

Monthly Report on Short-term Transactions of Electricity in India

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Abbreviations

Abbreviation

ABSP_ANTP
ACBIL
ACP
ACV
ACME_SLR
ACME_RUMS
ADANI GREEN
ADANIHB_SLR
ADANI_SLR 4
ADANIHB_WIND
ADY1_PVGD
ADY2_PVGD
ADY3_PVGD
ADY6_PVGD
ADY10_PVGD
ADY13_PVGD
AGEMPL BHUJ
AHEJOL_S_FTG2
AHEJOL_W_FTG2
AHEJ2L_SOLAR
AHEJ3L_SOLAR
AHEJ4L_SOLAR
AHEJ4L_WIND
AHSP_ANTP
AKS_PVGD
AKSP_ANTP
ALFANAR_BHUJ
AMPS Hazira
APTEL
ARERJL_SLR
ARINSUM_RUMS
ARS_PVGD
ARTPP
ASEJTL_SLR
AVAADA1_PVGD
AVAADA2_PVGD
AVADARJHN_SLR
AYANA_NPKUNTA
AZURE_ANTP
AZURE_PVGD
AZURE_SLR
AZURE34_SLR
AZURE43_SLR
BALCO
BARC
BASOCHHU HEP
BBMB
BETAM_TCN
BHADRAVATHI HVDC
BRBCL
CEA
CERC

Expanded Version

Acme Bhiwadi Solar Power Private Limited, Anantpur
ACB (India) Limited
Area Clearing Price
Area Clearing Volume
ACME Solar Power Project
Acme Rewa Ultra Mega Solar Project
Adani Green Energy Limited
Adani Hybrid Energy Jaisalmer One Limited (Solar)
Adani Solar Energy Four Private Limited
Adani Hybrid Energy Jaisalmer One Limited (Wind)
Adyah Solar Energy Pvt Ltd., Block 1 Pavagada Solar Park
Adyah Solar Energy Pvt Ltd., Block 2 Pavagada Solar Park
Adyah Solar Energy Pvt Ltd., Block 3 Pavagada Solar Park
Adyah Solar Energy Pvt Ltd., Block 6 Pavagada Solar Park
Adyah Solar Energy Pvt Ltd., Block 10 Pavagada Solar Park
Adyah Solar Energy Pvt Ltd., Block 13 Pavagada Solar Park
Adani Green Energy (MP) Ltd.,Bhuj
Adani Hybrid Energy Jaisalmer One Limited (SOLAR)
Adani Hybrid Energy Jaisalmer One Limited (WIND)
Adani Hybrid Energy Jaisalmer Two Limited (Solar)
Adani Hybrid Energy Jaisalmer Three Limited (Solar)
Adani Hybrid Energy Jaisalmer Four Limited-Hybrid Solar
Adani Hybrid Energy Jaisalmer Four Limited-Hybrid Wind
Acme Hisar Solar Power Private Limited,Anantpur
ACME Kurukshetra Solar Energy Pvt. Ltd
Acme Karnal Solar Power Private Limited,Anantpur
Alfanar Group Wind Project, Bhuj, Gujarat
Arcelor Mittal Nippon Steel, Hazira
Appellate Tribunal for Electricity
Adani Renewable Energy Park Rajasthan Ltd.
Solenergi RewaUltraMega Solar Project
ACME REWARI Solar Power Pvt Ltd.
Adani Power Limited - Raipur TPP
Adani Solar Energy Jodhpur Two Ltd.
Avaada Solar Energy Private Ltd., Pavagada Project 1
Avaada Solar Energy Private Ltd., Pavagada Project 2
Avaada Rjhn Private Limited_Solar
Ayana Power, NP Kunta
Azure Power,Anantpur
Azure Power,Pavagada
Azure Power Solar Power Project
Azure Power 34 Pvt. Ltd. Solar Power Project
Azure Power Forty Three Private Limited
Bharat Aluminum Company Limited
Bhabha Atomic Research Centre
Basochhu Hydropower Plant Bhutan
Bhakra Beas Management Board
Betam Wind Energy Private Limited, Tuticorin
Bhadravathi High Voltage Direct Current Link
Bhartiya Rail Bijlee Company Limited
Central Electricity Authority
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
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
GSECL P-II	GSECL Raghnesda Solar Park (Phase-II)
G-TAM	Green Term Ahead Market
HPX	Hindustan Power Exchange Limited
HP-DAM	High Price Day Ahead Market
HP-TAM	High Price Term 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
KBUNL	Kanti Bijlee Utpadan Nigam Limited
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
MAHOBASLR	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
MSEPL	Masaya Solar Energy Private Limited
MTPS	TATA Power Mundra Thermal Power Station
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
NREL_DAYAPAR (W)	NREL-Dayapar Wind
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
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
RENEW_SR_SLR	Renew Surya Ravi Private Limited (Solar)
RENEW_ROSHNI	Renew Surya Roshni Private Limited Koppal PS
RENEWJH_SLR	Renew Solar Energy (Jharkhand Three) Private Limited
RENEWURJA_SLR	ReNew Solar Urja Private Limited
RGPL_IR	Ratnagiri Gas and Power Private Ltd., supply to Indian Railways
RGPL_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
SUL	Sikkim Urja Limited
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
TPSL	TP Saurya Limited
VINDHYACHAL HVDC	Vindhyachal High Voltage Direct Current Link
WA	Weighted Average
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 **November 2023** is presented in the following sections.

