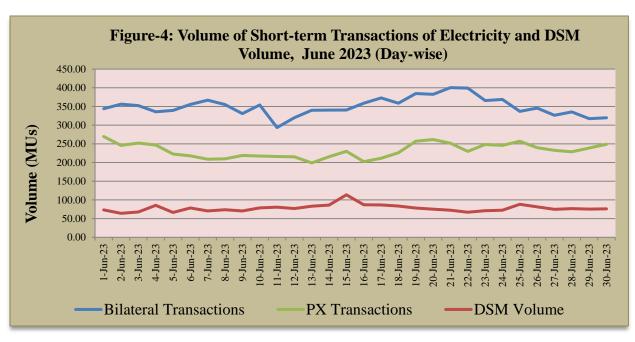
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Table-1	Table-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY AND DSM (ALL INDIA), JUNE 2023				
Sr. No	Transaction	Volume (MU)	% to short-term transactions and DSM Volume	% to Total Generation	
A	Short-term transactions				
1	Bilateral	10498.78	53.02	8.26	
	(i) Through Traders and PXs	7216.74	36.45	5.67	
	(ii) Direct	3282.04	16.57	2.58	
2	Through Power Exchanges	6966.51	35.18	5.48	
	(i) IEX				
	(a) DAM	4123.34	20.82	3.24	
	(b) RTM	2675.25	13.51	2.10	
	(c) GDAM	167.36	0.85	0.13	
	(d)HP-DAM	0.53	0.00	0.00	
	(ii) PXIL				
	(a) DAM	0.03	0.00	0.00	
	(b) RTM	0.00	0.00	0.00	
	(c) GDAM	0.00	0.00	0.00	
	(ii) HPX				
	(a) DAM	0.00	0.00	0.00	
	(b) RTM	0.00	0.00	0.00	
	(c) GDAM	0.00	0.00	0.00	
В	Through DSM	2336.03	11.80	1.84	
	Total Short-term transactions and DSM	19801.32	-	15.57	
	Total Generation	127173.42	-	-	
Source: N	LDC				









Ta	Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, JUNE 2023			
Sr. No	Name of the Trading Licensee	% Share in total Volume traded by Trading Licensees	Herfindahl- Hirschman Index	
1	PTC India Ltd.	33.93	0.1151	
2	Tata Power Trading Company (P) Ltd.	13.91	0.0193	
3	NTPC Vidyut Vyapar Nigam Ltd.	13.66	0.0187	
4	Adani Enterprises Ltd.	9.49	0.0090	
5	Manikaran Power Ltd.	6.67	0.0045	
6	GMR Energy Trading Ltd.	5.69	0.0032	
7	Arunachal Pradesh Power Corporation (P) Ltd	4.31	0.0019	
8	JSW Power Trading Company Ltd	1.87	0.0004	
9	Kreate Energy (I) Pvt. Ltd.	1.73	0.0003	
10	Instinct Infra & Power Ltd.	1.59	0.0003	
11	Gita Power & Infrastructure Private Limited	1.49	0.0002	
12	Statkraft Markets Pvt. Ltd.	1.45	0.0002	
13	Greenko Energies Pvt Ltd	0.99	0.0001	
14	Shree Cement Ltd.	0.73	0.0001	
15	NTPC Ltd.	0.60	0.0000	
16	RPG Power Trading Company Ltd.	0.53	0.0000	
17	Kundan International Pvt. Ltd.	0.27	0.0000	
18	Abja Power Private Limited	0.25	0.0000	
19	Saranyu Power Trading Private Limited	0.16	0.0000	
20	Ambitious Power Trading Company Ltd.	0.15	0.0000	
21	Instant Venture Pvt. Ltd.	0.12	0.0000	
22	NLC India Ltd.	0.11	0.0000	
23	Ideal Energy Solution Pvt. Ltd.	0.09	0.0000	
24	Customized Energy Solutions India (P) Ltd.	0.06	0.0000	
25	VEH Global India Pvt. Ltd.	0.06	0.0000	
26	SJVN Ltd.	0.05	0.0000	
27	Powerfull Energy Trading Pvt. Ltd.	0.02	0.0000	
28	Phillip Commodities India (P) Ltd.	0.01	0.0000	
29	Shell Energy Marketing and Trading India Pvt. Ltd.	0.004	0.0000	
30	Reneurja Power LLP	0.001	0.0000	
	TOTAL	100.00%	0.1732	
	Top 5 trading licensees	77.65%		

Note 1: Volume of electricity transacted by the trading licensees includes bilateral transactions (inter-state & intra-state) and the transactions undertaken through power exchanges.

Note 2: Volume of electricity transacted by Global Energy Ltd. is not included.

Source: Information submitted by trading licensees

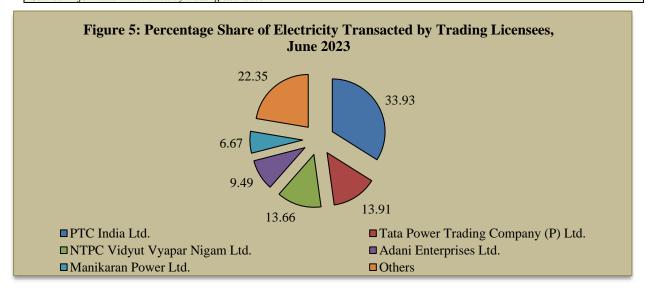


	Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, JUNE 2023			
Sr.No Item Sale Price of Traders (₹/kWh)				
1	Minimum	2.70		
2	Maximum	12.00		
3	Weighted Average	8.04		

Source: Information submitted by trading licensees

Table	Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), JUNE 2023			
Sr.No	Sr.No Period of Trade Sale Price of Traders (₹/kWh)			
1	RTC	7.80		
2	PEAK	8.78		
3	OFF PEAK	8.82		

Source: Information submitted by trading licensees

Tabl	Table-5: PRICE OF ELECTRICITY TRANSACTED IN DAY AHEAD MARKET THROUGH POWER EXCHANGES, JUNE 2023			
Sr.No	Sr.No         ACP         Price in IEX (₹/kWh)         Price in PXIL (₹/kWh)         Price in HPX (₹/kWh)			
1	Minimum	1.33	10.00	-
2	Maximum	10.00	10.00	-
3	Weighted Average	5.16	10.00	-

Source: IEX, PXIL and HPX

Tabl	Table-6: PRICE OF ELECTRICITY TRANSACTED IN GREEN DAY AHEAD MARKET THROUGH POWER EXCHANGES, JUNE 2023			
Sr.No	Sr.No   ACP   Price in IEX (₹/kWh)   Price in PXIL (₹/kWh)   Price in HPX (₹/kWh)			
1	Minimum	1.84	-	-
2	Maximum	10.00	-	-
3	Weighted Average	4.95	-	-

Source: IEX, PXIL and HPX

Table-7: PR	Table-7: PRICE OF ELECTRICITY TRANSACTED IN HIGH PRICE DAY AHEAD MARKET THROUGH				
	POWER EXCHANGES, JUNE 2023				
Sr.No	Sr.No         ACP         Price in IEX (₹/kWh)         Price in PXIL (₹/kWh)         Price in HPX (₹/kWh)				
1	Minimum	10.00	-	-	
2	Maximum	20.00	-	-	
3	Weighted Average	11.52	-	-	

Source: IEX, PXIL and HPX

Tabl	Table-8: PRICE OF ELECTRICITY TRANSACTED IN REAL TIME MARKET THROUGH POWER EXCHANGES, JUNE 2023			
Sr.No	Sr.No ACP Price in IEX (₹/kWh) Price in PXIL (₹/kWh) Price in HPX (₹/kWh			
1	Minimum	0.98	-	-
2	Maximum	10.00	-	-
3	Weighted Average	4.85	-	-

Source: IEX, PXIL and HPX

Table	Table-9: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, JUNE 2023				
Sr.No	Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)		
1	Intra-Day Contracts	18.98	9.76		
2	Day Ahead Contingency Contracts	776.15	6.28		
3	Daily Contracts	75.26	6.35		
4	Any Day Single Sided Contracts	247.23	6.85		
	Total	1117.62	6.47		

Source: IEX

Table-1	Table-10: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, JUNE 2023				
Sr.No	Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)		
1	Intra-Day Contracts	20.27	9.41		
2	Day Ahead Contingency Contracts	568.59	6.77		
3	Any Day Single Sided Contracts	172.80	5.80		
	Total	761.66	6.62		

Source: PXIL

Table-	Table-11: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF HPX, JUNE 2023				
Sr.No	Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)		
1	Intra-Day Contracts	12.08	9.75		
2	Day Ahead Contingency Contracts	651.57	6.71		
3	Daily Contracts	11.72	6.80		
4	Any Day Single Sided Contracts	83.52	6.22		
	Total	758.89	6.71		

Source: HPX

Table-1	Table-12: VOLUME AND PRICE OF ELECTRICITY IN GREEN TERM AHEAD MARKET OF IEX, JUNE 2023					
Sr. No	Actual Scheduled Volume Weighted Average Price					
1	Day Ahead Contingency Contracts	69.03	5.67			
2	Daily Contracts	5.27	5.91			
3	Monthly Contracts	3.60	6.80			
4	Any Day Single Sided Contracts	28.08	6.50			
	Total	105.98	5.94			

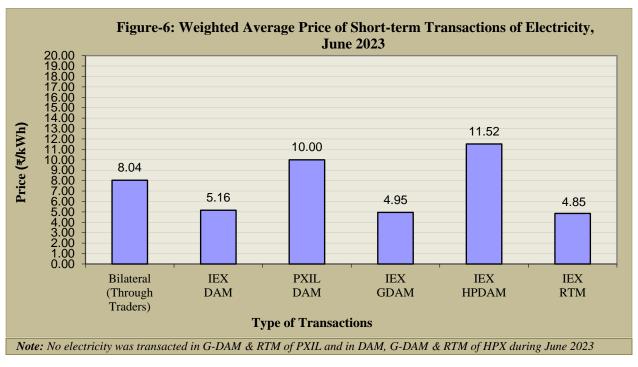
Source: IEX

Table-13	Table-13: VOLUME AND PRICE OF ELECTRICITY IN GREEN TERM AHEAD MARKET OF PXIL, JUNE 2023					
Sr. No	Sr. No Green Term ahead contracts  Actual Scheduled Volume (MU)  Weighted Average Price (₹/kWh					
1	Day Ahead Contingency Contracts	41.65	6.33			
2	Any Day Single Sided Contracts	1.47	6.45			
	Total	43.12	6.34			

Source: PXIL

Table-14	Table-14: VOLUME AND PRICE OF ELECTRICITY IN GREEN TERM AHEAD MARKET OF HPX, JUNE 2023				
Sr. No	o Green Term ahead contracts  Actual Scheduled Volume (MU)  Weighted Average Price (₹/kWh)				
1	Day Ahead Contingency Contracts	52.08	5.19		
	Total	52.08	5.19		

