

Monthly Report on Short-term Transactions of Electricity in India

April 2023



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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	Adani Hybrid Energy Jaisalmer Two Limited (Solar)
AHEJ3L_SOLAR	Adani Hybrid Energy Jaisalmer Three Limited (Solar)
AHEJ4L_SOLAR	Adani Hybrid Energy Jaisalmer Four Limited-Hybrid Solar
AHEJ4L_WIND	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 Rewa Ultra Mega 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	Betam Wind Energy Private Limited, Tuticorin
BHADRAVATHI HVDC	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	ChuzachenHydro Electric Power Project
CLEAN_SLR	Clean Solar Power Pvt. Ltd
CLEANSPL_SLR	Clean Solar Jodhpur Pvt Ltd
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 Chhattisgarh Energy Limited
GMR KAMALANGA	GMR Kamalanga Energy Ltd.
G-DAM	Green Day Ahead Market
G-TAM	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 Power Limited
JINDAL STAGE-II	Jindal Power Ltd Stage II
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	LancoBudhil Hydro Power Private Limited
LANKOKONDAPALLY	Lanco Kondapally Power Private Limited
LOKTAK	Loktak Power Project
MAHINDRA_RUMS	Mahindra Rewa Ultra Mega Solar Project
MAHOBASL	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
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_BHUI	ReNew Power Limited, Bhuj
RENEW_PVGD	ReNew Wind Energy (TN2) Private Limited
RENEW_SLR_BKN	Renew Solar Bikaner
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
SasanUMPP	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	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	Thermal Powertech Corporation India Limited
TPREL_RADHANESDA	Tata Power Renewable Energy Limited, Radhanesda
VINDHYACHAL HVDC	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 **April 2023** is presented in the following sections.

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

2.1. During April 2023, total electricity generation, excluding generation from renewable and captive power plants in India, was 123650.15 MU (Table-1). Of the total electricity generation, 14.90 % was transacted through short-term and DSM, comprising of 7.77% through bilateral (through traders and term-ahead contracts on power exchanges, and directly between distribution companies), followed by 5.43% through power exchanges {Day Ahead Market (DAM) (including G-DAM) and Real Time Market (RTM)} and 1.70% through DSM (Table-1 & Figure-1).

2.2. Of the total short-term transactions and DSM volume (18421.48 MU), 52.13% was transacted through bilateral (36.46% through traders and term-ahead contracts on power exchanges, and 15.67% directly between distribution companies), followed by 36.47% through power exchanges {DAM (including G-DAM & HP-DAM) and RTM} and 11.39% 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, 50.04% of the volume was transacted in DAM (including G-DAM & HP-DAM), followed by 26.38% in Term Ahead Market (TAM) (including G-TAM) and 23.58% 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 49 trading licensees as of April 2023. Of which, 31 trading licensees were engaged in short-term trading. The top 5 trading licensees, namely PTC India Ltd., NTPC Vidyut Vyapar Nigam Ltd., Manikaran Power Ltd., Adani Enterprises Ltd. and Tata Power Trading Company (P) Ltd., had a share of 81.63% 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 0.2448 for the month of April 2023, which indicates a moderate concentration of market power (Table-2).

2.6. The volume of electricity transacted in the DAM of IEX was 4408.93 MU. No electricity was transacted through DAM of PXIL and HPX. The volume of total buy bids and sell bids was 8922.54 MU and 8040.03 MU, respectively, in IEX, while the same was 1.00 MU and 27.35 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 230.13 MU, while no volume was sold 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 157.55 MU, while no electricity was transacted in the G-DAM of PXIL and HPX. The volume of total buy bids and

sell bids was 1541.99 MU and 333.07 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 0.19 MU. The volume of total buy bids and sell bids was 2.30 MU and 173.80 MU, respectively, in IEX.

2.10. The volume of electricity transacted in the RTM of IEX and HPX was 2152.45 MU and 0.11 MU, respectively, while no electricity was transacted in the RTM of PXIL. The volume of total buy bids and sell bids was 4342.30 and 3300.56 MU, respectively, in IEX, while the same was 0.11 MU and 0.11 MU, respectively, in HPX. No bids were received in PXIL. 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 841.38 MU, 575.60 MU and 836.67 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 121.22 MU, 16.55 MU and 16.29 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 ₹8.45/kWh, respectively (Table-3). The weighted average sale prices were also computed for the electricity transacted during Round the Clock (RTC) and Off-peak periods separately, and the sale prices were ₹8.44/kWh and ₹8.50/kWh, respectively. No electricity was transacted through traders during Peak periods (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 ₹1.42/kWh, ₹10.00/kWh and ₹5.24/kWh, respectively (Table-5). The minimum, maximum and weighted average prices for the electricity transacted in the G-DAM of IEX were ₹1.89/kWh, ₹10.00/kWh and ₹5.67/kWh, respectively (Table-6). The minimum, maximum and weighted average prices for the electricity transacted in the HP-DAM of IEX were ₹6.80/kWh, ₹20.00/kWh and ₹14.59/kWh, respectively (Table-7). The minimum, maximum and weighted

average prices for the electricity transacted in the RTM of IEX were ₹0.20/kWh, ₹10.00/kWh and ₹4.90/kWh, respectively, while the same were ₹10.00/kWh, ₹10.00/kWh and ₹10.00/kWh, respectively in RTM of HPX (Table-8). The weighted average price of electricity transacted in the TAM of IEX, PXIL and HPX was ₹7.77/kWh, ₹7.22/kWh and ₹7.82/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 ₹6.79/kWh, ₹5.50/kWh and ₹6.78/kWh, respectively (Table-12, Table-13 and Table-14). No electricity was transacted in DAM, G-DAM & RTM of PXIL and in DAM & G-DAM of HPX.

3.3. **DSM Charges:** The minimum, maximum and average charge under DSM was ₹1.61/kWh, ₹11.00/kWh and ₹5.92/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 ₹0.027/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 38.45% of the volume. These were Punjab, Raipur Energen Limited, Essar Power Limited, Jindal Power Ltd Stage II and Sembcorp Gayatri Power Ltd (Table-15). The top 5 regional entities/states purchased 57.79% of the volume, and these were Tamil Nadu, Maharashtra, Andhra Pradesh, Karnataka and Gujarat (Table-16).

¹ 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.

5.2. Of the total DAM transactions at power exchanges, the top 5 regional entities/states sold 48.97% of the volume, and these were Uttar Pradesh, Bihar, Chhattisgarh, Haryana and Delhi (Table-17). The top 5 regional entities/states purchased 61.31% of the volume, and these were Gujarat, Telangana, Punjab, West Bengal and Jammu & Kashmir (Table-18).

5.3. Of the total G-DAM transactions at power exchanges, the top 5 regional entities/states sold 71.24% of the volume, and these were Karnataka, Andhra Pradesh, Telangana, NTPC Stations (Southern Region) and Adani Wind (Table-19). The top 5 regional entities/states purchased 65.59% of the volume, and these were Maharashtra, Damodar Valley Corporation, Arcelor Mittal Nippon Steel Hazira, Delhi and Tamil Nadu (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 Karnataka, Simhapuri Energy Private Limited, Gujarat and IL&FS Tamil Nadu Power Company Limited (Table-21). Only 2 regional entities/states purchased 100.00% of the volume, and these were Meghalaya and Chhattisgarh (Table-22).

5.5. Of the total RTM transactions at power exchanges, the top 5 regional entities/states sold 54.81% of the volume, and these were Madhya Pradesh, Kakrapar Atomic Power Station Unit 3 & 4, Bihar, Rajasthan and Delhi (Table-23). The top 5 regional entities/states purchased 54.45% of the volume, and these were Telangana, Maharashtra, Punjab, West Bengal and Gujarat (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 Punjab, Bihar, Raipur Energen Limited, Essar Power Limited and Jindal Power Ltd Stage II. The top 5 electricity purchasing regional entities/states of short-term transactions were Tamil Nadu, Maharashtra, Andhra Pradesh, Gujarat and Telangana.

5.7. Of the total under-drawal/ over-injection volume under DSM in April 2023, the top 5 regional entities/states accounted for 26.13% of the volume, and these were Rajasthan, Madhya

Pradesh, Tamil Nadu, Uttar Pradesh, and Gujarat (Table-31). The top 5 regional entities/states under DSM accounted for 24.83% of the total over-drawal/ under-injection volume, and these were NTPC Stations (Northern Region), Maharashtra, NTPC Stations (Western Region), West Bengal and NTPC Stations (Eastern Region) (Table-32).

6. Congestion² 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”³.

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 April 2023, congestion was experienced in G-DAM, DAM, HP-DAM & RTM on IEX only.

6.3. The volume of electricity that could not be cleared, due to congestion, in G-DAM, DAM & RTM on IEX was 0.13%, 1.27% and 0.18% of the unconstrained cleared volume, respectively. In terms of time, congestion occurred in G-DAM, DAM & RTM on IEX was 6.81%, 20.80% and 7.78%, respectively, during the month (Table-26).

² “Congestion” means a situation where the demand for transmission capacity exceeds the available transfer capability

³ “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.

6.4. Congestion was also experienced in HP-DAM on IEX. In terms of time, congestion occurred was 0.10% during the month. However, owing to the Order Carry Forward (OCF) option available to the market participants, in some instances where congestion was experienced in DAM, the bids transferred from DAM to HP-DAM underwent changes. This resulted in higher volume getting cleared compared to the unconstrained market clearing volume in HP-DAM (Table-26).

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 April 2023 are shown in Table-33. The market clearing volume of RECs transacted on IEX, PXIL and HPX were 199164, 149025 and 27943, respectively. The weighted average market clearing price of these RECs was ₹1000/MWh in IEX, ₹1000/MWh in PXIL and ₹1000/MWh in 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 0.07, 0.33 and 0.74 in IEX, PXIL and HPX, respectively.

7.6. The volume of RECs transacted through Trading Licensees in April 2023 was 111567. The weighted average trade price for the RECs transacted through traders was ₹ 981/MWh.

8. Inferences:

- a) The percentage of short-term transactions of electricity and DSM volume to total electricity generation was 14.90%.
- b) Of the total short-term transactions and DSM volume (18421.48 MU), 52.13% was transacted through bilateral (36.46% through traders and term-ahead contracts on power exchanges, and 15.67% directly between distribution companies), followed by 36.47% through power exchanges {DAM (including G-DAM & HP-DAM) and RTM} and 11.39% through DSM
- c) Of the total volume of electricity transacted through power exchanges, 50.04% of the volume was transacted in DAM (including G-DAM & HP-DAM), followed by 26.38% in Term Ahead Market (TAM) (including G-TAM) and 23.58% in RTM.
- d) The top 5 trading licensees had a share of 81.63% 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 0.2448, indicating a moderate concentration of market power.
- f) The weighted average sale price of electricity transacted through trading licensees was ₹8.45/kWh.
- g) The weighted average price of electricity transacted in DAM of IEX was ₹5.24/kWh, while no electricity was transacted in DAM of PXIL and HPX. The weighted average price of electricity transacted in G-DAM of IEX was ₹5.67/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 ₹14.59/kWh. The weighted average price of electricity

transacted in RTM of IEX and HPX was ₹4.90/kWh and ₹10.00/kWh, respectively. No electricity was transacted in the RTM of PXIL.

- h) The weighted average price of electricity transacted in the TAM of IEX, PXIL and HPX was ₹7.77/kWh, ₹7.22/kWh and ₹7.82/kWh, respectively. The weighted average price of electricity transacted in the G-TAM of IEX, PXIL and HPX was ₹6.79/kWh, ₹5.50/kWh and ₹6.78/kWh, respectively.
- i) The average charge under DSM was ₹5.92/kWh.
- j) The weighted average trading margin charged by the trading licensees for bilateral transactions was ₹0.027/kWh, which was in line with the Trading Licence Regulations 2020.
- k) The top 5 electricity selling regional entities/states of short-term transactions were Punjab, Bihar, Raipur Energen Limited, Essar Power Limited, and Jindal Power Ltd Stage II. The top 5 electricity purchasing regional entities/states of short-term transactions were Tamil Nadu, Maharashtra, Andhra Pradesh, Gujarat and Telangana.
- l) The top 5 under-drawing/over-injecting regional entities/states under DSM were Rajasthan, Madhya Pradesh, Tamil Nadu, Uttar Pradesh, and Gujarat. The top 5 over-drawing/under-injecting regional entities/states under DSM were NTPC Stations (Northern Region), Maharashtra, NTPC Stations (Western Region), West Bengal and NTPC Stations (Eastern Region).
- m) During the month of April 2023, congestion was experienced in G-DAM, DAM, HP-DAM & RTM of IEX. The volume of electricity that could not be cleared, due to congestion, in G-DAM, DAM & RTM on IEX was 0.13%, 1.27% and 0.18% of the unconstrained cleared volume, respectively.
- n) The market clearing volume of RECs transacted on IEX, PXIL, and HPX were 199164, 149025 and 27943, respectively. The weighted average market clearing price of these RECs was ₹1000/MWh in IEX, ₹1000/MWh in PXIL and ₹1000/MWh in HPX. The volume of RECs transacted through Trading Licensees in April 2023 was 111567. The weighted average trade price for the RECs transacted through traders was ₹ 981/MWh.