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

2.1. During November 2023, total electricity generation, excluding generation from renewable and captive power plants in India, was 115019.46 MU (Table-1). Of the total electricity generation, 13.01% was transacted through short-term and DSM, comprising of 6.73% through power exchanges {Day Ahead Market (DAM) (including G-DAM) and Real Time Market (RTM)}, followed by 4.39% through bilateral¹ (through Traders and Term-Ahead contracts on power exchanges, and directly between distribution companies), and 1.89% through DSM (Table-1 & Figure-1).

2.2. Of the total short-term transactions and DSM volume (14961.41 MU), 51.74% was transacted through power exchanges {DAM (including G-DAM & HP-DAM) and RTM}, followed by 33.75% through bilateral (27.62% through Traders and Term-Ahead contracts on

¹ With change in the regime on implementation of GNA Regulations from 1st October 2023, the volume reported here is not strictly comparable to the volumes in previous months. Some discrepancies were identified by CERC in the data provided by NLDC which prompted further validation. The volume herein is computed after verification with the volumes reported by the Trading Licensees and the Power Exchanges, and are subject to further revision. The Commission has directed NLDC, vide letter dated 05.01.2024, to make necessary provisions to differentiate the type of transactions under GNA and T-GNA at the earliest. In the interim, some of the tables in the monthly reports have been temporarily discontinued.

power exchanges, and 6.13% directly between distribution companies), and 14.51% through DSM (Table-1 & Figure-2). The daily volume of power exchange transactions is shown in Table-26. Figure-4 shows the daily volume trend for power exchange transactions and DSM volume.

2.3. Of the total volume of electricity transacted through power exchanges, 61.22% of the volume was transacted in DAM (including G-DAM & HP-DAM), followed by 26.84% in RTM and 11.94% in Term Ahead Market (TAM) (including G-TAM & HP-TAM) (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 54 trading licensees as of November 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., Adani Enterprises Ltd., Tata Power Trading Company (P) Ltd. and Manikaran Power Ltd., had a share of 80.11% 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 0.1700 for the month of November 2023, which indicates moderate concentration of market power (Table-2).

2.6. The volume of electricity transacted in the DAM of IEX, PXIL and HPX was 5196.16 MU, 3.12 MU and 2.15 MU, respectively. The volume of total buy bids and sell bids was 7947.14 MU and 9552.31 MU, respectively in IEX, 28.35 MU and 64.62 MU, respectively in PXIL, while the same was 6.35 MU and 2.15 MU, respectively in HPX.

2.7. Of the total volume of electricity transacted in the DAM of IEX, the volume sold by the neighbouring countries of India was 277.10 MU, while no volume was purchased, under

the Cross Border Trade of electricity through power exchange (Table-33(a)). 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 180.27 MU, while no electricity was transacted in the G-DAM of PXIL and HPX. The volume of total buy bids and sell bids was 1464.75 MU and 241.48 MU, respectively, in IEX. No bids were received in PXIL and HPX.