Source: HPX



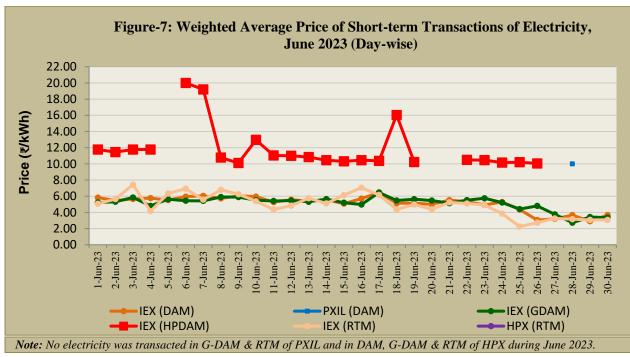


Table-15: VOLUME OF ELECTRICITY	Y SOLD THROUGH BILATERA	L, JUNE 2023
Name of the Entity	Volume of Sale (MUs)	% of Volume
HIMACHAL PRADESH	639.58	6.09
RPREL	590.77	5.63
KARNATAKA	537.42	5.12
MP	482.84	4.60
TEESTA HEP	457.22	4.35
TAMIL NADU	449.00	4.28
JINDAL STAGE-II	440.24	4.19
ESSAR POWER	427.63	4.07
RKM POWER	417.13	3.97
JAYPEE NIGRIE	385.30	3.67
RAJASTHAN	370.75	3.53
JINDAL POWER	342.26	3.26
IL&FS	314.18	2.99
JITPL	308.06	2.93
NTPC STATIONS-SR	266.15	2.54
J&K	256.94	2.45
SIMHAPURI	177.73	1.69
DB POWER	163.26	1.56
MAHARASHTRA	163.15	1.55
AHEJ4L SOLAR	159.95	1.52
DVC	137.47	1.31
ADHUNIK POWER LTD	136.87	1.30
AHEJ4L_WIND	131.44	1.25
SKS POWER	130.20	1.24
SHREE CEMENT	123.26	1.17
NEEPCO STATIONS	120.67	1.17
TELANGANA	117.96	1.12
GUJARAT	116.54	1.11
NTPC STATIONS-NR	107.53	1.02
MEGHALAYA	104.46	1.00
SEMBCORP	102.99	0.98
MB POWER	96.72	0.92
KOLYAT SLR	89.48	0.85
ANDHRA PRADESH	80.79	0.77
CHHATTISGARH	78.23	0.75
KERALA	76.76	0.73
ODISHA	75.95	0.72
JHABUA POWER_MP	75.72	0.72
WEST BENGAL	71.91	0.68
AVAADASN SLR	71.18	0.68
ABC BHDL2	67.58	0.64
ACBIL	59.03	0.56
ACME_HEERGARH	55.52	0.53
THAR1_SLR	54.67	0.52
GMR KAMALANGA	53.96	0.51
DIKCHU HEP	53.13	0.51
COASTGEN	52.96	0.50
AD HYDRO	52.29	0.50
TATA_GREEN	48.85	0.47
KARCHAM WANGTOO	43.37	0.41
UTTARAKHAND	40.53	0.39
DELHI	38.03	0.36
SORANG HEP	36.41	0.35
NLC	33.60	0.32
DAGACHU	31.61	0.32
DAUACIU	31.01	0.30

SINGOLI BHATWARI HEP	31.26	0.30
SAINJ HEP	29.47	0.28
DHARIWAL POWER	29.41	0.28
RENEW_SR_SLR	23.29	0.22
SIKKIM	22.42	0.21
ARUNACHAL PRADESH	21.73	0.21
ADANI_WIND	21.29	0.20
CONTINNUM PT	20.23	0.19
OSTRO Hiriyur	18.78	0.18
HARYANA	18.21	0.17
TEHRI	16.80	0.16
GOA	16.20	0.15
BIHAR	15.16	0.14
SB_SLR	13.33	0.13
MARUTI COAL	12.76	0.12
UTTAR PRADESH	12.55	0.12
TRN ENERGY	12.06	0.11
LANKO_AMK	9.72	0.09
REGL	7.59	0.07
EMCO	5.40	0.05
RENERGY5_WIND	5.14	0.05
ONGC PALATANA	4.03	0.04
TASHIDENG HEP	3.63	0.03
INOX_BHUJ	3.17	0.03
DGEN MEGA POWER	2.59	0.02
NTPC STATIONS-WR	1.76	0.02
JORETHANG	1.66	0.02
PUNJAB	1.30	0.01
MANIPUR	0.60	0.01
Total	10498.78	100.00
Volume Sold by top 5 Regional Entities	2707.82	25.79

Table-16: VOLUME OF ELECTRICITY PURCHASED THROUGH BILATERAL, JUNE 2023			
Name of the Entity	Volume of Purchase (MUs)	% of Volume	
UTTAR PRADESH	1624.60	15.47	
HARYANA	1139.83	10.86	
DELHI	1095.13	10.43	
MAHARASHTRA	930.42	8.86	
PUNJAB	862.10	8.21	
WEST BENGAL	707.54	6.74	
GUJARAT	667.98	6.36	
TAMIL NADU	601.68	5.73	
RAJASTHAN	493.55	4.70	
KERALA	342.28	3.26	
TELANGANA	339.52	3.23	
ANDHRA PRADESH	299.66	2.85	
ODISHA	258.23	2.46	
AMPS Hazira	241.37	2.30	
JHARKHAND	157.32	1.50	
UTTARAKHAND	138.17	1.32	
DD&DNH	138.07	1.32	
MP	137.40	1.31	
CHHATTISGARH	73.50	0.70	
GOA	61.52	0.59	
ASSAM	51.08	0.49	
DVC	30.09	0.29	
PONDICHERRY	22.53	0.21	
HIMACHAL PRADESH	22.29	0.21	
SIKKIM	15.48	0.15	
BALCO	12.05	0.11	
KARNATAKA	11.60	0.11	
BIHAR	11.38	0.11	
J & K	4.45	0.04	
NAGALAND	4.11	0.04	
MEGHALAYA	3.85	0.04	
TOTAL	10498.78	100.00	
Volume Purchased by top 5 Regional Entities	5652.08	53.84	

Table-17: VOLUME OF ELECTRICITY SOLD IN DAY AHEAD MARKET THROUGH POWER EXCHANGES, JUNE 2023			
Name of the Entity	Volume of Sale (MUs)	% of Volume	
DELHI	295.43	7.16	
CHHATTISGARH	289.92	7.03	
RAJASTHAN	274.29	6.65	
UTTAR PRADESH	219.15	5.31	
HIMACHAL PRADESH	212.38	5.15	
PUNJAB	198.84	4.82	
HARYANA	181.57	4.40	
JITPL	157.12	3.81	
TEESTA HEP	141.92	3.44	
MB POWER	129.72	3.15	
BIHAR	119.44	2.90	
NEPAL(NVVN)	118.36	2.87	
RPREL	116.26	2.82	
JAYPEE NIGRIE	106.08	2.57	
SEMBCORP	101.20	2.45	
ESSAR POWER	91.38	2.22	
MP	90.94	2.21	
JINDAL STAGE-II	88.39	2.14	
DCPP	87.00	2.14	
KARNATAKA	73.76	1.79	
ASSAM	60.62	1.47	
DB POWER	59.35	1.44	
	57.09	1.38	
JINDAL POWER			
TAMIL NADU	53.85	1.31	
SKS POWER	50.58	1.23	
AD HYDRO	49.94	1.21	
ACBIL	49.51	1.20	
GUJARAT	45.12	1.09	
MAHARASHTRA	43.49	1.05	
TELANGANA	42.73	1.04	
RKM POWER	35.93	0.87	
ANDHRA PRADESH	35.79	0.87	
ODISHA	31.38	0.76	
CHANDIGARH	30.50	0.74	
KARCHAM WANGTOO	28.36	0.69	
JHABUA POWER_MP	27.52	0.67	
UTTARAKHAND	26.94	0.65	
DVC	25.46	0.62	
COASTGEN	23.42	0.57	
SAINJ HEP	21.69	0.53	
PONDICHERRY	20.51	0.50	
RENEW_SR_SLR	19.94	0.48	
MARUTI COAL	13.46	0.33	
SHREE CEMENT	13.45	0.33	
ARUNACHAL PRADESH	12.05	0.29	
ASEJTL_SLR	10.99	0.27	
JHARKHAND	10.13	0.25	
EMCO	10.04	0.24	
J & K	9.97	0.24	
MEGHALAYA	9.63	0.23	
REGL	7.91	0.19	
DHARIWAL POWER	7.87	0.19	
SIKKIM	7.75	0.19	
GOA	7.46	0.18	
0071	7.70	0.10	

DIKCHU HEP	7.24	0.18
CHUZACHEN HEP	6.49	0.16
MIZORAM	6.37	0.15
TRN ENERGY	5.78	0.14
LANCO BUDHIL	4.96	0.12
OSTRO Hiriyur	4.41	0.11
SINGOLI BHATWARI HEP	4.33	0.10
NTPC STATIONS-SR	4.05	0.10
KSK MAHANADI	3.57	0.09
ADHUNIK POWER LTD	3.41	0.08
SORANG HEP	3.33	0.08
ONGC PALATANA	3.08	0.07
KERALA	3.00	0.07
NAGALAND	2.92	0.07
WEST BENGAL	2.02	0.05
MANIPUR	1.55	0.04
NTPC STATIONS-NER	1.24	0.03
SIMHAPURI	1.09	0.03
GMR KAMALANGA	0.71	0.02
SB_SLR	0.16	0.004
NTPC STATIONS-ER	0.02	0.001
Total	4123.36	100.00
<b>Volume sold by top 5 Regional Entities</b>	1291.17	31.31

Table-18: VOLUME OF ELECTRICITY PURCHASED IN DAY AHEAD MARKET THROUGH POWER EXCHANGES, JUNE 2023			
Name of the Entity	Volume of Purchase (MUs)	% of Volume	
MAHARASHTRA	817.83	19.83	
WEST BENGAL	710.08	17.22	
ANDHRA PRADESH	382.26	9.27	
PUNJAB	354.76	8.60	
GUJARAT	327.28	7.94	
TELANGANA	187.53	4.55	
TAMIL NADU	169.76	4.12	
UTTAR PRADESH	162.75	3.95	
ASSAM	159.62	3.87	
KERALA	128.45	3.12	
DD&DNH	114.24	2.77	
JHARKHAND	98.82	2.40	
HARYANA	50.39	1.22	
UTTARAKHAND	48.52	1.18	
GOA	48.28	1.17	
NEPAL(NVVN)	46.16	1.12	
HIMACHAL PRADESH	43.91	1.06	
J & K	34.93	0.85	
ODISHA	32.35	0.78	
RAJASTHAN	31.58	0.77	
MEGHALAYA	31.17	0.76	
MP	23.46	0.57	
NEP	22.25	0.54	
AMPS Hazira	21.90	0.53	
NCR ALLAHABAD	16.00	0.39	
KARNATAKA	15.16	0.37	
BIHAR	13.60	0.33	
DVC	8.26	0.20	
TRIPURA	7.93	0.19	
CHHATTISGARH	7.37	0.18	
CHANDIGARH	1.98	0.05	
DELHI	1.44	0.03	
ARUNACHAL PRADESH	1.36	0.03	
BALCO	1.12	0.03	
NAGALAND	0.85	0.02	
PONDICHERRY	0.04	0.001	
TOTAL	4123.36	100.00	
Volume purchased by top 5 Regional Entities	2592.20	62.87	