Table-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY AND DSM (ALL INDIA), APRIL 2023

Sr. No	Transaction	Volume (MU)	% to short-term transactions and DSM Volume	% to Total Generation
A	Short-term transactions			
1	Bilateral	9603.43	52.13	7.77
	(i) Through Traders and PXs	6716.48	36.46	5.43
	(ii) Direct	2886.95	15.67	2.33
2	Through Power Exchanges	6719.23	36.47	5.43
	(i) IEX			
	(a) DAM	4408.93	23.93	3.57
	(b) RTM	2152.45	11.68	1.74
	(c) GDAM	157.55	0.86	0.13
	(d)HP-DAM	0.19	0.00	0.00
	(ii) PXIL			
	(a) DAM	0.00	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	0.11	0.00	0.00
	(c) GDAM	0.00	0.00	0.00
B	Through DSM	2098.81	11.39	1.70
	Total Short-term transactions and DSM	18421.48	-	14.90
	Total Generation	123650.15	-	-

Source: NLDC

Figure-1: Volume of various kinds of Electricity Transactions in Total Electricity Generation, April 2023

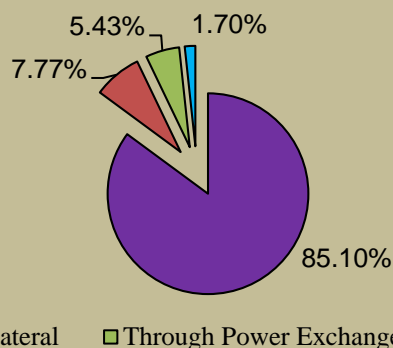


Figure-2: Volume of Short-term Transactions of Electricity and DSM Volume, April 2023

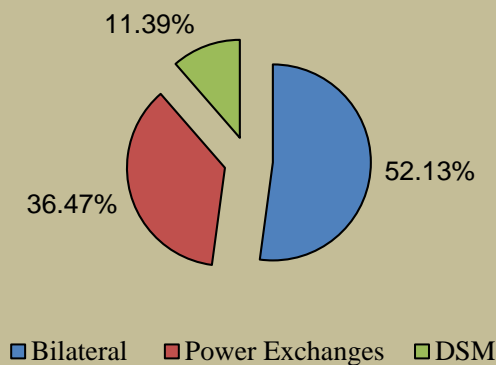


Figure-3: Volume transacted in different markets segments on Power Exchanges, April 2023

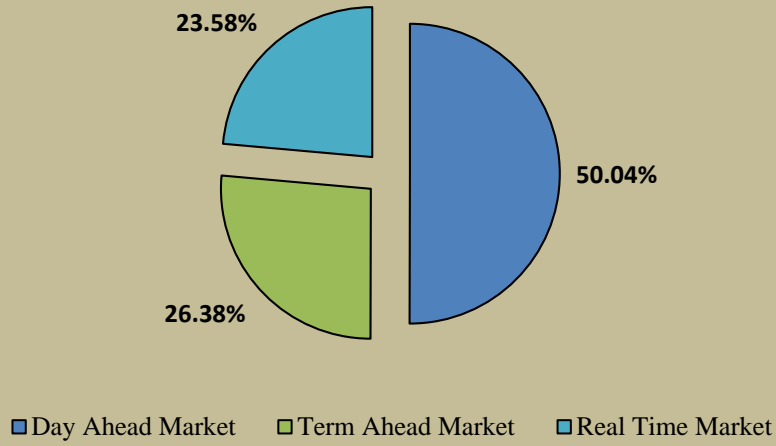


Figure-4: Volume of Short-term Transactions of Electricity and DSM, April 2023 (Day-wise)

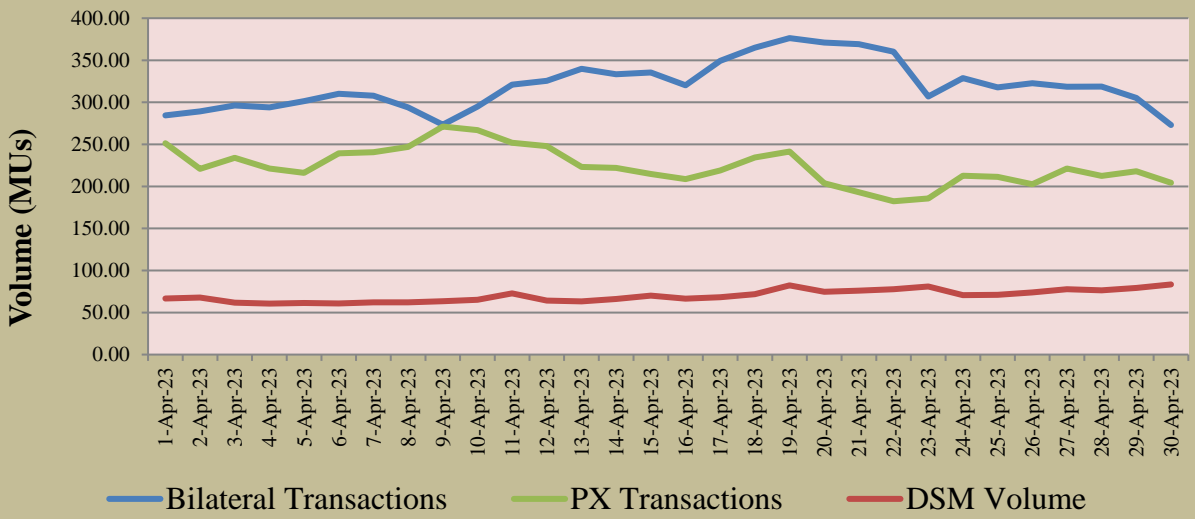


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, APRIL 2023			
Sr. No	Name of the Trading Licensee	% Share in total Volume traded by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd.	44.79	0.2006
2	NTPC Vidyut Vyapar Nigam Ltd.	16.02	0.0257
3	Manikaran Power Ltd.	7.58	0.0057
4	Adani Enterprises Ltd.	7.07	0.0050
5	Tata Power Trading Company (P) Ltd.	6.17	0.0038
6	Arunachal Pradesh Power Corporation (P) Ltd	3.88	0.0015
7	JSW Power Trading Company Ltd	3.32	0.0011
8	GMR Energy Trading Ltd.	2.06	0.0004
9	Refex Industries Ltd.	1.79	0.0003
10	Shree Cement Ltd.	1.77	0.0003
11	Instinct Infra & Power Ltd.	0.90	0.0001
12	NTPC Ltd.	0.67	0.0000
13	Kreate Energy (I) Pvt. Ltd.	0.64	0.0000
14	Abja Power Private Limited	0.62	0.0000
15	RPG Power Trading Company Ltd.	0.53	0.0000
16	Greenko Energies Pvt Ltd	0.52	0.0000
17	Statkraft Markets Pvt. Ltd.	0.51	0.0000
18	Gita Power & Infrastructure Private Limited	0.25	0.0000
19	Ambitious Power Trading Company Ltd.	0.16	0.0000
20	Saranyu Power Trading Private Limited	0.16	0.0000
21	NLC India Ltd.	0.14	0.0000
22	Kundan International Pvt. Ltd.	0.14	0.0000
23	Instant Venture Pvt. Ltd.	0.13	0.0000
24	Ideal Energy Solution Pvt. Ltd.	0.06	0.0000
25	Customized Energy Solutions India (P) Ltd.	0.06	0.0000
26	SJVN Ltd.	0.03	0.0000
27	Powerfull Energy Trading Pvt. Ltd.	0.01	0.0000
28	Phillip Commodities India (P) Ltd.	0.01	0.0000
29	Altilium Energie Private Limited	0.01	0.0000
30	Saini Power Transactor	0.004	0.0000
31	Shell Energy Marketing and Trading India Pvt. Ltd.	0.001	0.0000
TOTAL		100.00%	0.2448
Top 5 trading licensees		81.63%	
<i>Note 1: Volume of electricity transacted by the trading licensees includes bilateral transactions (inter-state & intra-state) and the transactions undertaken through power exchanges.</i>			
<i>Note 2: Volume of electricity transacted by Global Energy Ltd. is not included.</i>			
<i>Source: Information submitted by trading licensees</i>			

Figure 5: Percentage Share of Electricity Transacted by Trading Licensees, April 2023

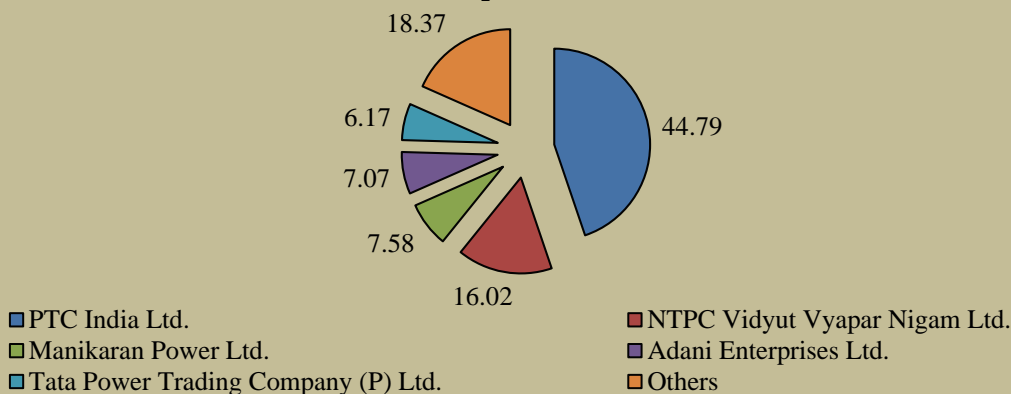


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, APRIL 2023		
Sr.No	Item	Sale Price of Traders (₹/kWh)
1	Minimum	2.70
2	Maximum	12.00
3	Weighted Average	8.45

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), APRIL 2023		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	8.44
2	PEAK	-
3	OFF PEAK	8.50

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED IN DAY AHEAD MARKET THROUGH POWER EXCHANGES, APRIL 2023				
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)	Price in HPX (₹/kWh)
1	Minimum	1.42	-	-
2	Maximum	10.00	-	-
3	Weighted Average	5.24	-	-

Source: IEX, PXIL and HPX

Table-6: PRICE OF ELECTRICITY TRANSACTED IN GREEN DAY AHEAD MARKET THROUGH POWER EXCHANGES, APRIL 2023				
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)	Price in HPX (₹/kWh)
1	Minimum	1.89	-	-
2	Maximum	10.00	-	-
3	Weighted Average	5.67	-	-

Source: IEX, PXIL and HPX

Table-7: PRICE OF ELECTRICITY TRANSACTED IN HIGH PRICE DAY AHEAD MARKET THROUGH POWER EXCHANGES, APRIL 2023				
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)	Price in HPX (₹/kWh)
1	Minimum	6.80	-	-
2	Maximum	20.00	-	-
3	Weighted Average	14.59	-	-

Source: IEX, PXIL and HPX

Table-8: PRICE OF ELECTRICITY TRANSACTED IN REAL TIME MARKET THROUGH POWER EXCHANGES, APRIL 2023				
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)	Price in HPX (₹/kWh)
1	Minimum	0.20	-	10.00
2	Maximum	10.00	-	10.00
3	Weighted Average	4.90	-	10.00

Source: IEX, PXIL and HPX

Table-9: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, APRIL 2023			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	7.80	9.98
2	Day Ahead Contingency Contracts	515.67	6.72
3	Daily Contracts	76.44	8.38
4	Weekly Contracts	73.50	8.57
5	Monthly Contracts	119.04	9.58
6	Any Day Single Sided Contracts	48.93	11.92
	Total	841.38	7.77

Source: IEX

Table-10: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, APRIL 2023			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	8.08	8.19
2	Day Ahead Contingency Contracts	456.23	6.69
3	Daily Contracts	51.60	9.13
4	Weekly Contracts	25.20	8.07
5	Any Day Single Sided Contracts	34.50	10.54
	Total	575.60	7.22

Source: PXIL

Table-11: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF HPX, APRIL 2023			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	6.43	9.67
2	Day Ahead Contingency Contracts	508.41	7.01
3	Daily Contracts	22.61	8.50
4	Weekly Contracts	42.00	8.30
5	Monthly Contracts	192.24	8.30
6	Any Day Single Sided Contracts	64.98	11.98
	Total	836.67	7.82

Source: HPX

Table-12: VOLUME AND PRICE OF ELECTRICITY IN GREEN TERM AHEAD MARKET OF IEX, APRIL 2023			
Sr. No	Green Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	0.05	10.00
2	Day Ahead Contingency Contracts	57.35	6.04
3	Daily Contracts	27.58	7.29
4	Weekly Contracts	12.10	7.50
5	Monthly Contracts	21.60	7.35
6	Any Day Single Sided Contracts	2.55	10.00
	Total	121.22	6.79