2.9. No volume was traded in the HP-DAM of IEX, PXIL or HPX. The volume of total buy bids and sell bids was 1.71 MU and 254.36 MU, respectively in IEX. No bids were received in PXIL and HPX.

2.10. The volume of electricity transacted in the RTM of IEX and HPX was 2359.07 MU and 0.10 MU, respectively. The volume of total buy bids and sell bids was 3557.28 MU and 5738.33 MU, respectively in IEX, while the same was 0.20 MU and 0.10 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. Of the total volume of electricity transacted in the RTM of IEX, the volume sold by the neighbouring countries of India was 10.53 MU, while no volume was purchased, under the Cross Border Trade of electricity through power exchange (Table-33(b)). No Cross Border transaction of electricity was undertaken through PXIL and HPX.

2.12. The volume of electricity transacted in the TAM of IEX, PXIL and HPX was 679.13 MU, 226.67 MU and 129.02 MU, respectively (Table-9, Table-10 & Table-11). The volume of electricity transacted in the Green Term Ahead Market (G-TAM) of IEX and HPX was 7.14 MU and 7.52 MU, respectively. No volume was traded in G-TAM of PXIL (Table-12, Table-13 & Table-14).

2.13. No volume was traded in the High Price Term Ahead Market (HP-TAM) of IEX, PXIL and HPX (Table-15, Table-16 & Table-17).

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 ₹3.47/kWh, ₹8.43/kWh and ₹6.40/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 ₹6.46/kWh and ₹6.12/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 ₹2.00/kWh, ₹10.00/kWh and ₹4.16/kWh, respectively. These prices in the DAM of PXIL were ₹1.00/kWh, ₹10.00/kWh and ₹9.36/kWh respectively. The minimum, maximum and weighted average prices for the electricity transacted in the DAM of HPX were ₹10.00/kWh, ₹10.00/kWh and ₹10.00/kWh respectively (Table-5). The minimum, maximum and weighted average prices for the electricity transacted in the G-DAM of IEX were ₹3.25/kWh, ₹10.00/kWh and ₹4.69/kWh, respectively (Table-6). The minimum, maximum and weighted average prices for the electricity transacted in the RTM of IEX were ₹0.70/kWh, ₹10.00/kWh and ₹3.93/kWh, respectively. The minimum, maximum and weighted average prices for the electricity transacted in the RTM of HPX were ₹10.00/kWh, ₹10.00/kWh and ₹10.00/kWh respectively (Table-8). The weighted average price of electricity transacted in the TAM of IEX, PXIL and HPX was ₹6.89/kWh, ₹8.58/kWh and ₹8.22/kWh, respectively (Table-9, Table-10 and Table-11). The weighted average price of electricity transacted in the G-TAM of IEX and HPX was ₹6.39/kWh and ₹5.36/kWh, respectively (Table-12, Table-13 and Table-14). No electricity was transacted in G-DAM of PXIL and HPX, in RTM of PXIL, in HP-DAM and HP-TAM of all power exchanges and in G-TAM of PXIL.

3.3. **DSM Charges:** The minimum, maximum and average charge under DSM was ₹2.00/kWh, ₹10.00/kWh and ₹4.36/kWh, respectively (Table-29).

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-27(a), (b) & (c) and Figure-7. The daily volume and charges under DSM are shown in Table-29.

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 ₹0.028/kWh.

5. Volume of Short-term Transactions of Electricity (Regional Entity²-Wise)

5.1. Of the total DAM transactions at power exchanges, the top 5 regional entities/states sold 36.85% of the volume, and these were Chhattisgarh, Uttar Pradesh, Adani Power Limited - Raipur TPP, DB Power and Odisha (Table-18). The top 5 regional entities/states purchased 67.52% of the volume, and these were Maharashtra, Gujarat, Telangana, Andhra Pradesh and Jammu & Kashmir (Table-19).