Table-19: VOLUME OF ELECTRICITY SOLD IN GREEN DAY AHEAD MARKET THROUGH POWER EXCHANGES, JUNE 2023			
Name of the Entity	Volume of Sale (MUs)	% of Volume	
RENEW_SR_SLR	19.79	11.82	
J & K	16.64	9.95	
MAHARASHTRA	16.63	9.94	
ADANI_WIND	14.94	8.93	
ANDHRA PRADESH	14.84	8.87	
RENERGY5_WIND	13.45	8.04	
KARNATAKA	12.93	7.73	
SINGOLI BHATWARI HEP	11.15	6.67	
OSTRO Hiriyur	9.34	5.58	
NTPC STATIONS-SR	8.84	5.28	
RAJASTHAN	8.77	5.24	
CONTINNUM PT	7.78	4.65	
TELANGANA	2.80	1.67	
SB_SLR	2.30	1.38	
UTTAR PRADESH	2.24	1.34	
INOX_BHUJ	1.97	1.18	
HIMACHAL PRADESH	1.01	0.60	
WEST BENGAL	0.87	0.52	
MP	0.87	0.52	
SORANG HEP	0.18	0.11	
Total	167.36	100.00	
<b>Volume sold by top 5 Regional Entities</b>	82.85	49.50	

Table-20: VOLUME OF ELECTRICITY PURCHASED IN GREEN DAY AHEAD MARKET THROUGH POWER EXCHANGES, JUNE 2023		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
MAHARASHTRA	42.54	25.42
DVC	33.85	20.23
TAMIL NADU	15.31	9.15
KARNATAKA	15.23	9.10
BALCO	10.64	6.36
PUNJAB	7.33	4.38
DD&DNH	6.85	4.09
KERALA	6.63	3.96
UTTAR PRADESH	5.58	3.33
GUJARAT	4.52	2.70
AMPS Hazira	4.22	2.52
NCR ALLAHABAD	3.75	2.24
WEST BENGAL	2.69	1.61
MP	1.64	0.98
DELHI	1.37	0.82
ODISHA	1.34	0.80
JHARKHAND	1.29	0.77
HARYANA	0.87	0.52
ANDHRA PRADESH	0.78	0.47
TELANGANA	0.49	0.29
MEGHALAYA	0.31	0.19
ASSAM	0.12	0.07
TOTAL	167.36	100.00
Volume purchased by top 5 Regional Entities	117.58	70.26

Table-21: VOLUME OF ELECTRICITY SOLD IN HIGH PRICE DAY AHEAD MARKET THROUGH POWER EXCHANGES, JUNE 2023			
Name of the Entity Volume of Sale (MUs) % of Volume			
GUJARAT	0.37	68.82	
SIMHAPURI	0.07	12.42	
TAMIL NADU	0.05	9.39	
COASTGEN	0.05	9.37	
Total	0.53	100.00	
Volume sold by top 5 Regional Entities	0.53	100.00	

Table-22: VOLUME OF ELECTRICITY PURCHASED IN HIGH PRICE DAY AHEAD MARKET THROUGH POWER EXCHANGES, JUNE 2023		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
MEGHALAYA	0.53	100.00
TOTAL	0.53	100.00
<b>Volume purchased by top 5 Regional Entities</b>	0.53	100.00

Table-23: VOLUME OF ELECTRICITY SOLD IN REAL TIME MARKET THROUGH POWER EXCHANGES, JUNE 2023			
Name of the Entity	Volume of Sale (MUs)	% of Volume	
MP	324.83	12.14	
RAJASTHAN	314.25	11.75	
BIHAR	177.00	6.62	
NTPC STATIONS-ER	167.11	6.25	
DELHI	161.17	6.02	
KAPP 3&4	157.27	5.88	
HIMACHAL PRADESH	127.67	4.77	
J & K	116.66	4.36	
PUNJAB	102.68	3.84	
HARYANA	78.13	2.92	
CHHATTISGARH	69.89	2.61	
WEST BENGAL	61.95	2.32	
ODISHA	60.59	2.26	
KARNATAKA	51.22	1.91	
JHARKHAND	50.28	1.88	
UTTARAKHAND	49.44	1.85	
ASSAM	45.46	1.70	
MAHARASHTRA	43.24	1.62	
ANDHRA PRADESH	42.48	1.59	
UTTAR PRADESH	36.09	1.35	
TEESTA HEP	34.96	1.31	
TELANGANA	28.89	1.08	
TAMIL NADU	25.75	0.96	
SASAN UMPP	22.25	0.83	
NEEPCO STATIONS	20.59	0.77	
JHABUA POWER MP	18.90	0.71	
RKM POWER	18.03	0.67	
SKS POWER	16.64	0.62	
NTPC STATIONS-NR	15.55	0.58	
MANIPUR	15.35	0.57	
TRN ENERGY	12.95	0.48	
GUJARAT	12.58	0.48	
MB POWER	12.02	0.47	
PONDICHERRY	10.15	0.38	
	t		
ESSAR POWER	10.03	0.37	
ONGC PALATANA	9.06	0.34	
SAINJ HEP	9.05	0.34	
RPREL	8.86	0.33	
DVC	8.79	0.33	
TRIPURA	8.11	0.30	
ARUNACHAL PRADESH	6.52	0.24	
NTPC STATIONS-WR	6.45	0.24	
SIKKIM	6.42	0.24	
SEMBCORP	6.15	0.23	
SINGOLI BHATWARI HEP	5.87	0.22	
SORANG HEP	5.11	0.19	
AD HYDRO	5.00	0.19	
JINDAL STAGE-II	4.91	0.18	
ACBIL	4.81	0.18	
KARCHAM WANGTOO	4.70	0.18	
KERALA	4.56	0.17	
NLC	4.26	0.16	
SHREE CEMENT	4.20	0.16	
SIMHAPURI	3.85	0.14	

EMCO	3.66	0.14
DCPP	3.58	0.13
OSTRO Hiriyur	3.45	0.13
DIKCHU HEP	3.08	0.12
NTPC STATIONS-SR	3.06	0.11
NAGALAND	2.63	0.10
TASHIDENG HEP	2.55	0.10
NPGC	2.55	0.10
JINDAL POWER	2.51	0.09
DGEN MEGA POWER	2.28	0.09
JORETHANG	2.12	0.08
MARUTI COAL	2.04	0.08
ADHUNIK POWER LTD	1.99	0.07
BALCO	1.94	0.07
DD&DNH	1.64	0.06
NTPC STATIONS-NER	1.47	0.05
DB POWER	1.03	0.04
CHANDIGARH	0.95	0.04
RENEW_SR_SLR	0.93	0.03
MEGHALAYA	0.69	0.03
CHUZACHEN HEP	0.35	0.01
CGPL	0.35	0.01
LANCO BUDHIL	0.34	0.01
IL&FS	0.32	0.01
JITPL	0.26	0.01
REGL	0.24	0.01
GOA	0.21	0.01
COASTGEN	0.14	0.01
JAYPEE NIGRIE	0.11	0.004
GMR KAMALANGA	0.05	0.002
Total	2675.25	100.00
<b>Volume sold by top 5 Regional Entities</b>	1144.35	42.78

Table-24: VOLUME OF ELECTRICITY PURCHASED IN REAL TIME MARKET THROUGH POWER EXCHANGES, JUNE 2023		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
TELANGANA	443.52	16.58
MAHARASHTRA	380.36	14.22
WEST BENGAL	248.18	9.28
PUNJAB	188.15	7.03
ANDHRA PRADESH	179.88	6.72
UTTAR PRADESH	150.00	5.61
ODISHA	129.17	4.83
KERALA	101.61	3.80
GUJARAT	98.87	3.70
TAMIL NADU	91.23	3.41
RAJASTHAN	75.53	2.82
ASSAM	69.39	2.59
KARNATAKA	57.19	2.14
HARYANA	40.79	1.52
BIHAR	39.43	1.47
JHARKHAND	39.37	1.47
TRIPURA	31.50	1.18
DD&DNH	29.22	1.09
J & K	28.96	1.08
MP	27.07	1.01
DELHI	26.62	1.00
MEGHALAYA	25.80	0.96
DVC		
	25.66	0.96
CHHATTISGARH	23.78	0.89
HIMACHAL PRADESH	22.56	0.84
BALCO	20.08	0.75
AMPS Hazira	19.41	0.73
JINDAL STAGE-II	14.03	0.52
GOA	9.60	0.36
NCR ALLAHABAD	7.36	0.27
UTTARAKHAND	7.34	0.27
NAGALAND	3.73	0.14
MANIPUR	3.17	0.12
DCPP	2.81	0.10
SKS POWER	2.50	0.09
JINDAL POWER	2.36	0.09
SIKKIM	2.17	0.08
SIMHAPURI	1.34	0.05
ARUNACHAL PRADESH	1.24	0.05
SHREE CEMENT	1.24	0.05
NTPC STATIONS-WR	0.81	0.03
CHANDIGARH	0.62	0.02
JHABUA POWER_MP	0.34	0.01
SAINJ HEP	0.32	0.01
RGPPL_IR	0.31	0.01
ACBIL	0.26	0.01
PONDICHERRY	0.25	0.01
ESSAR POWER	0.12	0.004
TOTAL	2675.25	100.00
Volume purchased by top 5 Regional Entities	1440.09	53.83

Tal	Table-25: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY-WISE), JUNE 2023		
S. No.	Name of the Entity	Total volume of net short-term transactions of electricity*	
1	MAHARASHTRA	1904.65	
2	UTTAR PRADESH	1672.89	
3	WEST BENGAL	1531.74	
4	PUNJAB	1109.52	
5	HARYANA	953.97	
6	GUJARAT	924.04	
7	TELANGANA	778.67	
8	ANDHRA PRADESH	688.67	
10	DELHI KERALA	629.93 494.65	
11	TAMIL NADU	349.34	
12	AMPS Hazira	286.90	
13	DD&DNH	286.75	
14	ODISHA	253.18	
15	JHARKHAND	236.38	
16	ASSAM	174.13	
17	GOA	95.53	
18	UTTARAKHAND	77.10	
19	BALCO	41.96	
20	TRIPURA	31.32	
21	NCR ALLAHABAD	27.10	
22	NEP	22.25	
23	NAGALAND DODAL ID	3.13	
24	RGPPL_IR	0.31	
25 26	CGPL NPGC	-0.35 -2.55	
27	NTPC STATIONS-NER	-2.53 -2.71	
28	KSK MAHANADI	-3.57	
29	JORETHANG	-3.78	
30	DGEN MEGA POWER	-4.87	
31	INOX_BHUJ	-5.14	
32	LANCO BUDHIL	-5.30	
33	TASHIDENG HEP	-6.19	
34	MIZORAM	-6.37	
35	CHUZACHEN HEP	-6.84	
36	NTPC STATIONS-WR	-7.40	
37 38	PONDICHERRY LANKO_AMK	-7.85 -9.72	
39	ASEJTL SLR	-9.72 -10.99	
40	MANIPUR	-10.99	
41	REGL	-15.75	
42	SB_SLR	-15.79	
43	ONGC PALATANA	-16.17	
44	TEHRI	-16.80	
45	RENERGY5_WIND	-18.59	
46	SIKKIM	-18.94	
47	EMCO	-19.11	
48	SASAN UMPP	-22.25	
49	CONTINNUM PT	-28.01	
50	MARUTI COAL	-28.26	
51 52	CHANDIGARH TRN ENERGY	-28.84 -30.79	
53	DAGACHU	-30.79 -31.61	
54	OSTRO Hiriyur	-31.01 -35.98	
55	ADANI WIND	-36.23	
56	DHARIWAL POWER	-37.29	
57	ARUNACHAL PRADESH	-37.71	
58	NLC	-37.86	
59	SORANG HEP	-45.03	
60	TATA_GREEN	-48.85	
61	SINGOLI BHATWARI HEP	-52.61	
62	MEGHALAYA	-53.11	