Source: IEX

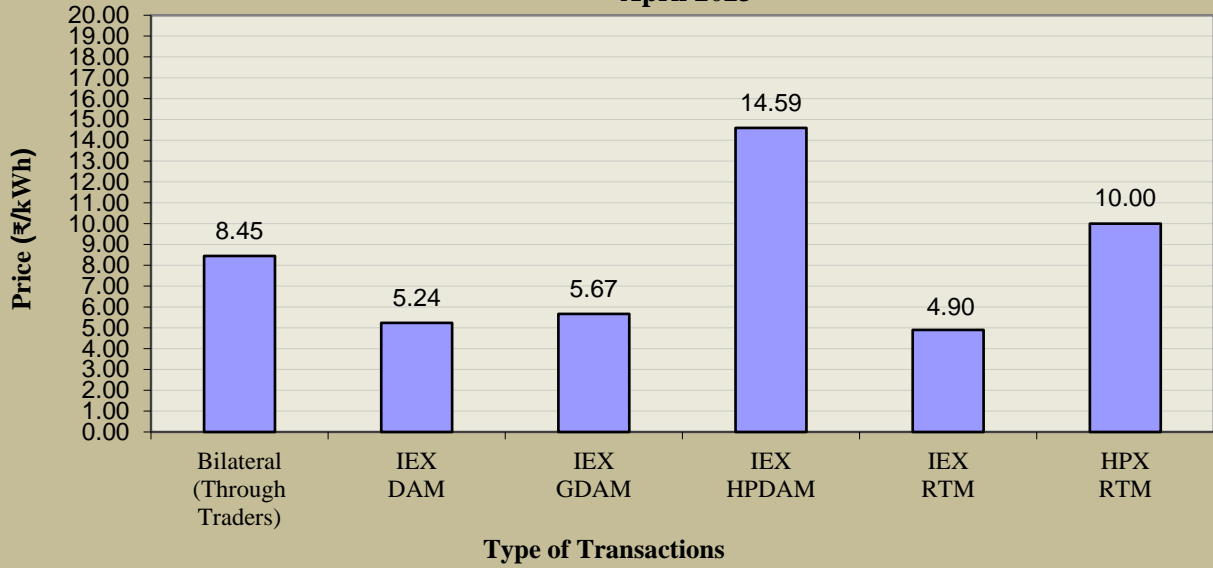
Table-13: VOLUME AND PRICE OF ELECTRICITY IN GREEN TERM AHEAD MARKET OF PXIL, APRIL 2023			
Sr. No	Green Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)
1	Day Ahead Contingency Contracts	16.55	5.50
	Total	16.55	5.50

Source: PXIL

Table-14: VOLUME AND PRICE OF ELECTRICITY IN GREEN TERM AHEAD MARKET OF HPX, APRIL 2023			
Sr. No	Green Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)
1	Day Ahead Contingency Contracts	7.65	5.94
2	Any Day Single Sided Contracts	8.64	7.53
	Total	16.29	6.78

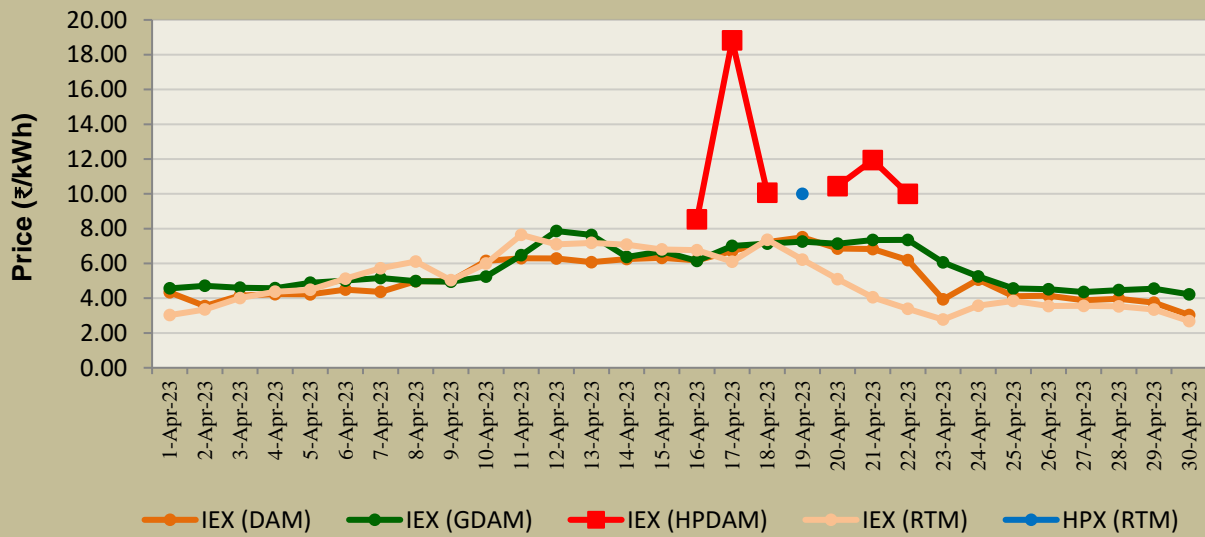
Source: HPX

Figure-6: Weighted Average Price of Short-term Transactions of Electricity, April 2023



Note: No electricity was transacted in DAM, G-DAM & RTM of PXIL and in DAM & G-DAM of HPX during April 2023

Figure-7: Weighted Average Price of Short-term Transactions of Electricity, April 2023 (Day-wise)



Note: No electricity was transacted in DAM, G-DAM & RTM of PXIL and in DAM & G-DAM of HPX during April 2023.

Table-15: VOLUME OF ELECTRICITY SOLD THROUGH BILATERAL, APRIL 2023		
Name of the Entity	Volume of Sale (MUs)	% of Volume
PUNJAB	1530.25	15.93
RPREL	729.82	7.60
ESSAR POWER	601.69	6.27
JINDAL STAGE-II	459.12	4.78
SEMBCORP	372.03	3.87
RKM POWER	370.17	3.85
IL&FS	343.29	3.57
COASTGEN	330.64	3.44
KARNATAKA	313.17	3.26
JAYPEE NIGRIE	308.11	3.21
JINDAL POWER	259.25	2.70
GUJARAT	249.66	2.60
JITPL	241.52	2.51
MAHARASHTRA	210.48	2.19
SHREE CEMENT	185.31	1.93
TEESTA STG3	178.72	1.86
RAJASTHAN	177.35	1.85
AHEJ4L_SOLAR	171.26	1.78
MP	142.62	1.49
UTTAR PRADESH	139.33	1.45
DVC	129.85	1.35
DB POWER	113.92	1.19
MB POWER	111.60	1.16
SIMHAPURI	108.61	1.13
NTPC STATIONS-NR	107.35	1.12
J & K	100.91	1.05
ADHUNIK POWER LTD	99.75	1.04
AHEJ4L_WIND	95.26	0.99
BIHAR	88.34	0.92
KOLYAT_SLR	86.60	0.90
ODISHA	85.42	0.89
HIMACHAL PRADESH	81.36	0.85
AVAADASN_SLR	75.62	0.79
SKS POWER	74.38	0.77
JHABUA POWER_MP	71.35	0.74
ABC_BHDL2	70.88	0.74
ACBIL	68.42	0.71
THAR1_SLR	61.31	0.64
WEST BENGAL	58.36	0.61
TATA_GREEN	51.76	0.54
ACME_HEERGARH	48.90	0.51
TELANGANA	47.48	0.49
GMR KAMALANGA	45.23	0.47
RENEW_SR_SLR	39.86	0.42
DELHI	39.57	0.41
NEEPCO STATIONS	34.19	0.36
DIKCHU HEP	29.64	0.31
BALCO	19.20	0.20
TRN ENERGY	18.00	0.19
DCPP	18.00	0.19
DGEN MEGA POWER	16.73	0.17
AD HYDRO	14.94	0.16
SORANG HEP	12.07	0.13
ANDHRA PRADESH	11.31	0.12
DAGACHU	10.55	0.11

SB_SLR	10.32	0.11
UTTARAKHAND	10.18	0.11
SINGOLI BHATWARI HEP	9.85	0.10
NSPCL	9.83	0.10
NTPC STATIONS-SR	9.53	0.10
LANKO_AMK	9.36	0.10
REGL	8.80	0.09
JSW_RENEW_2	8.57	0.09
HARYANA	8.26	0.09
TAMIL NADU	7.52	0.08
SAINJ HEP	7.47	0.08
ARUNACHAL PRADESH	7.26	0.08
ADANI_WIND	5.60	0.06
KARCHAM WANGTOO	5.09	0.05
MARUTI COAL	4.60	0.05
OSTRO Hiriyur	4.29	0.04
CONTINNUM PT	2.94	0.03
SIKKIM	2.80	0.03
MANIPUR	2.16	0.02
NTPC STATIONS-WR	1.67	0.02
KERALA	1.52	0.02
TASHIDENG HEP	1.51	0.02
JORETHANG	1.19	0.01
TATA_SLR	1.18	0.01
EMCO	1.10	0.01
RENERGY5_WIND	0.35	0.004
Total	9603.43	100.00
Volume Sold by top 5 Regional Entities	3692.90	38.45

Table-16: VOLUME OF ELECTRICITY PURCHASED THROUGH BILATERAL, APRIL 2023		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
TAMIL NADU	1504.72	15.67
MAHARASHTRA	1466.21	15.27
ANDHRA PRADESH	1177.12	12.26
KARNATAKA	816.94	8.51
GUJARAT	585.18	6.09
TELANGANA	578.71	6.03
UTTAR PRADESH	496.73	5.17
WEST BENGAL	421.17	4.39
KERALA	407.18	4.24
DELHI	362.97	3.78
CHHATTISGARH	245.82	2.56
HARYANA	221.86	2.31
ODISHA	185.80	1.93
MP	154.53	1.61
HIMACHAL PRADESH	141.32	1.47
AMPS Hazira	132.36	1.38
JHARKHAND	129.65	1.35
RAJASTHAN	106.15	1.11
DD&DNH	98.32	1.02
NEPAL(NVVN)	86.40	0.90
UTTARAKHAND	85.03	0.89
GOA	74.06	0.77
PUNJAB	70.89	0.74
PONDICHERRY	23.73	0.25
SIKKIM	13.27	0.14
ARUNACHAL PRADESH	9.02	0.09
J & K	4.73	0.05
MEGHALAYA	1.66	0.02
MANIPUR	1.38	0.01
BIHAR	0.51	0.01
TOTAL	9603.43	100.00
Volume Purchased by top 5 Regional Entities	5550.17	57.79

Table-17: VOLUME OF ELECTRICITY SOLD IN DAY AHEAD MARKET THROUGH POWER EXCHANGES, APRIL 2023

Name of the Entity	Volume of Sale (MUs)	% of Volume
UTTAR PRADESH	951.75	21.59
BIHAR	454.00	10.30
CHHATTISGARH	310.28	7.04
HARYANA	226.80	5.14
DELHI	216.09	4.90
JINDAL STAGE-II	181.41	4.11
JAYPEE NIGRIE	136.03	3.09
MB POWER	135.96	3.08
DB POWER	121.45	2.75
JINDAL POWER	112.24	2.55
SKS POWER	98.53	2.23
MAHARASHTRA	80.32	1.82
HIMACHAL PRADESH	72.89	1.65
TELANGANA	66.94	1.52
TAMIL NADU	63.64	1.44
GUJARAT	62.96	1.43
DCPP	61.68	1.40
SEMBCORP	54.44	1.23
RPREL	52.87	1.20
RAJASTHAN	50.65	1.15
MP	48.92	1.11
ASSAM	48.57	1.10
WEST BENGAL	46.12	1.05
ODISHA	45.80	1.04
DGEN MEGA POWER	42.40	0.96
ESSAR POWER	41.34	0.94
KARNATAKA	40.90	0.93
CHANDIGARH	35.15	0.80
NTPC STATIONS-WR	32.68	0.74
RGPPL	29.60	0.67
NTPC STATIONS-NR	29.46	0.67
GOA	28.67	0.65
NTPC STATIONS-SR	28.51	0.65
ANDHRA PRADESH	28.08	0.64
KERALA	27.04	0.61
JITPL	24.88	0.56
DVC	24.19	0.55
JHARKHAND	23.21	0.53
ACBIL	20.12	0.46
MARUTI COAL	19.86	0.45
TEESTA HEP	19.80	0.45
NEEPCO STATIONS	15.49	0.35
UTTARAKHAND	13.61	0.31
IL&FS	12.26	0.28
REGL	11.73	0.27
ASEJTL_SLR	11.45	0.26
RKM POWER	11.38	0.26
JHABUA POWER_MP	10.94	0.25
ONGC PALATANA	10.42	0.24
RENEW_SR_SLR	10.37	0.24
J & K	9.07	0.21
KARCHAM WANGTOO	8.95	0.20
EMCO	8.76	0.20
ARUNACHAL PRADESH	8.67	0.20