5.2. Of the total G-DAM transactions at power exchanges, the top 5 regional entities/states sold 51.07% of the volume, and these were Adani Wind Energy, Adani Solar Energy Jodhpur Two Ltd., Ostro Energy Private Limited Hiriyur, Renew Surya Ravi Private Limited (Solar) and Singoli-Bhatwari Hydroelectric Project Uttarakhand (Table-20). The top 5 regional entities/states purchased 81.81% of the volume, and these were Arcelor Mittal Nippon Steel Hazira, Tamil Nadu, Bharat Aluminum Company Limited, Delhi and Rajasthan (Table-21).

5.3. No volume was traded in HP-DAM of all three power exchanges.

5.4. Of the total RTM transactions at power exchanges, the top 5 regional entities/states sold 47.79% of the volume, and these were Bihar, Rajasthan, Madhya Pradesh, Uttar Pradesh and NTPC Stations (Eastern Region) (Table-22). The top 5 regional entities/states purchased 59.41% of the volume, and these were Telangana, Maharashtra, Andhra Pradesh, Jammu & Kashmir and Kerala (Table-23).

5.5. The total volume of net transactions through power exchanges (Regional entity-wise), is shown in Table-24 & 28. The top 5 electricity selling regional entities/states of power exchange transactions were Bihar, Chhattisgarh, Rajasthan, Adani Power Limited - Raipur TPP and DB Power. The top 5 electricity purchasing regional entities/states of power exchange transactions were Maharashtra, Telangana, Andhra Pradesh, Gujarat and Jammu & Kashmir.

² 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.

5.6. Of the total under-drawal/ over-injection volume under DSM in November 2023, the top 5 regional entities/states accounted for 28.96% of the volume, and these were NTPC Stations (Eastern Region), Rajasthan, Madhya Pradesh, NTPC Stations (Southern Region) and Gujarat (Table-30). The top 5 regional entities/states under DSM accounted for 23.23% of the total over-drawal/ under-injection volume, and these were NTPC Stations (Eastern Region), NTPC Stations (Northern Region), West Bengal, NTPC Stations (Western Region) and NTPC Stations (Southern Region) (Table-31).

6. Congestion³ 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”⁴.

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. Congestion was not experienced during the month of November 2023 (Table-25).

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

³ “Congestion” means a situation where the demand for transmission capacity exceeds the available transfer capability

⁴ “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.

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 November 2023 are shown in Table-32. The market clearing volume of RECs transacted on IEX, PXIL and HPX was 754970, 594426 and 205, respectively. The weighted average market clearing price of these RECs was ₹375/MWh in IEX, ₹375/MWh in PXIL and ₹450/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, 0.11 and 0.09 in IEX, PXIL and HPX, respectively.

7.6. The volume of RECs transacted through Trading Licensees in November 2023 was 465342. The weighted average trade price for the RECs transacted through traders was ₹360/MWh.

8. Inferences:

- a) The percentage of short-term transactions of electricity and DSM volume to total electricity generation was 13.01%.
- b) Of the total short-term transactions and DSM volume (14961.41 MU), 51.74% was transacted through power exchanges {DAM (including G-DAM & HP-DAM) and RTM}, followed by 33.75% through bilateral (27.62% through Traders and Term-Ahead

contracts on power exchanges, and 6.13% directly between distribution companies), and 14.51% through DSM.

- c) Of the total volume of electricity transacted through power exchanges, 61.22% of the volume was transacted in DAM (including G-DAM & HP-DAM), followed by 26.84% in RTM and 11.94% in Term Ahead Market (TAM) (including G-TAM & HP-TAM).
- d) The top 5 trading licensees had a share of 80.11% 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 0.1700, indicating moderate concentration of market power.
- f) The weighted average sale price of electricity transacted through trading licensees was ₹6.40/kWh.
- g) The weighted average price of electricity transacted in DAM of IEX, PXIL and HPX was ₹4.16/kWh, ₹9.36/kWh and ₹10.00/kWh. The weighted average price of electricity transacted in G-DAM of IEX was ₹4.69/kWh, while no electricity was transacted in G-DAM of PXIL and HPX. No volume was traded in HP-DAM. The weighted average price of electricity transacted in RTM of IEX and HPX was ₹3.93/kWh and ₹10.00/kWh respectively, while no electricity was transacted in RTM of PXIL.
- h) The weighted average price of electricity transacted in TAM of IEX, PXIL and HPX was ₹6.89/kWh, ₹8.58/kWh and ₹8.22/kWh, respectively. The weighted average price of electricity transacted in G-TAM of IEX and HPX was ₹6.39/kWh and ₹5.36/kWh, respectively, while no electricity was transacted in G-TAM of PXIL. No volume was traded in HP-TAM in any of the power exchanges.
- i) The average charge under DSM was ₹4.36/kWh.
- j) The weighted average trading margin charged by the trading licensees for bilateral transactions was ₹0.028/kWh.
- k) The top 5 electricity selling regional entities/states of power exchange transactions were Bihar, Chhattisgarh, Rajasthan, Adani Power Limited - Raipur TPP and DB Power. The