		-	
63	THAR1_SLR	-54.67	
64	GMR KAMALANGA	-54.72	
65	ACME_HEERGARH	-55.52	
66	SAINJ HEP	-59.89	
67	DIKCHU HEP	-63.45	
68	RENEW_SR_SLR	-63.95	
69	ABC_BHDL2	-67.58	
70	AVAADASN_SLR	-71.18	
71	NEPAL(NVVN)	-72.20	
72	DVC	-73.85	
73	KARCHAM WANGTOO	-76.44	
74	COASTGEN	-76.56	
75	DCPP	-87.78	
76	KOLYAT_SLR	-89.48	
77	AD HYDRO	-107.24	
78	ACBIL	-113.09	
79	JHABUA POWER_MP	-121.81	
80	NTPC STATIONS-NR	-121.81	
81	AHEJ4L_WIND	-123.08 -131.44	
	SHREE CEMENT		
82		-139.67	
83	NEEPCO STATIONS	-141.26	
84	ADHUNIK POWER LTD	-142.26	
85	KAPP 3&4	-157.27	
86	AHEJ4L_SOLAR	-159.95	
87	NTPC STATIONS-ER	-167.13	
88	SIMHAPURI	-181.39	
89	SKS POWER	-194.93	
90	SEMBCORP	-210.34	
91	DB POWER	-223.65	
92	MB POWER	-238.46	
93	BIHAR	-247.19	
94	NTPC STATIONS-SR	-282.09	
95	IL&FS	-314.50	
96	J & K	-331.88	
97	CHHATTISGARH	-333.39	
98	RAJASTHAN	-367.39	
99	JINDAL POWER	-399.50	
100	JITPL	-465.44	
101	RKM POWER	-471.09	
102	JAYPEE NIGRIE	-491.48	
103	JINDAL STAGE-II	-519.52	
104	ESSAR POWER	-528.92	
105	KARNATAKA	-576.15	
106	TEESTA HEP	-634.09	
107	MP	-709.90	
107	RPREL	-715.90	
108	HIMACHAL PRADESH	-713.90	
	* Total volume of net short-term transactions of electricity includes net of transactions of electricity through bilateral and power exchange		

(-) indicates sale and (+) indicates purchase

	Table-2	6: DETAI	LS OF C	CONGES	TION IN	POWER	<b>EXCHA</b>	NGES, JUN			
	<b>Details of Congestion</b>	Day Ahead Market			Gree	en Day A Market		High Price Day Ahead Market		Time Ma	rket
		IEX	PXIL	HPX	IEX	PXIL	HPX	IEX	IEX	PXIL	HPX
1	Unconstrained Cleared Volume (MUs)	4123.98	0.03	0.00	167.36	0.00	0.00	0.54	2675.93	0.00	0.00
2	(MUs)	4123.34	0.03	0.00	167.36	0.00	0.00	0.53	2675.25	0.00	0.00
3	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) *	0.64	0.00	0.00	0.00	0.00	0.00	0.002	0.68	0.00	0.00
4	Volume of electricity that could not be cleared	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Volume of electricity that could not be cleared as % to Unconstrained Cleared Volume	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.36%	0.03%	0.00%	0.00%
6	congestion occurred/ Total number of hours in the month)	0.66%	0.00%	0.00%	0.00%	0.00%	0.00%	0.14%	1.60%	0.00%	0.00%
7	Congestion occurrence (%	time bloc	k wise								
	0.00 - 6.00 hours	63.16%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	13.04%	0.00%	0.00%
	6.00 - 12.00 hours	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	19.57%	0.00%	0.00%
	12.00 - 18.00 hours	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	0.00%	0.00%
	18.00 - 24.00 hours	36.84%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	17.39%	0.00%	0.00%
*	This power would have been sci	heduled had	there bee	n no cong	estion						

Source: IEX, PXIL, HPX & NLDC

Table	Table-27: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA (DAY-WISE) (MUs), JUNE 2023												
D.4.	Bilat	eral	Day Ahead Market#			Green	Day Al [arket#	nead	High Price DAM#	Price   Real Time Mark		rket#	Total Electricity
Date	Through Traders and PXs**	Direct	IEX	PXIL	НРХ	IEX	PXIL	НРХ	IEX	IEX	PXIL	HPX	Generation (MU) *
1-Jun-23	243.87	100.19	156.41	0.00	0.00	6.79	0.00	0.00	0.02	106.41	0.00	0.00	4088.43
2-Jun-23	255.91	100.35	170.59	0.00	0.00	5.45	0.00	0.00	0.03	69.74	0.00	0.00	4173.98
3-Jun-23	252.84	99.55	161.03	0.00	0.00	3.91	0.00	0.00	0.02	87.06	0.00	0.00	4328.38
4-Jun-23	234.27	101.47	155.37	0.00	0.00	7.10	0.00	0.00	0.01	84.56	0.00	0.00	3989.73
5-Jun-23	242.72	96.81	161.75	0.00	0.00	4.75	0.00	0.00	0.00	56.33	0.00	0.00	4238.81
6-Jun-23	250.85	104.71	130.21	0.00	0.00	5.03	0.00	0.00	0.00	82.68	0.00	0.00	4355.88
7-Jun-23	264.71	102.25	133.08	0.00	0.00	5.22	0.00	0.00	0.02	70.44	0.00	0.00	4391.52
8-Jun-23	252.20	102.97	139.28	0.00	0.00	3.79	0.00	0.00	0.03	66.92	0.00	0.00	4437.96
9-Jun-23	226.10	104.90	135.36	0.00	0.00	4.86	0.00	0.00	0.02	78.71	0.00	0.00	4422.69
10-Jun-23	245.14	108.95	126.29	0.00	0.00	5.64	0.00	0.00	0.04	85.49	0.00	0.00	4288.79
11-Jun-23	189.06	104.60	128.04	0.00	0.00	6.62	0.00	0.00	0.01	81.54	0.00	0.00	4126.52
12-Jun-23	211.14	108.81	138.43	0.00	0.00	5.09	0.00	0.00	0.02	71.68	0.00	0.00	4310.99
13-Jun-23	233.81	106.05	123.28	0.00	0.00	3.88	0.00	0.00	0.02	71.77	0.00	0.00	4329.09
14-Jun-23	235.25	105.19	128.00	0.00	0.00	4.84	0.00	0.00	0.03	82.64	0.00	0.00	4245.93
15-Jun-23	238.81	101.78	114.91	0.00	0.00	5.48	0.00	0.00	0.02	109.71	0.00	0.00	4304.13
16-Jun-23	252.12	106.58	117.13	0.00	0.00	5.17	0.00	0.00	0.04	80.04	0.00	0.00	4410.83
17-Jun-23	263.42	109.56	123.60	0.00	0.00	2.72	0.00	0.00	0.05	85.01	0.00	0.00	4424.49
18-Jun-23	252.90	105.87	120.16	0.00	0.00	4.63	0.00	0.00	0.03	101.27	0.00	0.00	4222.77
19-Jun-23	270.76	113.81	138.75	0.00	0.00	5.46	0.00	0.00	0.05	112.78	0.00	0.00	4363.13
20-Jun-23	264.58	117.99	144.08	0.00	0.00	6.82	0.00	0.00	0.00	110.72	0.00	0.00	4408.28
21-Jun-23	270.50	129.90	148.60	0.00	0.00	5.08	0.00	0.00	0.00	97.97	0.00	0.00	4469.87
22-Jun-23	268.99	130.18	142.18	0.00	0.00	3.17	0.00	0.00	0.03	84.51	0.00	0.00	4483.31
23-Jun-23	235.13	130.74	147.81	0.00	0.00	6.34	0.00	0.00	0.02	94.14	0.00	0.00	4481.98
24-Jun-23	244.04	124.83	152.69	0.00	0.00	4.55	0.00	0.00	0.03	88.57	0.00	0.00	4352.20
25-Jun-23	218.91	117.91	143.31	0.00	0.00	6.50	0.00	0.00	0.00	107.32	0.00	0.00	3954.63
26-Jun-23	231.15	114.48	130.68	0.00	0.00	5.92	0.00	0.00	0.00	102.99	0.00	0.00	3912.53
27-Jun-23	217.27	109.19	130.15	0.00	0.00	6.39	0.00	0.00	0.00	96.06	0.00	0.00	4012.92
28-Jun-23	227.36	108.06	127.56	0.03	0.00	11.81	0.00	0.00	0.00	89.32	0.00	0.00	3971.02
29-Jun-23	210.36	107.14	130.55	0.00	0.00	7.55	0.00	0.00	0.00	100.82	0.00	0.00	3884.32
30-Jun-23	212.59	107.21	124.03	0.00	0.00	6.79	0.00	0.00	0.00	118.06	0.00	0.00	3788.31
Total		3282.04	4123.34	0.03	0.00	167.36	0.00	0.00	0.53	2675.25	0.00	0.00	127173.42

Source: NLDC \* As available on CEA Website. Gross Electricity Generation excluding electricity generation from renewables and captive power plants. \*\*The volume of bilateral through PXs represents the volume through term-ahead contracts.

<sup>#</sup> Scheduled volume of all the bid areas.