MIZORAM	7.85	0.18
SAINJ HEP	7.80	0.18
AD HYDRO	7.09	0.16
BALCO	6.63	0.15
SIKKIM	5.89	0.13
COASTGEN	4.82	0.11
TRIPURA	3.89	0.09
CHUZACHEN HEP	3.62	0.08
NTPC STATIONS-NER	3.24	0.07
DIKCHU HEP	2.88	0.07
SINGOLI BHATWARI HEP	2.47	0.06
SHREE CEMENT	2.38	0.05
OSTRO Hiriyur	2.17	0.05
NHPC STATIONS	1.61	0.04
PONDICHERRY	1.55	0.04
NAGALAND	1.25	0.03
LANCO BUDHIL	1.13	0.03
DHARIWAL POWER	0.86	0.02
ADANI_WIND	0.60	0.01
SIMHAPURI	0.54	0.01
NLC	0.53	0.01
SORANG HEP	0.26	0.01
MEGHALAYA	0.18	0.004
GMR KAMALANGA	0.12	0.003
SB_SLR	0.09	0.002
ADHUNIK POWER LTD	0.07	0.002
NTPC STATIONS-ER	0.05	0.001
PUNJAB	0.04	0.001
Total	4408.93	100.00
Volume sold by top 5 Regional Entities	2158.92	48.97

Table-18: VOLUME OF ELECTRICITY PURCHASED IN DAY AHEAD MARKET THROUGH POWER EXCHANGES, APRIL 2023		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
GUJARAT	956.77	21.70
TELANGANA	507.98	11.52
PUNJAB	420.43	9.54
WEST BENGAL	412.01	9.34
J & K	406.14	9.21
MAHARASHTRA	225.32	5.11
ANDHRA PRADESH	174.37	3.95
UTTAR PRADESH	167.27	3.79
UTTARAKHAND	166.07	3.77
NEPAL(NVVN)	163.24	3.70
TAMIL NADU	143.05	3.24
RAJASTHAN	136.22	3.09
DD&DNH	109.10	2.47
ASSAM	65.03	1.47
AMPS Hazira	60.17	1.36
DGPCL Bhutan	48.33	1.10
KARNATAKA	44.50	1.01
HIMACHAL PRADESH	30.85	0.70
MP	23.05	0.52
HARYANA	22.51	0.51
KERALA	21.69	0.49
GOA	21.07	0.48
ODISHA	18.64	0.42
NEP	18.55	0.42
JHARKHAND	17.72	0.40
NCR ALLAHABAD	8.64	0.20
CHHATTISGARH	5.77	0.13
MEGHALAYA	4.82	0.11
DELHI	3.65	0.08
ARUNACHAL PRADESH	2.35	0.05
BIHAR	1.50	0.03
TRIPURA	0.84	0.02
RGPPL_IR	0.68	0.02
BALCO	0.21	0.005
MANIPUR	0.21	0.005
SIKKIM	0.20	0.005
TOTAL	4408.93	100.00
Volume purchased by top 5 Regional Entities	2703.32	61.31

Table-19: VOLUME OF ELECTRICITY SOLD IN GREEN DAY AHEAD MARKET THROUGH POWER EXCHANGES, APRIL 2023		
Name of the Entity	Volume of Sale (MUs)	% of Volume
KARNATAKA	49.13	31.18
ANDHRA PRADESH	25.73	16.33
TELANGANA	14.38	9.13
NTPC STATIONS-SR	14.35	9.11
ADANI_WIND	8.65	5.49
J & K	6.91	4.39
MP	6.49	4.12
SIKKIM	5.04	3.20
OSTRO Hiriyur	4.89	3.10
HIMACHAL PRADESH	4.66	2.96
UTTAR PRADESH	3.71	2.36
SINGOLI BHATWARI HEP	3.67	2.33
WEST BENGAL	2.88	1.83
RAJASTHAN	1.90	1.21
SB_SLR	1.57	1.00
CONTINNUM PT	1.42	0.90
PUNJAB	0.82	0.52
MAHARASHTRA	0.64	0.40
HARYANA	0.40	0.25
REENERGY5_WIND	0.24	0.15
ODISHA	0.073	0.05
Total	157.55	100.00
Volume sold by top 5 Regional Entities	112.24	71.24

Table-20: VOLUME OF ELECTRICITY PURCHASED IN GREEN DAY AHEAD MARKET THROUGH POWER EXCHANGES, APRIL 2023		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
MAHARASHTRA	39.70	25.20
DVC	20.85	13.23
AMPS Hazira	16.73	10.62
DELHI	13.16	8.35
TAMIL NADU	12.90	8.19
KARNATAKA	9.80	6.22
GUJARAT	9.30	5.90
WEST BENGAL	7.46	4.74
BALCO	7.01	4.45
DD&DNH	4.50	2.86
MP	4.40	2.79
NCR ALLAHABAD	2.94	1.87
UTTAR PRADESH	2.50	1.59
KERALA	1.95	1.24
PUNJAB	1.42	0.90
JHARKHAND	0.92	0.58
ODISHA	0.83	0.53
TELANGANA	0.51	0.32
ANDHRA PRADESH	0.25	0.16
BIHAR	0.23	0.15
RAJASTHAN	0.14	0.09
HARYANA	0.05	0.03
TOTAL	157.55	100.00
Volume purchased by top 5 Regional Entities	103.34	65.59

Table-21: VOLUME OF ELECTRICITY SOLD IN HIGH PRICE DAY AHEAD MARKET THROUGH POWER EXCHANGES, APRIL 2023		
Name of the Entity	Volume of Sale (MUs)	% of Volume
KARNATAKA	0.07	33.83
SIMHAPURI	0.06	32.31
GUJARAT	0.05	26.12
IL&FS	0.02	7.74
Total	0.19	100.00
Volume sold by top 5 Regional Entities	0.19	100.00

Table-22: VOLUME OF ELECTRICITY PURCHASED IN HIGH PRICE DAY AHEAD MARKET THROUGH POWER EXCHANGES, APRIL 2023		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
MEGHALAYA	0.10	50.03
CHHATTISGARH	0.10	49.97
Total	0.19	100.00
Volume purchased by top 5 Regional Entities	0.19	100.00

Table-23: VOLUME OF ELECTRICITY SOLD IN REAL TIME MARKET THROUGH POWER EXCHANGES, APRIL 2023

Name of the Entity	Volume of Sale (MUs)	% of Volume
MP	369.96	17.19
KAPP 3&4	282.39	13.12
BIHAR	264.99	12.31
RAJASTHAN	140.69	6.54
DELHI	121.81	5.66
CHHATTISGARH	106.20	4.93
UTTAR PRADESH	96.22	4.47
ODISHA	85.91	3.99
HIMACHAL PRADESH	66.01	3.07
WEST BENGAL	59.28	2.75
MAHARASHTRA	50.95	2.37
TELANGANA	33.92	1.58
J & K	26.68	1.24
JHARKHAND	26.42	1.23
HARYANA	26.27	1.22
SKS POWER	25.75	1.20
NEEPCO STATIONS	24.23	1.13
RKM POWER	23.64	1.10
ASSAM	22.11	1.03
TRN ENERGY	21.06	0.98
DGEN MEGA POWER	18.82	0.87
GUJARAT	17.17	0.80
KARNATAKA	17.11	0.79
ACBIL	15.51	0.72
ANDHRA PRADESH	14.95	0.69
ONGC PALATANA	14.92	0.69
NTPC STATIONS-NR	12.54	0.58
TEESTA HEP	11.73	0.54
SASAN UMPP	11.50	0.53
UTTARAKHAND	11.28	0.52
KERALA	9.95	0.46
SEMBCORP	9.04	0.42
DIKCHU HEP	7.09	0.33
ESSAR POWER	6.87	0.32
TRIPURA	6.82	0.32
TAMIL NADU	6.69	0.31
JINDAL STAGE-II	6.21	0.29
BALCO	6.06	0.28
NLC	5.82	0.27
MB POWER	5.79	0.27
DVC	4.37	0.20
MARUTI COAL	4.17	0.19
JINDAL POWER	3.74	0.17
RPREL	3.70	0.17
MANIPUR	3.62	0.17
JHABUA POWER_MP	3.29	0.15
SIKKIM	3.06	0.14
SAINJ HEP	3.01	0.14
PUNJAB	3.00	0.14
DCPP	2.97	0.14
SINGOLI BHATWARI HEP	2.48	0.12
EMCO	2.23	0.10
SIMHAPURI	2.23	0.10
JITPL	2.04	0.09

ARUNACHAL PRADESH	1.97	0.09
IL&FS	1.80	0.08
DD&DNH	1.58	0.07
CGPL	1.43	0.07
RENEW_SR_SLR	1.16	0.05
NTPC STATIONS-SR	1.07	0.05
PONDICHERRY	0.75	0.04
SORANG HEP	0.75	0.04
OSTRO Hiriyur	0.74	0.03
KARCHAM WANGTOO	0.69	0.03
CONTINNUM PT	0.60	0.03
JAYPEE NIGRIE	0.59	0.03
NTPC STATIONS-WR	0.59	0.03
CHUZACHEN HEP	0.58	0.03
REGL	0.46	0.02
CHANDIGARH	0.41	0.02
ADHUNIK POWER LTD	0.40	0.02
COASTGEN	0.38	0.02
AD HYDRO	0.35	0.02
SHREE CEMENT	0.35	0.02
ADANI_WIND	0.29	0.01
NTPC STATIONS-NER	0.26	0.01
NAGALAND	0.24	0.01
DB POWER	0.23	0.01
RGPPL_IR	0.20	0.01
LANCO BUDHIL	0.19	0.01
GMR KAMALANGA	0.12	0.01
SB_SLR	0.07	0.003
MIZORAM	0.03	0.001
Total	2152.56	100.00
Volume sold by top 5 Regional Entities	1179.85	54.81

Table-24: VOLUME OF ELECTRICITY PURCHASED IN REAL TIME MARKET THROUGH POWER EXCHANGES, APRIL 2023		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
TELANGANA	415.21	19.29
MAHARASHTRA	271.65	12.62
PUNJAB	189.65	8.81
WEST BENGAL	148.33	6.89
GUJARAT	147.17	6.84
RAJASTHAN	129.62	6.02
J & K	128.33	5.96
UTTAR PRADESH	126.02	5.85
ANDHRA PRADESH	106.63	4.95
TAMIL NADU	84.06	3.91
ODISHA	81.58	3.79
KARNATAKA	55.41	2.57
ASSAM	42.34	1.97
HARYANA	24.04	1.12
AMPS Hazira	23.85	1.11
DELHI	22.65	1.05
DD&DNH	21.83	1.01
UTTARAKHAND	20.89	0.97
KERALA	15.77	0.73
JHARKHAND	10.68	0.50
TRIPURA	10.60	0.49
MP	10.06	0.47
DVC	10.01	0.47
MANIPUR	9.87	0.46
MEGHALAYA	7.59	0.35
CHHATTISGARH	6.58	0.31
HIMACHAL PRADESH	6.03	0.28
SIKKIM	5.98	0.28
BIHAR	4.49	0.21
GOA	4.23	0.20
NCR ALLAHABAD	3.32	0.15
BALCO	3.27	0.15
MARUTI COAL	1.51	0.07
SIMHAPURI	1.04	0.05
ARUNACHAL PRADESH	0.46	0.02
JINDAL POWER	0.42	0.02
NTPC STATIONS-WR	0.40	0.02
CGPL	0.39	0.02
SKS POWER	0.18	0.01
JINDAL STAGE-II	0.14	0.01
RGPPL_IR	0.13	0.01
ACBIL	0.13	0.01
SAINJ HEP	0.04	0.002
TOTAL	2152.56	100.00
Volume purchased by top 5 Regional Entities	1172.02	54.45

Table-25: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY-WISE), APRIL 2023		
S. No.	Name of the Entity	Total volume of net short-term transactions of electricity*
1	TAMIL NADU	1666.89
2	MAHARASHTRA	1660.50
3	ANDHRA PRADESH	1378.28
4	GUJARAT	1368.58
5	TELANGANA	1339.70
6	WEST BENGAL	822.34
7	KARNATAKA	506.27
8	KERALA	408.08
9	J & K	395.62
10	NEPAL(NVVN)	249.64
11	UTTARAKHAND	236.92
12	AMPS Hazira	233.11
13	DD&DNH	232.17
14	JHARKHAND	109.33
15	GOA	70.68
16	ODISHA	69.64
17	DGPCL Bhutan	48.33
18	ASSAM	36.69
19	DELHI	24.96
20	PONDICHERRY	21.43
21	NEP	18.55
22	NCR ALLAHABAD	14.91
23	MEGHALAYA	14.00
24	HARYANA	6.74
25	MANIPUR	5.67
26	SIKKIM	2.66
27	RAJASTHAN	1.52
28	TRIPURA	0.73
29	RGPPL_IR	0.62
30	NTPC STATIONS-ER	-0.05
31	RENERGY5_WIND	-0.59
32	DHARIWAL POWER	-0.86
33	CGPL	-1.04
34	TATA_SLR	-1.18
35	JORETHANG	-1.19
36	LANCO BUDHIL	-1.31
37	NAGALAND	-1.49
38	TASHIDENG HEP	-1.51
39	NHPC STATIONS	-1.61
40	NTPC STATIONS-NER	-3.51
41	CHUZACHEN HEP	-4.20
42	CONTINNUM PT	-4.97
43	ARUNACHAL PRADESH	-6.07
44	NLC	-6.35
45	MIZORAM	-7.87
46	JSW_RENEW_2	-8.57
47	LANKO_AMK	-9.36
48	NSPCL	-9.83
49	DAGACHU	-10.55
50	ASEJTL_SLR	-11.45
51	SASAN UMPP	-11.50
52	SB_SLR	-12.05
53	EMCO	-12.09
54	OSTRO Hiriyur	-12.09
55	SORANG HEP	-13.08
56	KARCHAM WANGTOO	-14.73
57	ADANI_WIND	-15.13
58	SAINJ HEP	-18.24
59	SINGOLI BHATWARI HEP	-18.47
60	REGL	-20.99
61	BALCO	-21.41
62	AD HYDRO	-22.38