top 5 electricity purchasing regional entities/states of power exchange transactions were Maharashtra, Telangana, Andhra Pradesh, Gujarat and Jammu & Kashmir.

- l) The top 5 under-drawing/ over-injecting regional entities/states under DSM were NTPC Stations (Eastern Region), Rajasthan, Madhya Pradesh, NTPC Stations (Southern Region) and Gujarat. The top 5 over-drawing/ under-injecting regional entities/states under DSM were NTPC Stations (Eastern Region), NTPC Stations (Northern Region), West Bengal, NTPC Stations (Western Region) and NTPC Stations (Southern Region).
- m) During the month of November 2023, no congestion was experienced in power exchange transactions.
- n) The market clearing volume of RECs transacted on IEX, PXIL and HPX was 754970, 594426 and 205, respectively. The weighted average market clearing price of these RECs was ₹375/MWh in IEX, ₹375/MWh in PXIL and ₹450/MWh in HPX. The volume of RECs transacted through Trading Licensees in November 2023 was 465342. The weighted average trade price for the RECs transacted through traders was ₹360/MWh.

Table-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY AND DSM (ALL INDIA), NOVEMBER 2023				
Sr. No	Transaction	Volume (MU)	% to short-term transactions and DSM Volume	% to Total Generation
A	Short-term transactions			
1	Bilateral*	5049.66	33.75	4.39
	(i) Through Traders and PXs	4132.89	27.62	3.59
	(ii) Direct	916.77	6.13	0.80
2	Through Power Exchanges	7740.86	51.74	6.73
	(i) IEX			
	(a) DAM	5196.16	34.73	4.52
	(b) RTM	2359.07	15.77	2.05
	(c) GDAM	180.27	1.20	0.16
	(d) HP-DAM	0.00	0.00	0.00
	(ii) PXIL			
	(a) DAM	3.12	0.02	0.00
	(b) RTM	0.00	0.00	0.00
	(c) GDAM	0.00	0.00	0.00
	(d) HP-DAM	0.00	0.00	0.00
	(ii) HPX			
	(a) DAM	2.15	0.01	0.002
	(b) RTM	0.10	0.001	0.0001
	(c) GDAM	0.00	0.00	0.00
	(d) HP-DAM	0.00	0.00	0.00
B	Through DSM	2170.89	14.51	1.89
Total Short-term transactions and DSM		14961.41		13.01
Total Generation		115019.46		-

Source: NLDC

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

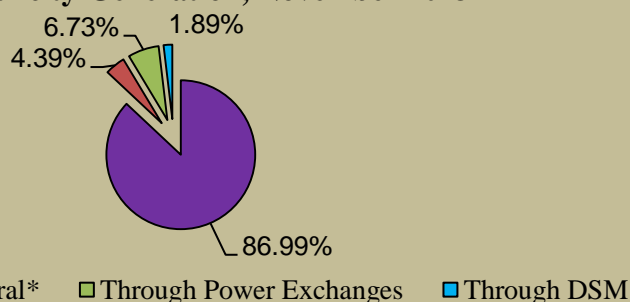
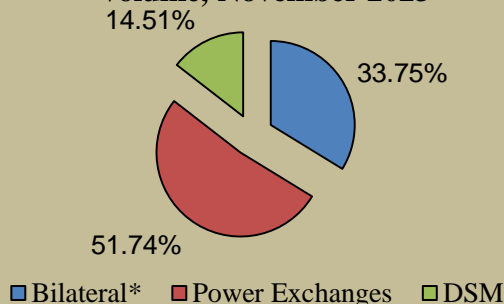