Table-28(a): PRICE OF DAY AHEAD TRANSACTIONS OF ELECTRICITY (DAY-WISE) (₹/kWh), JUNE 20:								E 2023				
Market Segment	I ligy A head Market of LH X			Day A	Ahead M PXIL	larket of	Day Ahead Market of HPX				Price Da larket of	ay Ahead f IEX
Date	Mini- mum ACP	Maxi- mum ACP	Weighted Average Price*	Mini- mum ACP	Maxi- mum ACP	Weighted Average Price*	Mini- mum ACP	Maxi- mum ACP	Weighted Average Price*	Mini- mum ACP	Maxi- mum ACP	Weighted Average Price*
1-Jun-23	2.89	10.00	5.82	-	-	-	-	-	-	11.77	11.77	11.77
2-Jun-23	2.64	10.00	5.48	-	-	-	-	-	-	10.00	11.77	11.45
3-Jun-23	2.83	10.00	5.65	-	-	-	-	-	-	11.77	11.77	11.77
4-Jun-23	2.70	10.00	5.77	-	-	-	-	-	-	11.77	11.77	11.77
5-Jun-23	3.15	10.00	5.52	-	-	-	-	-	-	-	-	-
6-Jun-23	3.40	10.00	5.95	-	-	-	-	-	-	20.00	20.00	20.00
7-Jun-23	3.29	10.00	6.04	-	-	-	-	-	-	10.00	20.00	19.20
8-Jun-23	3.32	10.00	5.73	-	-	-	-	-	-	10.00	20.00	10.78
9-Jun-23	3.65	10.00	6.05	-	-	-	-	-	-	10.00	11.27	10.10
10-Jun-23	3.55	10.00	5.95	-	-	-	-	-	1	10.00	20.00	12.96
11-Jun-23	2.76	10.00	5.27	-	-	-	-	-	1	10.00	11.27	11.03
12-Jun-23	2.96	10.00	5.57	ı	1	ı	-	1	ı	11.00	11.00	11.00
13-Jun-23	2.00	10.00	5.41	1	-	-	-	-	-	10.00	11.00	10.84
14-Jun-23	2.00	10.00	5.56	I	ı	1	-	1	I	10.00	10.50	10.45
15-Jun-23	2.00	10.00	5.08	1	-	-	-	-	-	10.00	10.50	10.31
16-Jun-23	2.00	10.00	5.71	-	-	-	-	-	-	10.00	10.50	10.45
17-Jun-23	3.00	10.00	6.46	1	-	-	-	-	-	10.00	20.00	10.37
18-Jun-23	1.33	10.00	5.12	1	-	-	-	-	-	10.05	20.00	16.03
19-Jun-23	1.86	10.00	5.14	1	-	-	-	-	-	10.00	10.50	10.22
20-Jun-23	2.11	10.00	5.00	-	-	-	-	-	-	-	-	-
21-Jun-23	2.78	10.00	5.52	-	-	-	-	-	-	-	-	-
22-Jun-23	2.73	10.00	5.34	-	-	-	-	-	-	10.05	10.50	10.49
23-Jun-23	2.10	10.00	4.93	-	-	-	-	-	-	10.00	10.50	10.46
24-Jun-23	2.70	10.00	5.28	-	-	-	-	-	-	10.00	10.50	10.16
25-Jun-23	1.50	10.00	4.36	_	-	-	_	-	-	10.00	10.50	10.20
26-Jun-23	1.50	10.00	3.05	-	-	-	-	-	_	10.05	10.05	10.05
27-Jun-23	1.99	6.50	3.20	_	-		-	-	-	-	_	-
28-Jun-23	1.99	9.16	3.66	10.00	10.00	10.00	_	-	-	_	_	-
29-Jun-23	2.00	5.00	2.90	-	-	-	-	-	_	-	-	-
30-Jun-23	2.00	9.06	3.67	_	-		-	-	-	-	_	-
	1.33#	10.00#		10.00#	10.00#	10.00	-	-	-	10.00#	20.00#	11.52
Source: IFX	DVII and	HDV										

Source: IEX, PXIL and HPX

<sup>\*</sup> Weighted average price computed based on Area Clearing Volume (ACV) and Area Clearing Price (ACP) for each hour of the day. Here, ACV and ACP represent the scheduled volume and weighted average price of all the bid areas of power exchanges.

<sup>#</sup> Maximum/Minimum in the month

Table-28	Table-28(b): PRICE OF GREEN DAY AHEAD TRANSACTIONS OF ELECTRICITY (DAY-WISE) (₹/kWh),  JUNE 2023									
Market Segment	Green Day	Ahead Mar	ket of IEX	Green D	ay Ahead M PXIL	arket of	Green Day Ahead Market of HPX			
Date	Minimum ACP	Maximum ACP	Weighted Average Price*	Minimum ACP	Maximum ACP	Weighted Average Price*	Minimum ACP	Maximum ACP	Weighted Average Price*	
1-Jun-23	3.40	10.00	5.22	ı	-	-	ı	ı	-	
2-Jun-23	3.60	10.00	5.31	ı	-	-	1	-	-	
3-Jun-23	3.75	10.00	5.84	-	-	-	-	-	-	
4-Jun-23	2.20	10.00	4.81	_	-	_	_	-	-	
5-Jun-23	3.70	10.00	5.63	-	-	-	-	-	-	
6-Jun-23	3.50	10.00	5.44	-	-	-	-	-	-	
7-Jun-23	3.75	10.00	5.42	_	_	_	-	-	-	
8-Jun-23	4.10	10.00	5.91	_	_	-	-	_	-	
9-Jun-23	4.00	10.00	5.90	_	_	_	-	-	-	
10-Jun-23	3.50	10.00	5.50	_	-	_	-	_	-	
11-Jun-23	3.10	10.00	5.42	-	-	-	-	-	-	
12-Jun-23	3.55	10.00	5.46	-	-	-	1	-	-	
13-Jun-23	3.50	10.00	5.31	-	-	-	-	-	-	
14-Jun-23	3.50	10.00	5.65	-	-	-	1	-	-	
15-Jun-23	3.51	10.00	5.20	_	-	_	-	_	-	
16-Jun-23	3.00	10.00	4.98	_	-	_	-	_	-	
17-Jun-23	4.10	10.00	6.46	_	-	_	-	_	-	
18-Jun-23	3.00	10.00	5.47	-	-	_	-	_	-	
19-Jun-23	3.16	10.00	5.63	-	-	-	1	-	-	
20-Jun-23	3.30	10.00	5.46	-	-	-	-	-	-	
21-Jun-23	3.30	10.00	5.14	_	_	_	-	-	-	
22-Jun-23	3.60	10.00	5.52	_	_	_	_	_	_	
23-Jun-23	3.30	10.00	5.75	_	_	_	_	_	_	
24-Jun-23	3.30	10.00	5.22	_	_	_	_	_	_	
25-Jun-23	3.00	10.00	4.41	_	_	_	_	_	_	
26-Jun-23	3.00	10.00	4.80	_	_	_	-	-	_	
27-Jun-23	2.87	6.46	3.76	_	_	_	_	_	_	
28-Jun-23	1.84	6.26	2.73	_	_	_	-	-	_	
29-Jun-23	2.50	6.30	3.43	_	_	_	-	-	_	
30-Jun-23	2.00	5.50	3.35	_	_	_	-	-	_	
	1.84#	10.00#	4.95	-	-	-	-	-	-	

Source: IEX, PXIL and HPX

<sup>\*</sup> Weighted average price computed based on Area Clearing Volume (ACV) and Area Clearing Price (ACP) for each hour of the day. Here, ACV and ACP represent the scheduled volume and weighted average price of all the bid areas of power exchanges.

<sup>#</sup> Maximum/Minimum in the month

	Table-28(c): PRICE OF REAL TIME TRANSACTIONS (DAY-WISE) (₹/kWh), JUNE 2023									
Market Segment	Real T	ime Market (	of IEX	Real Ti	ne Market (	of PXIL	Real Time Market of HPX			
Date	Minimum ACP	Maximum ACP	Weighted Average Price*	Minimum ACP	Maximum ACP	Weighted Average Price*	Minimum ACP	Maximum ACP	Weighted Average Price*	
1-Jun-23	1.37	10.00	5.07	-	-	-	-	-	-	
2-Jun-23	2.00	10.00	5.65	-	-	-	-	-	-	
3-Jun-23	3.50	10.00	7.42	-	-	-	-	-	-	
4-Jun-23	1.78	10.00	4.15	-	-	-	-	-	-	
5-Jun-23	2.74	10.00	6.34	-	-	-	-	-	-	
6-Jun-23	3.10	10.00	6.93	-	-	-	-	-	-	
7-Jun-23	2.00	10.00	5.58	-	-	-	-	-	-	
8-Jun-23	3.10	10.00	6.79	-	-	-	-	-	-	
9-Jun-23	2.26	10.00	6.25	-	-	-	-	-	-	
10-Jun-23	1.70	10.00	5.38	-	-	-	-	-	-	
11-Jun-23	1.00	10.00	4.35	-	-	-	-	-	-	
12-Jun-23	1.74	10.00	4.84	-	-	-	-	-	-	
13-Jun-23	2.00	10.00	5.75	-	-	-	-	-	-	
14-Jun-23	1.24	10.00	5.11	-	-	-	-	-	-	
15-Jun-23	1.96	10.00	6.13	-	-	-	-	-	-	
16-Jun-23	1.50	10.00	7.05	-	-	-	-	-	-	
17-Jun-23	1.90	10.00	6.16	-	-	-	-	-	-	
18-Jun-23	1.50	10.00	4.36	-	-	-	-	-	-	
19-Jun-23	1.50	10.00	4.98	-	-	-	-	-	-	
20-Jun-23	1.97	10.00	4.38	-	-	-	-	-	-	
21-Jun-23	1.58	10.00	5.24	-	-	-	-	-	-	
22-Jun-23	2.00	10.00	5.11	-	-	-	-	-	-	
23-Jun-23	2.00	10.00	4.91	-	-	-	-	-	-	
24-Jun-23	1.80	6.80	3.85	-	-	-	-	-	-	
25-Jun-23	0.98	4.51	2.25	-	-	-	_	-	-	
26-Jun-23	1.10	6.45	2.73	-	-	-	-	-	-	
27-Jun-23	1.80	5.75	3.26	-	-	-	-	-	-	
28-Jun-23	1.50	5.50	3.16	-	-	=	=	-	-	
29-Jun-23	1.30	5.00	3.07	-	-	-	=	-	-	
30-Jun-23	1.38	5.50	3.08	-	-	-	-	-	-	
	0.98#	10.00#	4.85	-	-	-	-	-	-	

Source: IEX, PXIL and HPX

\* Weighted average price computed based on Area Clearing Volume (ACV) and Area Clearing Price (ACP) for each hour of the day. Here, ACV and ACP represent the scheduled volume and weighted average price of all the bid areas of power exchanges.