63	ONGC PALATANA	-25.34
64	MARUTI COAL	-27.12
65	RGPPL	-29.60
66	TEESTA HEP	-31.53
67	NTPC STATIONS-WR	-34.53
68	CHANDIGARH	-35.55
69	TRN ENERGY	-39.06
70	DIKCHU HEP	-39.61
71	GMR KAMALANGA	-45.47
72	HIMACHAL PRADESH	-46.71
73	ACME_HEERGARH	-48.90
74	RENEW_SR_SLR	-51.39
75	TATA GREEN	-51.76
76	NTPC STATIONS-SR	-53.46
77	THARI_SLR	-61.31
78	ABC_BHDL2	-70.88
79	NEEPCO STATIONS	-73.91
80	AVAADASN_SLR	-75.62
81	DGEN MEGA POWER	-77.94
82	DCPP	-82.65
83	JHABUA POWER_MP	-85.58
84	KOLYAT_SLR	-86.60
85	AHEJ4L_WIND	-95.26
86	ADHUNIK POWER LTD	-100.22
87	ACBIL	-103.92
88	SIMHAPURI	-110.40
89	DVC	-127.55
90	NTPC STATIONS-NR	-149.35
91	CHHATTISGARH	-158.21
92	AHEJ4L_SOLAR	-171.26
93	TEESTA STG3	-178.72
94	SHREE CEMENT	-188.04
95	SKS POWER	-198.48
96	DB POWER	-235.59
97	MB POWER	-253.35
98	JITPL	-268.44
99	KAPP 3&4	-282.39
100	COASTGEN	-335.83
101	IL&FS	-357.38
102	JINDAL POWER	-374.82
103	MP	-375.96
104	UTTAR PRADESH	-398.49
105	RKM POWER	-405.18
106	SEMBCORP	-435.51
107	JAYPEE NIGRIE	-444.74
108	JINDAL STAGE-II	-646.60
109	ESSAR POWER	-649.91
110	RPREL	-786.39
111	BIHAR	-800.59
112	PUNJAB	-851.72
* 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-26: DETAILS OF CONGESTION IN POWER EXCHANGES, APRIL 2023

	Details of Congestion	Day Ahead Market			Green Day Ahead Market			High Price Day Ahead Market	Real Time Market		
		IEX	PXIL	HPX	IEX	PXIL	HPX	IEX	IEX	PXIL	HPX
1	Unconstrained Cleared Volume (MUs)	4465.43	0.00	0.00	157.76	0.00	0.00	0.16	2156.39	0.00	0.11
2	Actual Cleared Volume and hence scheduled (MUs)	4408.93	0.00	0.00	157.55	0.00	0.00	0.19 [#]	2152.45	0.00	0.11
3	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) *	56.50	0.00	0.00	0.21	0.00	0.00	0.00	3.93	0.00	0.00
4	Volume of electricity that could not be cleared and hence not scheduled because of reasons other than congestion (MUs)	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	1.27%	0.00%	0.00%	0.13%	0.00%	0.00%	0.00%	0.18%	0.00%	0.00%
6	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/ Total number of hours in the month)	20.80%	0.00%	0.00%	6.81%	0.00%	0.00%	0.10%	7.78%	0.00%	0.00%
7	Congestion occurrence (%) time block wise										
	0.00 - 6.00 hours	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	6.00 - 12.00 hours	39.40%	0.00%	0.00%	49.49%	0.00%	0.00%	0.00%	9.38%	0.00%	0.00%
	12.00 - 18.00 hours	47.41%	0.00%	0.00%	41.33%	0.00%	0.00%	33.33%	61.61%	0.00%	0.00%
	18.00 - 24.00 hours	13.19%	0.00%	0.00%	9.18%	0.00%	0.00%	66.67%	29.02%	0.00%	0.00%
* This power would have been scheduled had there been no congestion											
[#] Owing to the Order Carry Forward (OCF) option, in some instances where congestion was experienced in DAM, the bids transferred from DAM to HP-DAM underwent changes. This resulted in higher volume getting cleared compared to the unconstrained market clearing volume in HP-DAM											

Source: IEX, PXIL, HPX & NLDC

**Table-27: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA (DAY-WISE) (MUs),
APRIL 2023**

Date	Bilateral		Day Ahead Market [#]			Green Day Ahead Market [#]			High Price DAM [#]	Real Time Market [#]			Total Electricity Generation (MU) *
	Through Traders and PXs**	Direct	IEX	PXIL	HPX	IEX	PXIL	HPX	IEX	IEX	PXIL	HPX	
1-Apr-23	203.89	80.55	167.21	0.00	0.00	4.55	0.00	0.00	0.00	79.49	0.00	0.00	3653.65
2-Apr-23	192.98	96.14	153.66	0.00	0.00	5.15	0.00	0.00	0.00	62.10	0.00	0.00	3553.70
3-Apr-23	198.50	97.75	161.04	0.00	0.00	5.07	0.00	0.00	0.00	67.90	0.00	0.00	3771.80
4-Apr-23	198.27	95.77	155.33	0.00	0.00	4.95	0.00	0.00	0.00	60.97	0.00	0.00	3925.54
5-Apr-23	207.55	93.79	146.95	0.00	0.00	5.94	0.00	0.00	0.00	63.23	0.00	0.00	3979.80
6-Apr-23	210.47	99.71	158.73	0.00	0.00	4.60	0.00	0.00	0.00	75.91	0.00	0.00	4010.79
7-Apr-23	207.75	100.11	165.20	0.00	0.00	3.46	0.00	0.00	0.00	72.08	0.00	0.00	4039.85
8-Apr-23	195.97	97.95	163.46	0.00	0.00	5.45	0.00	0.00	0.00	78.11	0.00	0.00	3983.35
9-Apr-23	176.54	96.94	188.88	0.00	0.00	4.63	0.00	0.00	0.00	77.65	0.00	0.00	3914.20
10-Apr-23	197.34	97.55	190.84	0.00	0.00	4.40	0.00	0.00	0.00	71.60	0.00	0.00	4111.57
11-Apr-23	230.18	90.72	180.97	0.00	0.00	3.99	0.00	0.00	0.00	66.91	0.00	0.00	4286.99
12-Apr-23	232.32	93.16	174.35	0.00	0.00	6.05	0.00	0.00	0.00	67.59	0.00	0.00	4308.39
13-Apr-23	244.96	94.81	153.46	0.00	0.00	7.28	0.00	0.00	0.00	62.46	0.00	0.00	4384.91
14-Apr-23	233.14	100.16	151.20	0.00	0.00	4.58	0.00	0.00	0.00	66.25	0.00	0.00	4349.35
15-Apr-23	238.72	96.74	146.94	0.00	0.00	4.76	0.00	0.00	0.00	63.02	0.00	0.00	4322.52
16-Apr-23	222.49	97.65	141.07	0.00	0.00	4.54	0.00	0.00	0.03	63.04	0.00	0.00	4243.88
17-Apr-23	249.85	99.58	150.77	0.00	0.00	4.80	0.00	0.00	0.10	63.31	0.00	0.00	4456.51
18-Apr-23	261.73	103.22	154.54	0.00	0.00	4.92	0.00	0.00	0.01	74.89	0.00	0.00	4604.32
19-Apr-23	273.32	103.03	160.27	0.00	0.00	4.22	0.00	0.00	0.00	76.89	0.00	0.11	4541.89
20-Apr-23	269.48	101.58	128.54	0.00	0.00	4.82	0.00	0.00	0.03	70.28	0.00	0.00	4468.75
21-Apr-23	271.11	98.11	111.03	0.00	0.00	4.89	0.00	0.00	0.02	77.18	0.00	0.00	4295.03
22-Apr-23	259.25	101.01	105.13	0.00	0.00	4.77	0.00	0.00	0.01	72.40	0.00	0.00	4135.34
23-Apr-23	211.88	94.99	109.45	0.00	0.00	5.62	0.00	0.00	0.00	70.67	0.00	0.00	3788.22
24-Apr-23	234.60	94.13	125.26	0.00	0.00	7.00	0.00	0.00	0.00	80.49	0.00	0.00	4035.35
25-Apr-23	223.19	94.64	128.12	0.00	0.00	8.11	0.00	0.00	0.00	75.08	0.00	0.00	4143.93
26-Apr-23	229.55	93.23	128.96	0.00	0.00	6.51	0.00	0.00	0.00	67.04	0.00	0.00	4176.39
27-Apr-23	225.37	93.20	130.16	0.00	0.00	6.10	0.00	0.00	0.00	84.95	0.00	0.00	4213.84
28-Apr-23	220.05	98.58	131.23	0.00	0.00	5.01	0.00	0.00	0.00	76.30	0.00	0.00	4193.07
29-Apr-23	213.74	91.47	130.70	0.00	0.00	5.54	0.00	0.00	0.00	81.76	0.00	0.00	4064.51
30-Apr-23	182.28	90.69	115.48	0.00	0.00	5.84	0.00	0.00	0.00	82.90	0.00	0.00	3692.71
Total	6716.48	2886.95	4408.93	0.00	0.00	157.55	0.00	0.00	0.19	2152.45	0.00	0.11	123650.15

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.

Scheduled volume of all the bid areas.

Table-28(a): PRICE OF DAY AHEAD TRANSACTIONS OF ELECTRICITY (DAY-WISE) (₹/kWh), APRIL 2023

Market Segment	Day Ahead Market of IEX			Day Ahead Market of PXIL			Day Ahead Market of HPX			High Price Day Ahead Market of IEX		
Date	Minimum ACP	Maximum ACP	Weighted Average Price*	Minimum ACP	Maximum ACP	Weighted Average Price*	Minimum ACP	Maximum ACP	Weighted Average Price*	Minimum ACP	Maximum ACP	Weighted Average Price*
1-Apr-23	2.22	7.00	4.34	-	-	-	-	-	-	-	-	-
2-Apr-23	2.01	4.65	3.55	-	-	-	-	-	-	-	-	-
3-Apr-23	2.45	6.98	4.15	-	-	-	-	-	-	-	-	-
4-Apr-23	2.70	6.10	4.23	-	-	-	-	-	-	-	-	-
5-Apr-23	2.63	7.36	4.22	-	-	-	-	-	-	-	-	-
6-Apr-23	2.71	7.86	4.49	-	-	-	-	-	-	-	-	-
7-Apr-23	2.40	8.00	4.37	-	-	-	-	-	-	-	-	-
8-Apr-23	2.50	10.00	4.98	-	-	-	-	-	-	-	-	-
9-Apr-23	2.14	10.00	4.98	-	-	-	-	-	-	-	-	-
10-Apr-23	2.87	10.00	6.14	-	-	-	-	-	-	-	-	-
11-Apr-23	2.92	10.00	6.29	-	-	-	-	-	-	-	-	-
12-Apr-23	2.87	10.00	6.28	-	-	-	-	-	-	-	-	-
13-Apr-23	2.87	10.00	6.07	-	-	-	-	-	-	-	-	-
14-Apr-23	2.80	10.00	6.25	-	-	-	-	-	-	-	-	-
15-Apr-23	2.91	10.00	6.32	-	-	-	-	-	-	-	-	-
16-Apr-23	2.81	10.00	6.18	-	-	-	-	-	-	6.80	11.00	8.54
17-Apr-23	2.27	10.00	6.70	-	-	-	-	-	-	11.00	20.00	18.83
18-Apr-23	2.63	10.00	7.22	-	-	-	-	-	-	10.07	10.07	10.07
19-Apr-23	2.68	10.00	7.50	-	-	-	-	-	-	-	-	-
20-Apr-23	2.63	10.00	6.85	-	-	-	-	-	-	10.44	10.45	10.44
21-Apr-23	2.81	10.00	6.83	-	-	-	-	-	-	10.00	13.77	11.94
22-Apr-23	2.63	10.00	6.19	-	-	-	-	-	-	10.00	10.00	10.00
23-Apr-23	1.78	6.90	3.93	-	-	-	-	-	-	-	-	-
24-Apr-23	2.63	10.00	5.07	-	-	-	-	-	-	-	-	-
25-Apr-23	2.60	7.20	4.11	-	-	-	-	-	-	-	-	-
26-Apr-23	2.63	10.00	4.14	-	-	-	-	-	-	-	-	-
27-Apr-23	2.81	6.00	3.88	-	-	-	-	-	-	-	-	-
28-Apr-23	2.81	7.00	3.97	-	-	-	-	-	-	-	-	-
29-Apr-23	2.50	5.50	3.74	-	-	-	-	-	-	-	-	-
30-Apr-23	1.42	4.13	3.03	-	-	-	-	-	-	-	-	-
	1.42#	10.00#	5.24	-	-	-	-	-	-	6.80#	20.00#	14.59

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.