Figure-2: Volume of Short-term Transactions of Electricity and DSM Volume, November 2023



* With change in the regime on implementation of GNA Regulations from 1st October 2023, the volume reported here is not strictly comparable to the volumes in previous months. Some discrepancies were identified by CERC in the data provided by NLDC which prompted further validation. The volume herein is computed after verification with the volumes reported by the Trading Licensees and the Power Exchanges, and are subject to further revision. The Commission has directed NLDC, vide letter dated 05.01.2024, to make necessary provisions to differentiate the type of transactions under GNA and T-GNA at the earliest.

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

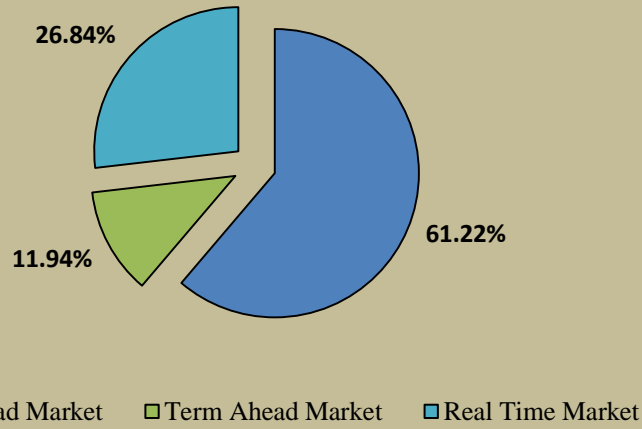


Figure-4: Volume of Transactions on Power Exchange and DSM Volume, November 2023 (Day-wise)