<sup>#</sup> Maximum/Minimum in the month

Table-29: VOLUME OF SI	HORT-TER		CTIONS OF (s), JUNE 20		CITY (REGIO	NAL ENTI	ΓY*-WISE)
		rough Bilate			igh Power Exc		
Name of the Entity		ers + PXs + I			DAM + HPDA		Total Net***
DVDV4.D	Sale	Purchase	Net**	Sale	Purchase	Net**	1100 70
PUNJAB	1.30	862.10	860.80	301.52	550.24		1109.52
HARYANA	18.21	1139.83	1121.62	259.71	92.05	-167.66	953.97
RAJASTHAN	370.75	493.55	122.80 1057.09	597.31	107.12 29.43	-490.19 -427.17	-367.39
DELHI UTTAR PRADESH	38.03 12.55	1095.13 1624.60	1612.05	456.60 257.49	318.32		629.93 1672.89
UTTARAKHAND	40.53	138.17	97.63	76.38	55.85		77.10
HIMACHAL PRADESH	639.58	22.29	-617.29	341.05	66.47	-274.59	-891.88
J & K	256.94	4.45	-252.49	143.27	63.88	-79.39	-331.88
CHANDIGARH	0.00	0.00	0.00	31.44	2.60	-28.84	-28.84
MP	482.84	137.40	-345.43	416.64	52.16		-709.90
MAHARASHTRA	163.15	930.42	767.28	103.36	1240.73	1137.37	1904.65
GUJARAT	116.54	667.98	551.44	58.07	430.66	372.60	924.04
CHHATTISGARH	78.23	73.50	-4.73	359.81	31.16	-328.65	-333.39
GOA	16.20	61.52	45.32	7.67	57.88	50.21	95.53
DD&DNH	0.00	138.07	138.07	1.64	150.32	148.68	286.75
ANDHRA PRADESH	80.79	299.66	218.86	93.11	562.92	469.81	688.67
KARNATAKA	537.42	11.60	-525.82	137.91	87.58	-50.33	-576.15
KERALA	76.76	342.28	265.51	7.56	236.69	229.13	494.65
TAMIL NADU	449.00	601.68	152.68	79.65	276.31	196.66	349.34
PONDICHERRY	0.00	22.53	22.53	30.67	0.29	-30.38	-7.85
TELANGANA	117.96	339.52	221.56	74.42	631.54	557.11	778.67
WEST BENGAL	71.91	707.54	635.63	64.84	960.96		1531.74
ODISHA	75.95	258.23	182.28	91.97	162.86	70.89	253.18
BIHAR	15.16	11.38	-3.78	296.44	53.03	-243.41	-247.19
JHARKHAND	0.00	157.32	157.32	60.41	139.47	79.06	236.38
SIKKIM	22.42	15.48	-6.94	14.17	2.17	-12.00	-18.94
DVC ARUNACHAL PRADESH	137.47 21.73	30.09	-107.38 -21.73	34.25 18.57	67.77 2.59	33.52 -15.97	-73.85 -37.71
ASSAM	0.00	51.08	51.08	106.07	2.59		-37.71 174.13
MANIPUR	0.60	0.00	-0.60	16.90	3.17	-13.73	-14.33
MEGHALAYA	104.46	3.85	-100.61	10.32	57.82	47.50	-53.11
MIZORAM	0.00	0.00	0.00	6.37	0.00	-6.37	-6.37
NAGALAND	0.00	4.11	4.11	5.55	4.57	-0.98	3.13
TRIPURA	0.00	0.00	0.00	8.11	39.43	31.32	31.32
NTPC STATIONS-NR	107.53	0.00	-107.53	15.55	0.00	-15.55	-123.08
NEP	0.00	0.00			22.25		22.25
TEHRI	16.80	0.00	-16.80	0.00	0.00	0.00	-16.80
AD HYDRO	52.29	0.00	-52.29	54.95	0.00	-54.95	-107.24
KARCHAM WANGTOO	43.37	0.00	-43.37	33.06	0.00	-33.06	-76.44
SHREE CEMENT	123.26	0.00	-123.26	17.65	1.24	-16.41	-139.67
LANCO BUDHIL	0.00	0.00	0.00	5.30	0.00	-5.30	-5.30
SORANG HEP	36.41	0.00	-36.41	8.63	0.00	-8.63	-45.03
SAINJ HEP	29.47	0.00	-29.47	30.74	0.32		-59.89
SB_SLR	13.33	0.00	-13.33	2.46	0.00	-2.46	-15.79
ASEJTL_SLR	0.00	0.00	0.00	10.99	0.00	-10.99	-10.99 52.61
SINGOLI BHATWARI HEP	31.26 131.44	0.00	-31.26 -131.44	21.35 0.00	0.00	-21.35 0.00	-52.61 -131.44
AHEJ4L_WIND AHEJ4L_SOLAR	151.44	0.00	-151.44	0.00	0.00	0.00	-151.44
AVAADASN_SLR	71.18	0.00	-139.93	0.00	0.00	0.00	-139.93
NCR ALLAHABAD	0.00	0.00	0.00	0.00	27.10	27.10	27.10
RENEW_SR_SLR	23.29	0.00	-23.29	40.67	0.00	-40.67	-63.95
THAR1_SLR	54.67	0.00	-54.67	0.00	0.00	0.00	-54.67
ACME_HEERGARH	55.52	0.00	-55.52	0.00	0.00	0.00	-55.52
ABC_BHDL2	67.58	0.00	-67.58	0.00	0.00	0.00	-67.58
KOLYAT_SLR	89.48	0.00	-89.48	0.00	0.00	0.00	-89.48
TATA_GREEN	48.85	0.00	-48.85	0.00	0.00	0.00	-48.85
NTPC STATIONS-WR	1.76	0.00	-1.76	6.45	0.81	-5.64	-7.40
JINDAL POWER	342.26	0.00	-342.26	59.60	2.36		-399.50

LANKO_AMK	9.72	0.00	-9.72	0.00	0.00	0.00	-9.72
ACBIL	59.03	0.00	-59.03	54.33	0.26	-54.06	-113.09
BALCO	0.00	12.05	12.05	1.94	31.85	29.91	41.96
CGPL	0.00	0.00	0.00	0.35	0.00	-0.35	-0.35
DCPP	0.00	0.00	0.00	90.58	2.81	-87.78	-87.78
EMCO	5.40	0.00	-5.40	13.71	0.00	-13.71	-19.11
KSK MAHANADI	0.00	0.00	0.00	3.57	0.00	-3.57	-3.57
ESSAR POWER	427.63	0.00	-427.63	101.41	0.12	-101.29	-528.92
JINDAL STAGE-II	440.24	0.00	-440.24	93.30	14.03		-519.52
DB POWER	163.26	0.00	-163.26	60.39	0.00	-60.39	-223.65
DHARIWAL POWER	29.41	0.00	-29.41	7.87	0.00		-37.29
JAYPEE NIGRIE	385.30	0.00	-385.30	106.18	0.00	-106.18	-491.48
DGEN MEGA POWER	2.59	0.00	-2.59	2.28	0.00	-2.28	-4.87
MB POWER	96.72	0.00	-96.72	141.74	0.00		-238.46
MARUTI COAL	12.76	0.00	-12.76	15.50	0.00	-15.50	-28.26
JHABUA POWER_MP	75.72	0.00	-75.72	46.42	0.34		-121.81
SASAN UMPP	0.00	0.00	0.00	22.25	0.00	-22.25	-22.25
TRN ENERGY	12.06	0.00	-12.06	18.74	0.00	-18.74	-30.79
RKM POWER	417.13	0.00	-417.13	53.96	0.00		-471.09
SKS POWER	130.20	0.00	-130.20	67.22	2.50	-64.73	-194.93
KAPP 3&4	0.00	0.00	0.00	157.27	0.00	-157.27	-157.27
INOX BHUJ	3.17	0.00	-3.17	1.97	0.00	-1.97	-5.14
REGL	7.59	0.00	-7.59	8.15	0.00	-8.15	-15.75
RPREL	590.77	0.00	-590.77	125.13	0.00		-715.90
AMPS Hazira	0.00	241.37	241.37	0.00	45.53	45.53	286.90
RGPPL_IR	0.00	0.00	0.00	0.00	0.31	0.31	0.31
ADANI_WIND	21.29	0.00	-21.29	14.94	0.00		-36.23
CONTINNUM PT	20.23	0.00	-20.23	7.78	0.00	-7.78	-28.01
RENERGY5_WIND	5.14	0.00	-5.14	13.45	0.00	-13.45	-18.59
NTPC STATIONS-SR	266.15	0.00	-266.15	15.43	0.00		-282.09
SIMHAPURI	177.73	0.00	-177.73	5.00	1.34		-181.39
COASTGEN	52.96	0.00	-52.96	23.60	0.00	-23.60	-76.56
IL&FS	314.18	0.00	-314.18	0.32	0.00	-0.32	-314.50
NLC	33.60	0.00	-33.60	4.26	0.00	-4.26	-37.86
SEMBCORP	102.99	0.00	-102.99	107.35	0.00		-210.34
OSTRO Hiriyur	18.78	0.00	-18.78	17.20	0.00	-17.20	-35.98
NTPC STATIONS-ER	0.00	0.00	0.00	167.13	0.00	-167.13	-167.13
NPGC	0.00	0.00	0.00	2.55	0.00	-2.55	-2.55
ADHUNIK POWER LTD	136.87	0.00	-136.87	5.40	0.00	-5.40	-142.26
CHUZACHEN HEP	0.00	0.00	0.00	6.84	0.00		-6.84
GMR KAMALANGA	53.96		-53.96				
JITPL	308.06	0.00	-308.06	157.38	0.00		-34.72 -465.44
TEESTA HEP	457.22	0.00	-457.22	176.88	0.00	-137.38	-634.09
DAGACHU	31.61	0.00	-437.22	0.00	0.00	0.00	-31.61
JORETHANG	1.66	0.00	-1.66	2.12	0.00	-2.12	-31.01
NEPAL(NVVN)	0.00	0.00	0.00	118.36	46.16		-72.20
DIKCHU HEP	53.13	0.00	-53.13	10.32	0.00	-10.32	-63.45
TASHIDENG HEP	3.63	0.00	-3.63	2.55	0.00	-2.55	-6.19
NTPC STATIONS-NER	0.00	0.00	0.00	2.33	0.00	-2.55	-0.19 -2.71
NEEPCO STATIONS	120.67	0.00	-120.67	20.59	0.00	-20.59	-2.71
ONGC PALATANA	4.03	0.00	-4.03	12.14	0.00	-20.39	-141.202 -16.17
ONGCIALATANA	4.03	0.00	-4.03	12.14	0.00	-12.14	-10.17

Source: NLDC

<sup>\*</sup> in case of a state, the entities which are "selling" also include generators connected to state grid and the entities which are "buying" also include open access consumers.