Maximum/Minimum in the month

**Table-28(b): PRICE OF GREEN DAY AHEAD TRANSACTIONS OF ELECTRICITY (DAY-WISE) (₹/kWh),
APRIL 2023**

Market Segment	Green Day Ahead Market of IEX			Green Day Ahead Market of PXIL			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-Apr-23	3.50	6.00	4.57	-	-	-	-	-	-
2-Apr-23	4.12	6.40	4.71	-	-	-	-	-	-
3-Apr-23	4.10	5.68	4.61	-	-	-	-	-	-
4-Apr-23	4.11	6.00	4.58	-	-	-	-	-	-
5-Apr-23	4.20	6.20	4.89	-	-	-	-	-	-
6-Apr-23	4.30	7.00	5.01	-	-	-	-	-	-
7-Apr-23	3.80	7.00	5.16	-	-	-	-	-	-
8-Apr-23	3.93	7.50	4.98	-	-	-	-	-	-
9-Apr-23	3.93	7.00	4.95	-	-	-	-	-	-
10-Apr-23	3.93	7.50	5.24	-	-	-	-	-	-
11-Apr-23	4.10	10.00	6.47	-	-	-	-	-	-
12-Apr-23	4.39	10.00	7.86	-	-	-	-	-	-
13-Apr-23	3.93	10.00	7.63	-	-	-	-	-	-
14-Apr-23	3.90	10.00	6.37	-	-	-	-	-	-
15-Apr-23	4.00	10.00	6.70	-	-	-	-	-	-
16-Apr-23	3.90	10.00	6.14	-	-	-	-	-	-
17-Apr-23	3.34	10.00	7.01	-	-	-	-	-	-
18-Apr-23	3.34	10.00	7.14	-	-	-	-	-	-
19-Apr-23	3.34	10.00	7.26	-	-	-	-	-	-
20-Apr-23	3.34	10.00	7.13	-	-	-	-	-	-
21-Apr-23	3.34	10.00	7.35	-	-	-	-	-	-
22-Apr-23	3.34	10.00	7.35	-	-	-	-	-	-
23-Apr-23	2.85	10.00	6.06	-	-	-	-	-	-
24-Apr-23	3.34	10.00	5.25	-	-	-	-	-	-
25-Apr-23	3.34	8.68	4.56	-	-	-	-	-	-
26-Apr-23	3.34	10.00	4.52	-	-	-	-	-	-
27-Apr-23	3.34	6.74	4.35	-	-	-	-	-	-
28-Apr-23	3.34	6.40	4.47	-	-	-	-	-	-
29-Apr-23	3.34	7.00	4.55	-	-	-	-	-	-
30-Apr-23	1.89	5.67	4.22	-	-	-	-	-	-
	1.89#	10.00#	5.67	-	-	-	-	-	-

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.

Maximum/Minimum in the month

Table-28(c): PRICE OF REAL TIME TRANSACTIONS (DAY-WISE) (₹/kWh), APRIL 2023

Market Segment	Real Time Market of IEX			Real Time 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
1-Apr-23	1.92	5.50	3.03	-	-	-	-	-	-
2-Apr-23	1.45	6.25	3.35	-	-	-	-	-	-
3-Apr-23	2.36	7.36	4.01	-	-	-	-	-	-
4-Apr-23	2.40	9.46	4.37	-	-	-	-	-	-
5-Apr-23	2.36	10.00	4.48	-	-	-	-	-	-
6-Apr-23	1.74	10.00	5.12	-	-	-	-	-	-
7-Apr-23	2.70	10.00	5.72	-	-	-	-	-	-
8-Apr-23	2.40	10.00	6.11	-	-	-	-	-	-
9-Apr-23	0.20	10.00	5.04	-	-	-	-	-	-
10-Apr-23	2.70	10.00	5.99	-	-	-	-	-	-
11-Apr-23	3.19	10.00	7.64	-	-	-	-	-	-
12-Apr-23	2.67	10.00	7.10	-	-	-	-	-	-
13-Apr-23	3.05	10.00	7.18	-	-	-	-	-	-
14-Apr-23	3.05	10.00	7.08	-	-	-	-	-	-
15-Apr-23	2.70	10.00	6.80	-	-	-	-	-	-
16-Apr-23	0.20	10.00	6.76	-	-	-	-	-	-
17-Apr-23	2.65	10.00	6.10	-	-	-	-	-	-
18-Apr-23	3.80	10.00	7.36	-	-	-	-	-	-
19-Apr-23	1.98	10.00	6.22	-	-	-	10.00	10.00	10.00
20-Apr-23	2.21	10.00	5.09	-	-	-	-	-	-
21-Apr-23	2.50	10.00	4.05	-	-	-	-	-	-
22-Apr-23	1.98	4.95	3.39	-	-	-	-	-	-
23-Apr-23	0.70	5.50	2.77	-	-	-	-	-	-
24-Apr-23	2.00	6.45	3.57	-	-	-	-	-	-
25-Apr-23	2.68	6.00	3.85	-	-	-	-	-	-
26-Apr-23	1.03	8.00	3.55	-	-	-	-	-	-
27-Apr-23	1.65	5.50	3.56	-	-	-	-	-	-
28-Apr-23	1.66	5.00	3.53	-	-	-	-	-	-
29-Apr-23	1.80	6.00	3.35	-	-	-	-	-	-
30-Apr-23	1.40	5.00	2.69	-	-	-	-	-	-
	0.20#	10.00#	4.90	-	-	-	10.00#	10.00#	10.00

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.

Maximum/Minimum in the month

**Table-29: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY*-WISE)
(MUs), APRIL 2023**

Name of the Entity	Through Bilateral (Traders + PXs + Direct)			Through Power Exchange (DAM + GDAM + HPDAM + RTM)			Total Net***
	Sale	Purchase	Net**	Sale	Purchase	Net**	
PUNJAB	1530.25	70.89	-1459.36	3.86	611.49	607.63	-851.72
HARYANA	8.26	221.86	213.60	253.46	46.60	-206.86	6.74
RAJASTHAN	177.35	106.15	-71.21	193.25	265.98	72.72	1.52
DELHI	39.57	362.97	323.40	337.90	39.46	-298.44	24.96
UTTAR PRADESH	139.33	496.73	357.40	1051.68	295.79	-755.89	-398.49
UTTARAKHAND	10.18	85.03	74.85	24.89	186.96	162.07	236.92
HIMACHAL PRADESH	81.36	141.32	59.96	143.55	36.88	-106.68	-46.71
J & K	100.91	4.73	-96.18	42.67	534.47	491.80	395.62
CHANDIGARH	0.00	0.00	0.00	35.55	0.00	-35.55	-35.55
MP	142.62	154.53	11.90	425.36	37.50	-387.86	-375.96
MAHARASHTRA	210.48	1466.21	1255.73	131.91	536.67	404.77	1660.50
GUJARAT	249.66	585.18	335.53	80.19	1113.24	1033.06	1368.58
CHHATTISGARH	0.00	245.82	245.82	416.48	12.45	-404.03	-158.21
GOA	0.00	74.06	74.06	28.67	25.29	-3.38	70.68
DD&DNH	0.00	98.32	98.32	1.58	135.44	133.86	232.17
ANDHRA PRADESH	11.31	1177.12	1165.80	68.77	281.24	212.47	1378.28
KARNATAKA	313.17	816.94	503.77	107.21	109.71	2.50	506.27
KERALA	1.52	407.18	405.67	37.00	39.41	2.41	408.08
TAMIL NADU	7.52	1504.72	1497.20	70.32	240.01	169.69	1666.89
PONDICHERRY	0.00	23.73	23.73	2.30	0.00	-2.30	21.43
TELANGANA	47.48	578.71	531.23	115.24	923.70	808.46	1339.70
WEST BENGAL	58.36	421.17	362.82	108.28	567.80	459.52	822.34
ODISHA	85.42	185.80	100.38	131.78	101.05	-30.73	69.64
BIHAR	88.34	0.51	-87.83	719.00	6.23	-712.77	-800.59
JHARKHAND	0.00	129.65	129.65	49.63	29.31	-20.32	109.33
SIKKIM	2.80	13.27	10.47	13.99	6.18	-7.81	2.66
DVC	129.85	0.00	-129.85	28.56	30.86	2.30	-127.55
ARUNACHAL P	7.26	9.02	1.76	10.63	2.81	-7.82	-6.07
ASSAM	0.00	0.00	0.00	70.68	107.37	36.69	36.69
MANIPUR	2.16	1.38	-0.78	3.62	10.07	6.45	5.67
MEGHALAYA	0.00	1.66	1.66	0.18	12.51	12.33	14.00
MIZORAM	0.00	0.00	0.00	7.87	0.00	-7.87	-7.87
NAGALAND	0.00	0.00	0.00	1.49	0.00	-1.49	-1.49
TRIPURA	0.00	0.00	0.00	10.71	11.43	0.73	0.73
NTPC STATIONS-NR	107.35	0.00	-107.35	42.00	0.00	-42.00	-149.35
NHPC STATIONS	0.00	0.00	0.00	1.61	0.00	-1.61	-1.61
NEP	0.00	0.00	0.00	0.00	18.55	18.55	18.55
AD HYDRO	14.94	0.00	-14.94	7.44	0.00	-7.44	-22.38
KARCHAM WANGTOO	5.09	0.00	-5.09	9.64	0.00	-9.64	-14.73
SHREE CEMENT	185.31	0.00	-185.31	2.73	0.00	-2.73	-188.04
LANCO BUDHIL	0.00	0.00	0.00	1.31	0.00	-1.31	-1.31
SORANG HEP	12.07	0.00	-12.07	1.01	0.00	-1.01	-13.08
SAINJ HEP	7.47	0.00	-7.47	10.81	0.04	-10.77	-18.24
SB_SLR	10.32	0.00	-10.32	1.73	0.00	-1.73	-12.05
TATA_SLR	1.18	0.00	-1.18	0.00	0.00	0.00	-1.18
ASEJTL_SLR	0.00	0.00	0.00	11.45	0.00	-11.45	-11.45
SINGOLI BHATWARI HEP	9.85	0.00	-9.85	8.62	0.00	-8.62	-18.47
AHEJ4L_WIND	95.26	0.00	-95.26	0.00	0.00	0.00	-95.26
AHEJ4L_SOLAR	171.26	0.00	-171.26	0.00	0.00	0.00	-171.26
AVAADASN_SLR	75.62	0.00	-75.62	0.00	0.00	0.00	-75.62
NCR ALLAHABAD	0.00	0.00	0.00	0.00	14.91	14.91	14.91
RENEW_SR_SLR	39.86	0.00	-39.86	11.53	0.00	-11.53	-51.39
THARI_SLR	61.31	0.00	-61.31	0.00	0.00	0.00	-61.31
ACME HEERGARH	48.90	0.00	-48.90	0.00	0.00	0.00	-48.90
ABC_BHDL2	70.88	0.00	-70.88	0.00	0.00	0.00	-70.88
KOLYAT_SLR	86.60	0.00	-86.60	0.00	0.00	0.00	-86.60