\*\*\* (-) indicates sale and (+) indicates purchase,

\*\*\* Total net includes net of transactions through bilateral and power exchanges

All India Grid Charges (₹/kWh)									
Date	Volume (MU)	Minimum	Maximum	Average					
1-Jun-23	73.39	2.00	10.05	6.1					
2-Jun-23	64.14	2.66	10.13	6.1					
3-Jun-23	67.76	2.83	10.07	7.0					
4-Jun-23	85.50	2.70	10.01	5.7					
5-Jun-23	66.53	2.74	10.00	6.4					
6-Jun-23	78.34	3.40	10.64	7.0					
7-Jun-23	70.62	3.29	11.88	6.6					
8-Jun-23	73.83	3.34	10.20	6.7					
9-Jun-23	70.57	3.40	10.04	6.7					
10-Jun-23	78.76	3.40	13.71	6.5					
11-Jun-23	80.54	2.76	10.01	5.3					
12-Jun-23	76.95	2.76	10.13	5.7					
13-Jun-23	83.21	2.50	10.05	6.0					
14-Jun-23	86.21	2.37	10.40	5.9					
15-Jun-23	113.67	2.00	10.04	6.3					
16-Jun-23	86.95	2.00	10.05	7.0					
17-Jun-23	86.61	3.00	10.32	6.8					
18-Jun-23	83.51	1.60	10.46	5.0					
19-Jun-23	78.28	1.86	10.03	5.9					
20-Jun-23	75.16	2.13	10.00	5.′					
21-Jun-23	72.35	2.78	10.00	6.2					
22-Jun-23	67.04	2.73	10.03	5.3					
23-Jun-23	71.09	2.70	10.02	5					
24-Jun-23	72.35	2.70	10.06	5.0					
25-Jun-23	88.23	1.50	10.01	4.3					
26-Jun-23	81.42	1.52	10.00	3.4					
27-Jun-23	74.82	2.00	6.50	3.:					
28-Jun-23	76.66	1.95	9.16	3.8					
29-Jun-23	75.45	2.00	5.31	3.2					
30-Jun-23	76.10	2.00	9.06	3.8					
Total	2336.03	1.50#	13.71#	5.7					

Table-31: VOLUME OF ELECTRI	CITY UNDER DRAWAL (EXPORTED) THROU	UGH DSM, JUNE 2023
Name of the Entity	Volume of Under drawal (MUs)	% of Volume
RAJASTHAN	160.66	6.66
GUJARAT	141.40	5.86
UTTAR PRADESH	128.61	5.33
MP	117.16	4.86
TAMIL NADU	105.19	4.36
PUNJAB	98.03	4.06
NTPC STATIONS-NR	70.96	2.94
MAHARASHTRA	70.69	2.93
HARYANA	69.08	2.86
KARNATAKA	62.67	2.60
ANDHRA PRADESH	60.69	2.52
DELHI	60.34	2.50
NTPC STATIONS-WR	56.99	2.36
CHHATTISGARH	53.03	2.20
TELANGANA	48.16	2.00
NHPC STATIONS	44.04	1.83
ODISHA	43.56	1.81
NTPC STATIONS-SR	37.53	1.56
J & K	32.87	1.36
NTPC STATIONS-ER	32.31	1.34
BIHAR	31.38	1.30
DVC	27.77	1.15
SASAN UMPP	25.12	1.04
KAPP 3&4	22.69	0.94
JHARKHAND	22.61	0.94
AMPS Hazira	21.83	0.90
UTTARAKHAND	21.53	0.89
IGSTPS	16.78	0.70
NEPAL(NVVN)	15.62	0.65
JINDAL STAGE-II	15.43	0.64
NEEPCO STATIONS	14.37	0.60
BBMB	14.33	0.59
TEESTA STG3	14.09	0.58
NLC NLC	13.58	0.56
ASSAM	11.79	0.49
WEST BENGAL	11.70	0.49
HIMACHAL PRADESH	11.41	0.47
TEESTA HEP	10.96	0.45
DD&DNH	10.92	0.45
SBESS	10.85	0.45
PONDICHERRY	10.70	0.44
RKM POWER	10.70	0.43
AGEMPL BHUJ	9.95	0.43
GIWEL_TCN	9.82	0.41
NJPC	9.82	0.41
GOA	9.78	0.41
JSW RENEW 2	9.42	0.39
		0.38
MAITHON POWER LTD	9.16 9.06	0.38
LANKO_AMK		
GIWEL_BHUJ	8.83	0.37
OSTRO Hiriyur	8.69	0.36
JINDAL POWER	8.64	0.36
ORANGE_TCN	8.58	0.36
AZURE43_SLR	8.11	0.34
MEGHALAYA	7.79	0.32
NPGC	7.59	0.31
RAMPUR HEP	7.49	0.31
AVAADASN_SLR	7.45	0.31
GMR KAMALANGA	7.18	0.30
MYTRAH_TCN	7.08	0.29

SKRPL	6.69	0.28
KARCHAM WANGTOO	6.66	0.28
OSTRO	6.59	0.27
MIZORAM	6.46	0.27
ARUNACHAL PRADESH	6.40	0.27
BETAM_TCN	6.15	0.25
ACME_HEERGARH	6.13	0.25
CHANDIGARH	5.94	0.25
JITPL	5.86	0.24
RENEW_BHACHAU	5.56	0.23
TATA_ANTP	5.53	0.23
ESSAR POWER	5.53	0.23
TRIPURA	5.50	0.23
ALFANAR_BHUJ	5.48	0.23
GSECL_Radhanesda	5.46	0.23
INOX_BHUJ	5.40	0.22
RENEW_BHUJ	5.35	0.22
SPRING_PUGALUR	5.28	0.22
CLEAN_SLR	5.15	0.21
BALCO	5.09	0.21
ARINSUM_RUMS	5.07	0.21
ASEJTL_SLR	4.91	0.20
ABC_BHDL2	4.59	0.19
THAR1_SLR	4.57	0.19
RENEWSB	4.54	0.19
AYANA_RP1	4.49	0.19
AVADARJHN_SLR	4.41	0.18
MSUPL_BHDL2	4.29	0.18
AZURE41_SLR	4.27	0.18
NAPP	4.23	0.18
FORTUM2_PVGD	4.17	0.17
MANIPUR	4.16	0.17
DAGACHU	4.10	0.17
AYANA_NPKUNTA	4.06	0.17
KERALA	4.05	0.17
BRBCL,NABINAGAR	3.90	0.16
ACME_RUMS	3.90	0.16
ADANI_WIND	3.88	0.16
ACME SLR		
_	3.86	0.16
SBG_NPK	3.84	0.16
SBSR_SLR	3.81	0.16
MB POWER	3.81	0.16
SESPL	3.76	0.16
RPREL	3.74	0.16
RENEW_SR_SLR	3.72	0.15
ADY1_PVGD	3.68	0.15
RENEW_SLR_BKN	3.59	0.15
TASHIDENG HEP	3.54	0.15
NAGALAND	3.52	0.15
AVIKIRAN	3.34	0.14
NETCL VALLUR	3.34	0.14
RENEWURJA_SLR	3.34	0.14
	3.27	0.14
EDEN_SLR		
CLEANSP_SLR	3.12	0.13
JHABUA POWER_MP	3.12	0.13
JAYPEE NIGRIE	3.10	0.13
MAHINDRA_RUMS	3.09	0.13
NTPC_ANTP	3.05	0.13
SIKKIM	3.03	0.13
JORETHANG	2.95	0.12
SB6_POKARAN	2.77	0.11
DB POWER	2.75	0.11
BANGLADESH	2.67	0.11
DITTODITODIT	2.07	0.11

RENEWSW_SLR	2.64	0.11
NTPL	2.61	0.11
APRAAVA	2.60	0.11
MRPL	2.59	0.11
CHUZACHEN HEP	2.56	0.11
TEHRI	2.56	0.11
RONGNICHU HEP	2.50	0.10
BARC	2.50	0.10
ESPL_RADHANESDA	2.48	0.10
SB_SLR	2.47	0.10
AVAADA1_PVGD	2.43	0.10
RAIL	2.43	0.10
NTPC STATIONS-NER	2.39	0.10
ARERJL_SLR	2.37	0.10
RENEWJH_SLR	2.28	0.09
YARROW_PVGD	2.21	0.09
PARAM_PVGD	2.21	0.09
ADHUNIK POWER LTD	2.14	0.09
CGPL	2.13	0.09
NSPCL	2.10	0.09
RANGANADI HEP	2.07	0.09
KSK MAHANADI	2.07	0.09
AD HYDRO	2.07	0.09
DIKCHU HEP	2.03	0.09
RSTPS_FSPP		
	1.98	0.08
MTPS II	1.92	0.08
TATA_GREEN	1.91	0.08
NEP	1.91	0.08
TRN ENERGY	1.89	0.08
AVAADA2_PVGD	1.86	0.08
SINGOLI BHATWARI HEP	1.85	0.08
SEMBCORP	1.77	0.07
AZURE_SLR	1.75	0.07
NETRA WIND	1.62	0.07
KOTESHWAR	1.58	0.07
SPRNG_NPKUNTA	1.52	0.06
AZURE_MAPLE_SLR	1.52	0.06
DCPP	1.47	0.06
AZURE PVGD	1.47	0.06
SHREE CEMENT	1.42	0.06
SKS POWER	1.38	0.06
ONGC PALATANA	1.37	0.06
FORTUM1 PVGD	1.36	0.06
TPREL_RADHANESDA	1.32	0.05
GIPCL RADHANESDA	1.32	0.05
TATA_SLR	1.31	0.05
	1.31	0.05
ACBIL		
POWERICA	1.26	0.05
KREDL_PVGD	1.24	0.05
THERMAL POWERTECH	1.16	0.05
GRT_JPL	1.16	0.05
RGPPL	1.16	0.05
SORANG HEP	1.09	0.05
EMCO	1.07	0.04
RAP C	1.07	0.04
SAINJ HEP	1.06	0.04
ADANI GREEN	0.96	0.04
ABSP_ANTP	0.95	0.04
RANGIT HEP	0.93	0.04
COASTGEN	0.87	0.04
RENEW_SLR	0.86	0.04
AKSP_ANTP	0.80	0.03
KSMPL_SLR	0.80	0.03
NOMI L'OTK	0.79	0.03

DHARIWAL POWER	0.78	0.03
AZURE34_SLR	0.77	0.03
AHSP_ANTP	0.75	0.03
FRV_NPK	0.75	0.03
AKS_PVGD	0.71	0.03
TATA_PVGD	0.69	0.03
ARS_PVGD	0.68	0.03
RENEW_PVGD	0.64	0.03
AZURE_ANTP	0.61	0.03
FRV_ANTP	0.59	0.02
TP SAURYA	0.58	0.02
DGEN MEGA POWER	0.56	0.02
IL&FS	0.51	0.02
RAP B	0.48	0.02
PARE HEP	0.46	0.02
LANCO BUDHIL	0.41	0.02
SIMHAPURI	0.41	0.02
SBG_PVGD	0.37	0.02
DOYANG HEP	0.28	0.01
HVDC CHAMPA	0.20	0.01
NFF	0.16	0.01
VINDHYACHAL HVDC	0.13	0.01
LOKTAK	0.10	0.004
Railways_ER ISTS	0.09	0.004
HVDC PUS	0.08	0.003
HVDC ALPD	0.07	0.003
HVDC RAIGARH	0.04	0.002
SRSSFPL	0.03	0.001
BHADRAVATHI HVDC	0.01	0.0002
Total	2412.78	100.00
Volume Exported by top 5 Regional Entities	653.02	27.07

Name of the Entity  NTPC STATIONS-NR  MAHARASHTRA  NTPC STATIONS-WR  NTPC STATIONS-ER  KARNATAKA  WEST BENGAL  GUJARAT  NTPC STATIONS-SR	Volume of Over drawal (MUs)  133.33  124.61  123.09  110.87  92.77  83.52  78.95	% of Volume 5.90 5.52 5.45 4.91 4.11
MAHARASHTRA NTPC STATIONS-WR NTPC STATIONS-ER KARNATAKA WEST BENGAL GUJARAT	124.61 123.09 110.87 92.77 83.52	5.52 5.45 4.91
NTPC STATIONS-WR NTPC STATIONS-ER KARNATAKA WEST BENGAL GUJARAT	123.09 110.87 92.77 83.52	5.45 4.91
NTPC STATIONS-ER KARNATAKA WEST BENGAL GUJARAT	110.87 92.77 83.52	4.91
KARNATAKA WEST BENGAL GUJARAT	92.77 83.52	
WEST BENGAL GUJARAT	83.52	
WEST BENGAL GUJARAT	83.52	
GUJARAT		3.70
		3.49
MIT C DIMITOND-DIX	65.63	2.90
ANDHRA PRADESH	63.30	2.80
BIHAR	53.93	2.39
UTTAR PRADESH	52.71	2.33
HARYANA	50.61	2.24
		2.14
RAJASTHAN	48.41	
TELANGANA	42.87	1.90
TAMIL NADU	40.85	1.81
DVC	39.78	1.76
KERALA	38.59	1.71
ODISHA	34.11	1.51
JHARKHAND	34.01	1.51
J & K	26.87	1.19
CGPL	25.17	1.11
UTTARAKHAND	23.25	1.03
ASSAM	22.41	0.99
AGEMPL BHUJ	21.48	0.95
PUNJAB	21.16	0.94
AMPS Hazira	20.30	0.90
HIMACHAL PRADESH	18.36	0.90
INOX BHUJ	17.05	0.75
GIWEL_BHUJ	16.28	0.72
NHPC STATIONS	16.06	0.71
CHHATTISGARH	15.96	0.71
MP	15.28	0.68
BALCO	15.20	0.67
IGSTPS	15.17	0.67
NLC	14.59	0.65
NEP	13.01	0.58
NEPAL(NVVN)	12.66	0.56
GOA	12.41	0.55
SBESS	11.47	0.51
TRIPURA	11.29	0.50
MYTRAH_TCN	10.95	0.48
OSTRO Hiriyur	10.93	0.48
GIWEL_TCN	10.88	0.48
THERMAL POWERTECH	10.79	0.48
ESSAR POWER	10.63	0.48
	10.65	
NETCL VALLUR		0.46
ASEJTL_SLR	9.99	0.44
JSW_RENEW_2	9.83	0.44
SKRPL	9.69	0.43
BETAM_TCN	9.68	0.43
AVAADASN_SLR	9.19	0.41
ORANGE_TCN	9.03	0.40
ALFANAR_BHUJ	9.03	0.40
OSTRO	8.88	0.39
THAR1_SLR	8.86	0.39
JINDAL STAGE-II	8.78	0.39
TEESTA STG3	8.24	0.36
NPGC	8.00	0.35
KAPP 3&4	7.95	0.35
RENEW_BHACHAU	7.86	0.35

TATA_ANTP	7.74	0.34
RENEW_BHUJ	7.59	0.34
BRBCL,NABINAGAR	7.53	0.33
AVADARJHN_SLR	7.52	0.33
DELHI	7.14	0.32
ARUNACHAL PRADESH	6.57	0.29
NTPL	6.57	0.29
SHREE CEMENT	6.46	0.29
ADANI_WIND	6.39	0.28
CHANDIGARH	6.37	0.28
AZURE43_SLR	6.30	0.28
TATA_GREEN	6.28	0.28
AVIKIRAN	6.19	0.27
NTPC STATIONS-NER	6.04	0.27
SEMBCORP	5.22	0.23
RENEW_SR_SLR	5.19	0.23
RAIL	5.09	0.23
DB POWER	5.04	0.22
RKM POWER	4.85	0.21
ADY1_PVGD	4.63	0.21
KARCHAM WANGTOO	4.60	0.20
	4.60	0.20
JHABUA POWER_MP		
SESPL	4.46	0.20
AZURE_MAPLE_SLR	4.45	0.20
ACME_RUMS	4.41	0.19
NJPC	4.39	0.19
MAHINDRA_RUMS	4.34	0.19
MB POWER	4.34	0.19
SBG_NPK	4.32	0.19
MEGHALAYA	4.17	0.18
DAGACHU	4.14	0.18
SIKKIM	4.14	0.18
APRAAVA	4.10	0.18
RENEWJH_SLR	4.08	0.18
RENEWSW_SLR	4.06	0.18
MTPS II	4.00	0.18
Railways_ER ISTS	3.99	0.18
ABC_BHDL2	3.94	0.17
YARROW_PVGD	3.82	0.17
AYANA_RP1	3.72	0.16
EDEN_SLR	3.69	0.16
FORTUM2_PVGD	3.61	0.16
AYANA_NPKUNTA	3.57	0.16
CLEAN_SLR	3.51	0.16
NEEPCO STATIONS	3.48	0.15
DD&DNH	3.46	0.15
PONDICHERRY	3.43	0.15
RENEWURJA_SLR	3.43	0.15
ESPL_RADHANESDA	3.41	0.15
ARINSUM_RUMS	3.36	0.15
BANGLADESH	3.32	0.15
SPRING_PUGALUR	3.31	0.15
CLEANSP_SLR	3.30	0.15
RENEWSB	3.12	0.14
SB6_POKARAN	3.12	0.14
TATA_SLR	3.08	0.14
RENEW_SLR_BKN	3.07	0.14
SBSR_SLR	3.03	0.13
NSPCL	2.98	0.13
AZURE SLR	2.96	0.13
RPREL	2.96	
		0.13
NAPP	2.86	0.13
AZURE41_SLR	2.82	0.12

ACME_SLR	2.78	0.12
MRPL	2.66	0.12
DGEN MEGA POWER	2.61	0.12
ADHUNIK POWER LTD	2.42	0.11
RGPPL	2.42	0.11
NTPC_ANTP	2.41	0.11
ARERJL_SLR	2.41	0.11
ACME_HEERGARH	2.40	0.11
MAITHON POWER LTD	2.39	0.11
AVAADA2 PVGD	2.26	0.10
SIMHAPURI	2.26	0.10
AVAADA1_PVGD	2.25	0.10
_		
PARAM_PVGD	2.23	0.10
MSUPL_BHDL2	2.23	0.10
IL&FS	2.21	0.10
SB_SLR	2.20	0.10
NETRA WIND	2.18	0.10
TPREL_RADHANESDA	2.06	0.09
GRT_JPL	2.03	0.09
RSTPS_FSPP	2.03	0.09
MANIPUR	2.01	0.09
JITPL	2.00	0.09
POWERICA	2.00	0.09
AZURE34_SLR	1.98	0.09
SASAN UMPP		0.08
	1.90	
SPRNG_NPKUNTA	1.78	0.08
DHARIWAL POWER	1.75	0.08
TP SAURYA	1.75	0.08
GIPCL_RADHANESDA	1.74	0.08
ACBIL	1.71	0.08
EMCO	1.63	0.07
DIKCHU HEP	1.60	0.07
FORTUM1_PVGD	1.56	0.07
COASTGEN	1.54	0.07
AZURE_PVGD	1.50	0.07
RAP C	1.37	0.06
RENEW_PVGD	1.32	0.06
RONGNICHU HEP	1.27	0.06
RANGANADI HEP		
	1.26	0.06
CHUZACHEN HEP	1.19	0.05
TEHRI	1.17	0.05
JINDAL POWER	1.09	0.05
FRV_ANTP	1.07	0.05
SORANG HEP	1.04	0.05
SKS POWER	1.02	0.05
GMR KAMALANGA	1.00	0.04
AD HYDRO	1.00	0.04
ARS PVGD	0.93	0.04
TASHIDENG HEP	0.92	0.04
AHSP_ANTP	0.89	0.04
AKS_PVGD	0.89	0.04
TATA PVGD	0.88	0.04
RAP B	0.86	0.04
		0.04
AKSP_ANTP	0.84	
FRV_NPK	0.84	0.04
BBMB	0.81	0.04
KSMPL_SLR	0.76	0.03
ABSP_ANTP	0.75	0.03
ADANI GREEN	0.74	0.03
JORETHANG	0.69	0.03
AZURE_ANTP	0.67	0.03
DCPP	0.66	0.03
KSK MAHANADI	0.65	0.03
	0.00	0.03

SBG_PVGD	0.64	0.03	
TRN ENERGY	0.63	0.03	
RENEW_SLR	0.59	0.03	
ONGC PALATANA	0.55	0.02	
JAYPEE NIGRIE	0.52	0.02	
KREDL_PVGD	0.51	0.02	
RAMPUR HEP	0.51	0.02	
PARE HEP	0.50	0.02	
MIZORAM	0.45	0.02	
SINGOLI BHATWARI HEP	0.45	0.02	
NAGALAND	0.40	0.02	
LANKO KONDAPALLI	0.38	0.02	
GSECL_Radhanesda	0.37	0.02	
SAINJ HEP	0.36	0.02	
MEENAKSHI	0.31	0.01	
LANCO BUDHIL	0.31	0.01	
KOTESHWAR	0.27	0.01	
TEESTA HEP	0.25	0.01	
DOYANG HEP	0.20	0.01	
HVDC RAIGARH	0.19	0.01	
RANGIT HEP	0.19	0.01	
SRSSFPL	0.14	0.01	
BHADRAVATHI HVDC	0.12	0.01	
LOKTAK	0.10	0.004	
NFF	0.08	0.004	
LANKO_AMK	0.08	0.004	
BARC	0.06	0.003	
HVDC ALPD	0.03	0.001	
HVDC CHAMPA	0.02	0.001	
HVDC PUS	0.01	0.0003	
TOTAL	2259.29	100.00	
<b>Volume Imported by top 5 Regional Entities</b>	584.68	25.88	

	Table-33: VOLUME AND PRICE OF RENEWABLE ENERGY CERTIFICATES (RECs) TRANSACTED THROUGH POWER EXCHANGES, JUNE 2023					
Sr.	Dataila of DEC Tuongo etions	Thro	Bilateral			
No	Details of REC Transactions	IEX	PXIL	HPX	through Traders	
1	Volume of Buy Bid	533392	122038	0	-	
2	Volume of Sell Bid	11106687	3485608	181368	-	
3	Ratio of Buy Bid to Sell Bid Volume	0.05	0.04	0.00	-	
4	Traded Volume (MWh)	533392	122038	0	36532	
5	Weighted average Price (₹/MWh)	745.00	745.00	-	837.39	

Source: Power Exchanges & Grid-India REC Report

Note: 1 REC = 1 MWh

Under the CERC REC Regulations 2022, the categorization of RECs has been dispensed with and exchange of RECs through trading licensees has also been allowed

Table-34: VOLUME AND PRICE OF CROSS BORDER TRADE THROUGH DAY AHEAD MARKET AT IEX, JUNE 2023						
Sr.	Neighbouring	Volume (MU)			Weighted Average Price (₹/kWh)	
No.	Country	Sale	Purchase	Net*	Sale	Purchase
1	Nepal	118.36	68.41	-49.96	5.07	4.43
2	Bhutan	0.00	0.00	0.00	1	1
	Total	118.36	68.41	-49.96	•	-

Source: IEX

<sup>\*</sup> Net indicates difference of volume purchased and sold by the respective neighbouring country Note: No Cross Border transactions were recorded in DAM at PXIL and HPX



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