TATA_GREEN	51.76	0.00	-51.76	0.00	0.00	0.00	-51.76
NTPC STATIONS-WR	1.67	0.00	-1.67	33.27	0.40	-32.87	-34.53
JINDAL POWER	259.25	0.00	-259.25	115.99	0.42	-115.57	-374.82
LANKO_AMK	9.36	0.00	-9.36	0.00	0.00	0.00	-9.36
NSPCL	9.83	0.00	-9.83	0.00	0.00	0.00	-9.83
ACBIL	68.42	0.00	-68.42	35.63	0.13	-35.50	-103.92
BALCO	19.20	0.00	-19.20	12.69	10.48	-2.21	-21.41
RGPPL	0.00	0.00	0.00	29.60	0.00	-29.60	-29.60
CGPL	0.00	0.00	0.00	1.43	0.39	-1.04	-1.04
DCPP	18.00	0.00	-18.00	64.65	0.00	-64.65	-82.65
EMCO	1.10	0.00	-1.10	10.99	0.00	-10.99	-12.09
ESSAR POWER	601.69	0.00	-601.69	48.21	0.00	-48.21	-649.91
JINDAL STAGE-II	459.12	0.00	-459.12	187.62	0.14	-187.48	-646.60
DB POWER	113.92	0.00	-113.92	121.68	0.00	-121.68	-235.59
DHARIWAL POWER	0.00	0.00	0.00	0.86	0.00	-0.86	-0.86
JAYPEE NIGRIE	308.11	0.00	-308.11	136.62	0.00	-136.62	-444.74
DGEN MEGA POWER	16.73	0.00	-16.73	61.21	0.00	-61.21	-77.94
MB POWER	111.60	0.00	-111.60	141.75	0.00	-141.75	-253.35
MARUTI COAL	4.60	0.00	-4.60	24.03	1.51	-22.52	-27.12
JHABUA POWER_MP	71.35	0.00	-71.35	14.23	0.00	-14.23	-85.58
SASAN UMPP	0.00	0.00	0.00	11.50	0.00	-11.50	-11.50
TRN ENERGY	18.00	0.00	-18.00	21.06	0.00	-21.06	-39.06
RKM POWER	370.17	0.00	-370.17	35.01	0.00	-35.01	-405.18
SKS POWER	74.38	0.00	-74.38	124.28	0.18	-124.11	-198.48
KAPP 3&4	0.00	0.00	0.00	282.39	0.00	-282.39	-282.39
REGL	8.80	0.00	-8.80	12.19	0.00	-12.19	-20.99
RPREL	729.82	0.00	-729.82	56.57	0.00	-56.57	-786.39
AMPS Hazira	0.00	132.36	132.36	0.00	100.75	100.75	233.11
RGPPL_IR	0.00	0.00	0.00	0.20	0.81	0.62	0.62
ADANI_WIND	5.60	0.00	-5.60	9.53	0.00	-9.53	-15.13
CONTINNUM PT	2.94	0.00	-2.94	2.03	0.00	-2.03	-4.97
REENERGY5_WIND	0.35	0.00	-0.35	0.24	0.00	-0.24	-0.59
NTPC STATIONS-SR	9.53	0.00	-9.53	43.92	0.00	-43.92	-53.46
SIMHAPURI	108.61	0.00	-108.61	2.83	1.04	-1.79	-110.40
COASTGEN	330.64	0.00	-330.64	5.19	0.00	-5.19	-335.83
IL&FS	343.29	0.00	-343.29	14.08	0.00	-14.08	-357.38
NLC	0.00	0.00	0.00	6.35	0.00	-6.35	-6.35
SEMBCORP	372.03	0.00	-372.03	63.48	0.00	-63.48	-435.51
OSTRO Hiriyur	4.29	0.00	-4.29	7.80	0.00	-7.80	-12.09
JSW_RENEW_2	8.57	0.00	-8.57	0.00	0.00	0.00	-8.57
NTPC STATIONS-ER	0.00	0.00	0.00	0.05	0.00	-0.05	-0.05
ADHUNIK POWER LTD	99.75	0.00	-99.75	0.47	0.00	-0.47	-100.22
CHUZACHEN HEP	0.00	0.00	0.00	4.20	0.00	-4.20	-4.20
GMR KAMALANGA	45.23	0.00	-45.23	0.24	0.00	-0.24	-45.47
JITPL	241.52	0.00	-241.52	26.92	0.00	-26.92	-268.44
TEESTA HEP	0.00	0.00	0.00	31.53	0.00	-31.53	-31.53
DAGACHU	10.55	0.00	-10.55	0.00	0.00	0.00	-10.55
JORETHANG	1.19	0.00	-1.19	0.00	0.00	0.00	-1.19
NEPAL(NVVN)	0.00	86.40	86.40	0.00	163.24	163.24	249.64
TEESTA STG3	178.72	0.00	-178.72	0.00	0.00	0.00	-178.72
DIKCHU HEP	29.64	0.00	-29.64	9.97	0.00	-9.97	-39.61
TASHIDENG HEP	1.51	0.00	-1.51	0.00	0.00	0.00	-1.510
DGPCL Bhutan	0.00	0.00	0.00	0.00	48.33	48.33	48.33
NTPC STATIONS-NER	0.00	0.00	0.00	3.51	0.00	-3.51	-3.51
NEEPCO STATIONS	34.19	0.00	-34.19	39.72	0.00	-39.72	-73.91
ONGC PALATANA	0.00	0.00	0.00	25.34	0.00	-25.34	-25.34

Source: NLDC

* 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

Table-30: VOLUME AND CHARGES UNDER DSM (DAY-WISE), APRIL 2023

Date	Volume (MU)	All India Grid Charges (₹/kWh)		
		Minimum	Maximum	Average
1-Apr-23	66.76	2.22	11.00	4.38
2-Apr-23	67.73	2.01	6.25	3.79
3-Apr-23	61.74	2.45	7.36	4.45
4-Apr-23	60.61	2.70	9.46	4.64
5-Apr-23	61.33	2.63	10.00	4.81
6-Apr-23	60.76	2.71	10.00	5.48
7-Apr-23	62.14	2.50	10.00	5.62
8-Apr-23	62.03	2.62	10.00	6.24
9-Apr-23	63.45	2.33	10.00	5.74
10-Apr-23	65.12	2.87	10.00	6.99
11-Apr-23	72.79	3.05	10.00	7.63
12-Apr-23	64.24	2.87	10.00	7.20
13-Apr-23	63.22	2.87	10.00	7.44
14-Apr-23	66.16	2.81	10.00	7.65
15-Apr-23	70.17	2.91	10.00	7.60
16-Apr-23	66.44	2.81	10.02	6.87
17-Apr-23	68.18	2.68	10.69	7.61
18-Apr-23	71.83	2.70	10.00	8.07
19-Apr-23	82.27	2.70	10.00	8.03
20-Apr-23	74.77	2.66	10.07	7.88
21-Apr-23	75.94	2.82	10.13	7.82
22-Apr-23	77.66	2.70	10.00	6.76
23-Apr-23	81.02	1.79	10.00	4.20
24-Apr-23	70.73	2.00	10.00	5.24
25-Apr-23	71.03	2.00	10.00	5.24
26-Apr-23	73.86	2.63	10.00	4.52
27-Apr-23	77.79	2.81	9.86	4.29
28-Apr-23	76.41	2.82	9.87	4.16
29-Apr-23	79.28	2.50	9.87	4.01
30-Apr-23	83.40	1.61	9.86	3.30
Total	2098.81	1.61	11.00	5.92
<i>Source: NLDC</i>				
<i># Maximum/Minimum in the month</i>				

Table-31: VOLUME OF ELECTRICITY UNDER DRAWAL/OVER INJECTION (EXPORTED) UNDER DSM, APRIL 2023

Name of the Entity	Volume of Under Drawal (MUs)	% of Volume
RAJASTHAN	151.23	6.75
MP	115.59	5.16
TAMIL NADU	109.24	4.88
UTTAR PRADESH	108.29	4.83
GUJARAT	101.02	4.51
HARYANA	71.19	3.18
NHPC STATIONS	68.44	3.06
NTPC STATIONS-WR	67.44	3.01
NTPC STATIONS-NR	65.66	2.93
CHHATTISGARH	63.23	2.82
PUNJAB	62.91	2.81
DELHI	58.85	2.63
KARNATAKA	57.54	2.57
MAHARASHTRA	56.60	2.53
TELANGANA	53.14	2.37
ANDHRA PRADESH	49.24	2.20
NTPC STATIONS-SR	40.66	1.82
J & K	37.27	1.66
SASAN UMPP	33.49	1.49
DVC	30.49	1.36
NTPC STATIONS-ER	30.40	1.36
CHUKHA HEP	25.81	1.15
NEPAL(NVVN)	24.21	1.08
BIHAR	22.16	0.99
IGSTPS	20.34	0.91
JHARKHAND	19.94	0.89
ODISHA	19.77	0.88
AMPS Hazira	19.03	0.85
JINDAL STAGE-II	18.52	0.83
KAPP 3&4	18.48	0.83
UTTARAKHAND	17.38	0.78
NEEPCO STATIONS	17.17	0.77
NLC	15.47	0.69
ASSAM	15.05	0.67
BBMB	15.00	0.67
HIMACHAL PRADESH	14.88	0.66
PONDICHERRY	14.57	0.65
GIWEL_BHUJ	13.62	0.61
TALA HEP	12.58	0.56
DD&DNH	12.14	0.54
KERALA	11.61	0.52
LANKO_AMK	10.32	0.46
SBESS	9.30	0.42
ASEJTL_SLR	9.25	0.41
RKM POWER	8.96	0.40
AZURE43_SLR	8.80	0.39
JINDAL POWER	8.08	0.36
MAITHON POWER LTD	7.32	0.33
AVAADASN_SLR	7.27	0.32
CHANDIGARH	6.85	0.31
BALCO	6.84	0.31
NJPC	6.76	0.30
JAYPEE NIGRIE	6.58	0.29
WEST BENGAL	6.27	0.28
SKRPL	6.04	0.27
SIKKIM	6.03	0.27
ESSAR POWER	5.84	0.26
ACME_HEERGARH	5.83	0.26
TRIPURA	5.59	0.25
AVADARJHN_SLR	5.59	0.25

RENEW_BHUJ	5.59	0.25
MIZORAM	5.51	0.25
NPGC	5.46	0.24
ALFANAR_BHUJ	5.33	0.24
GOA	5.25	0.23
ARINSUM_RUMS	5.19	0.23
THARI_SLR	5.11	0.23
INOX_BHUJ	5.10	0.23
JITPL	4.86	0.22
MB POWER	4.60	0.21
OSTRO Hiriyur	4.49	0.20
AYANA_RP1	4.49	0.20
FORTUM2_PVGD	4.38	0.20
OSTRO	4.34	0.19
SBSR_SLR	4.32	0.19
SPRING_PUGALUR	4.30	0.19
RENEWURJA_SLR	4.18	0.19
AYANA_NPKUNTA	4.13	0.18
DB POWER	4.10	0.18
BRBCL,NABINAGAR	4.10	0.18
CLEAN_SLR	4.06	0.18
KURICHU HEP	4.02	0.18
SBG_NPK	4.01	0.18
ACME_RUMS	3.98	0.18
NTPC STATIONS-NER	3.92	0.18
RENEWSB	3.85	0.17
RPREL	3.72	0.17
RENEW_SR_SLR	3.72	0.17
ARUNACHAL PRADESH	3.67	0.16
RENEW_BHACHAU	3.67	0.16
NAGALAND	3.63	0.16
MAHINDRA_RUMS	3.57	0.16
AZURE41_SLR	3.56	0.16
NTPL	3.56	0.16
RAMPUR HEP	3.54	0.16
RENEW_SLR_BKN	3.53	0.16
ACME_SLR	3.52	0.16
EDEN_SLR	3.52	0.16
RENEWJH_SLR	3.46	0.15
AVIKIRAN	3.45	0.15
MANIPUR	3.45	0.15
DGPCL Bhutan	3.39	0.15
MSUPL_BHDL2	3.35	0.15
NETCL VALLUR	3.31	0.15
KARCHAM WANGTOO	3.18	0.14
RENEWSW_SLR	3.17	0.14
SB6_POKARAN	3.17	0.14
NTPC_ANTP	3.08	0.14
TATA_ANTP	3.03	0.14
ADY1_PVGD	3.00	0.13
RAIL	2.99	0.13
ABC_BHDL2	2.88	0.13
SB_SLR	2.86	0.13
ORANGE_TCN	2.79	0.12
MEGHALAYA	2.77	0.12
TEHRI	2.71	0.12
NSPCL	2.68	0.12
BETAM_TCN	2.66	0.12
AVAADA2_PVGD	2.50	0.11
ADANI_WIND	2.46	0.11
TRN ENERGY	2.32	0.10
YARROW_PVGD	2.29	0.10
SKS POWER	2.23	0.10

PARAM_PVGD	2.23	0.10
MRPL	2.22	0.10
KSK MAHANADI	2.21	0.10
CLEANSR_SLR	2.17	0.10
GIWEL_TCN	2.16	0.10
JHABUA POWER_MP	1.99	0.09
TEESTA HEP	1.96	0.09
TEESTA STG3	1.92	0.09
AZURE_SLR	1.88	0.08
ESPL_RADHANESDA	1.85	0.08
TATA_SLR	1.84	0.08
ACBIL	1.82	0.08
MYTRAH_TCN	1.79	0.08
SESPL	1.68	0.08
EMCO	1.67	0.07
RSTPS_FSPP	1.67	0.07
BANGLADESH	1.61	0.07
GRT_JPL	1.47	0.07
JSW RENEW_2	1.46	0.07
AZURE_PVGD	1.46	0.07
APRAAVA	1.45	0.06
DCPP	1.45	0.06
KOTESHWAR	1.43	0.06
RAP C	1.36	0.06
SHREE CEMENT	1.36	0.06
MANGDECHU HEP	1.36	0.06
MTPS II	1.29	0.06
IL&FS	1.28	0.06
RONGNICHU HEP	1.27	0.06
THERMAL POWERTECH	1.27	0.06
SEMBCORP	1.23	0.06
POWERICA	1.21	0.05
AZURE34_SLR	1.21	0.05
NAPP	1.20	0.05
TATA_GREEN	1.12	0.05
AZURE_MAPLE_SLR	1.11	0.05
RANGANADI HEP	1.10	0.05
GSECL_Radhanesda	1.09	0.05
AVAADA1_PVGD	1.09	0.05
ONGC PALATANA	1.07	0.05
FORTUM1_PVGD	0.98	0.04
ARERJL_SLR	0.94	0.04
ADANI GREEN	0.92	0.04
DAGACHU	0.91	0.04
TPREL_RADHANESDA	0.85	0.04
AKSP_ANTP	0.82	0.04
KREDL_PVGD	0.81	0.04
CHUZACHEN HEP	0.78	0.03
COASTGEN	0.78	0.03
RANGIT HEP	0.77	0.03
ABSP_ANTP	0.76	0.03
CGPL	0.70	0.03
RENEW_SLR	0.66	0.03
RAP B	0.65	0.03
DGEN MEGA POWER	0.63	0.03
AHSP_ANTP	0.62	0.03
DIKCHU HEP	0.62	0.03
GIPCL_RADHANESDA	0.62	0.03
JORETHANG	0.61	0.03
RGPPL	0.60	0.03
PARE HEP	0.60	0.03
ARS_PVGD	0.59	0.03
TASHIDENG HEP	0.54	0.02

AKS_PVGD	0.54	0.02
AD HYDRO	0.54	0.02
SPRNG_NPKUNTA	0.52	0.02
KSMPL_SLR	0.52	0.02
GMR KAMALANGA	0.51	0.02
LANCO BUDHIL	0.49	0.02
SAINJ HEP	0.48	0.02
FRV_NPK	0.45	0.02
AZURE_ANTP	0.45	0.02
RENEW_PVGD	0.43	0.02
TATA_PVGD	0.38	0.02
ADHUNIK POWER LTD	0.35	0.02
FRV_ANTP	0.35	0.02
DHARIWAL POWER	0.32	0.01
SIMHAPURI	0.32	0.01
NFF	0.31	0.01
SORANG HEP	0.28	0.01
SINGOLI BHATWARI HEP	0.26	0.01
SRSSFPL	0.24	0.01
HVDC CHAMPA	0.23	0.01
BARC	0.19	0.01
VINDHYACHAL HVDC	0.17	0.01
SBG_PVGD	0.16	0.01
LOKTAK	0.14	0.01
DOYANG HEP	0.10	0.005
NEP	0.09	0.004
NETRA WIND	0.07	0.003
HVDC PUS	0.06	0.003
HVDC RAIGARH	0.03	0.001
HVDC ALPD	0.03	0.001
Railways_ER ISTS	0.02	0.001
BHADRAVATHI HVDC	0.01	0.0003
Total	2240.07	100.00
Volume Exported by top 5 Regional Entities	585.37	26.13

Table-32: VOLUME OF ELECTRICITY OVER DRAWAL/ UNDER INJECTION (IMPORTED) UNDER DSM, APRIL 2023

Name of the Entity	Volume of Over Drawal (MUs)	% of Volume
NTPC STATIONS-NR	114.40	5.84
MAHARASHTRA	102.52	5.24
NTPC STATIONS-WR	100.57	5.14
WEST BENGAL	92.63	4.73
NTPC STATIONS-ER	75.87	3.88
GUJARAT	65.89	3.37
BIHAR	56.62	2.89
ODISHA	53.08	2.71
MANGDECHU HEP	51.45	2.63
KARNATAKA	50.43	2.58
TELANGANA	49.98	2.55
UTTAR PRADESH	48.28	2.47
NTPC STATIONS-SR	44.50	2.27
ANDHRA PRADESH	43.55	2.22
HARYANA	34.89	1.78
J & K	33.53	1.71
RAJASTHAN	32.06	1.64
GIWEL_BHUI	30.11	1.54
PUNJAB	28.52	1.46
JHARKHAND	27.06	1.38
UTTARAKHAND	23.54	1.20
AMPS Hazira	23.22	1.19
MP	18.93	0.97
DVC	18.64	0.95
ASSAM	16.91	0.86
NEP	16.49	0.84
HIMACHAL PRADESH	16.10	0.82
CHHATTISGARH	15.18	0.78
CHUKHA HEP	14.85	0.76
OSTRO Hiriya	14.76	0.75
DGPCL Bhutan	14.71	0.75
SBESS	14.69	0.75
NLC	13.51	0.69
IGSTPS	13.46	0.69
ORANGE_TCN	13.25	0.68
CGPL	13.23	0.68
TAMIL NADU	13.18	0.67
OSTRO	13.10	0.67
MYTRAH_TCN	12.60	0.64
RENEW_BHACHAU	12.45	0.64
GIWEL_TCN	12.16	0.62
GOA	12.13	0.62
INOX_BHUI	11.35	0.58
TRIPURA	11.30	0.58
AVAADASN_SLR	11.29	0.58
RENEW_BHUI	11.14	0.57
NHPC STATIONS	10.91	0.56
ALFANAR_BHUI	10.40	0.53
SKRPL	9.48	0.48
ARUNACHAL PRADESH	9.39	0.48
MEGHALAYA	8.59	0.44
KERALA	8.55	0.44
BETAM_TCN	8.40	0.43
TALA HEP	7.46	0.38
NETCL VALLUR	7.28	0.37
BANGLADESH	6.65	0.34
AVADARJHN_SLR	6.65	0.34
BRBCL,NABINAGAR	6.26	0.32
CLEAN_SLR	6.19	0.32
AZURE43_SLR	6.01	0.31

TATA_SLR	5.81	0.30
ABC_BHDL2	5.58	0.29
AVIKIRAN	5.57	0.28
NEPAL(NVVN)	5.33	0.27
ASEJTL_SLR	5.20	0.27
KURICHU HEP	5.19	0.27
TATA_GREEN	5.16	0.26
THERMAL POWERTECH	4.95	0.25
NPGC	4.90	0.25
SB6_POKARAN	4.81	0.25
THAR1_SLR	4.66	0.24
COASTGEN	4.56	0.23
AZURE_MAPLE_SLR	4.51	0.23
TATA_ANTP	4.44	0.23
ARERJL_SLR	4.44	0.23
NJPC	4.42	0.23
RAIL	4.39	0.22
EDEN_SLR	4.35	0.22
RENEWJH_SLR	4.34	0.22
RENEW_SR_SLR	4.31	0.22
SEMBCORP	4.31	0.22
RENEWSW_SLR	4.27	0.22
NTPL	4.25	0.22
JINDAL STAGE-II	4.04	0.21
SIMHAPURI	4.03	0.21
AZURE41_SLR	4.01	0.21
AYANA_RP1	3.99	0.20
RENEWSB	3.92	0.20
SIKKIM	3.91	0.20
TEESTA STG3	3.91	0.20
CHANDIGARH	3.90	0.20
ADANI_WIND	3.88	0.20
RKM POWER	3.83	0.20
DELHI	3.83	0.20
BALCO	3.80	0.19
NTPC STATIONS-NER	3.73	0.19
RENEWURJA_SLR	3.66	0.19
MTPS II	3.59	0.18
JSW_RENEW_2	3.57	0.18
JINDAL POWER	3.51	0.18
JITPL	3.50	0.18
MRPL	3.39	0.17
ACBIL	3.38	0.17
SESP	3.30	0.17
MSUPL_BHDL2	3.24	0.17
GRT_JPL	3.19	0.16
ACME_SLR	3.19	0.16
MAHINDRA_RUMS	3.11	0.16
RENEW_SLR_BKN	3.09	0.16
DGEN MEGA POWER	3.04	0.16
AZURE_SLR	3.01	0.15
ADY1_PVGD	2.96	0.15
MB POWER	2.92	0.15
MANIPUR	2.91	0.15
ESSAR POWER	2.89	0.15
CLEANSPL_SLR	2.89	0.15
NAPP	2.79	0.14
TEHRI	2.73	0.14
ACME_HEERGARH	2.65	0.14
ACME_RUMS	2.61	0.13
ESPL_RADHANESDA	2.35	0.12
RSTPS_FSPP	2.33	0.12
DIKCHU HEP	2.22	0.11

ARINSUM_RUMS	2.18	0.11
SB_SLR	2.18	0.11
JHABUA POWER_MP	2.14	0.11
YARROW_PVGD	2.12	0.11
MAITHON POWER LTD	2.12	0.11
Railways_ER ISTS	2.12	0.11
NEEPCO STATIONS	2.10	0.11
AVAADA1_PVGD	2.04	0.10
POWERICA	1.98	0.10
AYANA_NPKUNTA	1.94	0.10
SBG_NPK	1.89	0.10
SBSR_SLR	1.89	0.10
DB POWER	1.86	0.09
APRAAVA	1.84	0.09
SHREE CEMENT	1.81	0.09
GMR KAMALANGA	1.81	0.09
ADHUNIK POWER LTD	1.73	0.09
AZURE34_SLR	1.73	0.09
SPRING_PUGALUR	1.67	0.09
RPREL	1.65	0.08
DD&DNH	1.64	0.08
FORTUM2_PVGD	1.57	0.08
SPRNG_NPKUNTA	1.48	0.08
KARCHAM WANGTOO	1.39	0.07
SASAN UMPP	1.38	0.07
NTPC_ANTP	1.37	0.07
RAP C	1.35	0.07
TPREL_RADHANESDA	1.35	0.07
KSK MAHANADI	1.32	0.07
GIPCL_RADHANESDA	1.30	0.07
NSPCL	1.24	0.06
PONDICHERRY	1.23	0.06
KSMPL_SLR	1.11	0.06
GSECL_Radhanesda	1.08	0.06
RANGANADI HEP	1.06	0.05
PARAM_PVGD	1.04	0.05
AVAADA2_PVGD	0.99	0.05
RAP B	0.96	0.05
EMCO	0.95	0.05
SKS POWER	0.90	0.05
RAMPUR HEP	0.87	0.04
RGPPL	0.86	0.04
TRN ENERGY	0.84	0.04
ONGC PALATANA	0.82	0.04
FORTUM1_PVGD	0.80	0.04
AZURE_PVGD	0.80	0.04
RENEW_SLR	0.78	0.04
ADANI GREEN	0.70	0.04
TATA_PVGD	0.69	0.04
FRV_ANTP	0.67	0.03
RENEW_PVGD	0.64	0.03
CHUZACHEN HEP	0.64	0.03
KAPP 3&4	0.60	0.03
NAGALAND	0.58	0.03
BBMB	0.57	0.03
IL&FS	0.53	0.03
AKS_PVGD	0.52	0.03
AHSP_ANTP	0.50	0.03
ARS_PVGD	0.50	0.03
RONGNICHU HEP	0.50	0.03
DHARIWAL POWER	0.49	0.03
SAINJ HEP	0.49	0.02
JAYPEE NIGRIE	0.46	0.02

AKSP_ANTP	0.46	0.02
MIZORAM	0.44	0.02
KREDL_PVGD	0.43	0.02
FRV_NPK	0.39	0.02
LANKO KONDAPALLI	0.35	0.02
PARE HEP	0.35	0.02
MEENAKSHI	0.35	0.02
ABSP_ANTP	0.33	0.02
AZURE_ANTP	0.32	0.02
SBG_PVGD	0.32	0.02
NFF	0.31	0.02
KOTESHWAR	0.24	0.01
LANCO BUDHIL	0.22	0.01
HVDC RAIGARH	0.22	0.011
DOYANG HEP	0.21	0.011
DCPP	0.16	0.008
RANGIT HEP	0.14	0.007
BARC	0.13	0.007
BHADRAVATHI HVDC	0.12	0.006
LOKTAK	0.11	0.006
SORANG HEP	0.10	0.005
SINGOLI BHATWARI HEP	0.09	0.005
AD HYDRO	0.09	0.004
HVDC ALPD	0.08	0.004
DAGACHU	0.07	0.004
TASHIDENG HEP	0.07	0.004
JORETHANG	0.05	0.003
HVDC PUS	0.04	0.002
TEESTA HEP	0.03	0.002
NETRA WIND	0.02	0.001
SRSSFPL	0.01	0.0003
HVDC CHAMPA	0.00	0.0001
LANKO_AMK	0.001	0.0001
TOTAL	1957.56	100.00
Volume Imported by top 5 Regional Entities	485.98	24.83

Table-33: VOLUME AND PRICE OF RENEWABLE ENERGY CERTIFICATES (RECs) TRANSACTED THROUGH POWER EXCHANGES, APRIL 2023

Sr. No	Details of REC Transactions	Through Power Exchange			Bilateral through Traders
		IEX	PXIL	HPX	
1	Volume of Buy Bid	199165	149025	27943	-
2	Volume of Sell Bid	2896956	454926	37910	-
3	Ratio of Buy Bid to Sell Bid Volume	0.07	0.33	0.74	-
4	Traded Volume (MWh)	199164	149025	27943	111567
5	Weighted average Price (₹/MWh)	1000.00	1000.00	1000.00	981.37

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, APRIL 2023

Sr. No.	Neighbouring Country	Volume (MU)			Weighted Average Price (₹/kWh)	
		Sale	Purchase	Net*	Sale	Purchase
1	Nepal	0.00	181.80	181.80	-	5.07
2	Bhutan	0.00	48.33	48.33	-	3.24
	Total	0.00	230.13	230.13	-	-

Source: IEX

* 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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