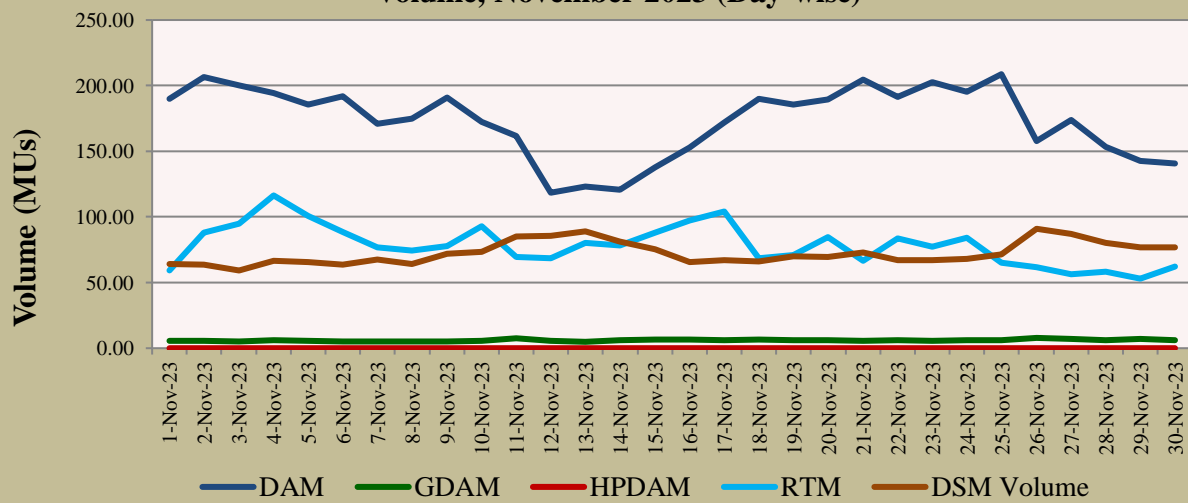


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, NOVEMBER 2023		
Sr. No	Name of the Trading Licensee	% Share in total Volume traded by Trading Licensees
1	PTC India Ltd.	29.63
2	NTPC Vidyut Vyapar Nigam Ltd.	20.96
3	Adani Enterprises Ltd.	10.88
4	Tata Power Trading Company (P) Ltd.	10.55
5	Manikaran Power Ltd.	8.10
6	Arunachal Pradesh Power Corporation (P) Ltd	7.74
7	GMR Energy Trading Ltd.	4.53
8	Gita Power & Infrastructure Private Limited	1.85
9	JSW Power Trading Company Ltd	1.13
10	Instinct Infra & Power Ltd.	1.11
11	RPG Power Trading Company Ltd.	0.92
12	Kreate Energy (I) Pvt. Ltd.	0.58
13	NLC India Ltd.	0.32
14	Statkraft Markets Pvt. Ltd.	0.28
15	Saranyu Power Trading Private Limited	0.24
16	Kundan International Pvt. Ltd.	0.19
17	Greenko Energies Pvt Ltd	0.17
18	Ideal Energy Solution Pvt. Ltd.	0.15
19	Abja Power Private Limited	0.11
20	Instant Venture Pvt. Ltd.	0.11
21	Adarsh Stainless Pvt. Ltd.	0.07
22	Powerfull Energy Trading Pvt. Ltd.	0.07
23	Energyedge Power Trading Pvt. Ltd.	0.07
24	Refex Industries Ltd.	0.06
25	SJVN Ltd.	0.05
26	Customized Energy Solutions India (P) Ltd.	0.04
27	Shubheksha Advisors Pvt. Ltd.	0.03
28	Shree Cement Ltd.	0.03
29	Phillip Commodities India (P) Ltd.	0.02
30	Shell Energy Marketing and Trading India Pvt. Ltd.	0.01
31	Saini Power Transactor	0.001
TOTAL		100.00%
Top 5 trading licensees		80.11%
Herfindahl-Hirschman Index		0.1700
<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>		

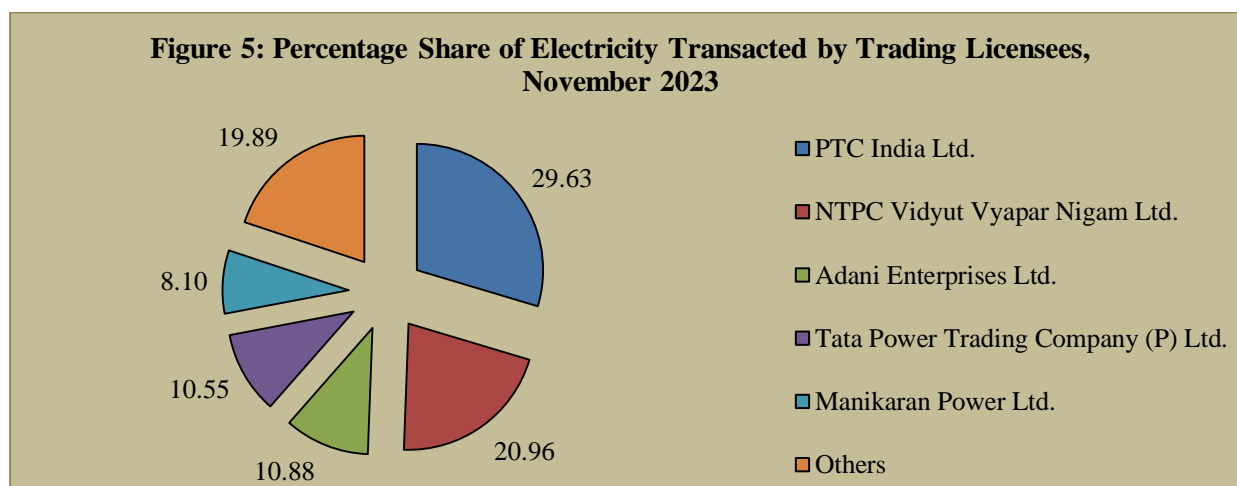


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, NOVEMBER 2023

Sr.No	Item	Sale Price of Traders (₹/kWh)
1	Minimum	3.47
2	Maximum	8.43
3	Weighted Average	6.40

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), NOVEMBER 2023

Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	6.46
2	PEAK	-
3	OFF PEAK	6.12

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED IN DAY AHEAD MARKET THROUGH POWER EXCHANGES, NOVEMBER 2023

Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)	Price in HPX (₹/kWh)
1	Minimum	2.00	1.00	10.00
2	Maximum	10.00	10.00	10.00
3	Weighted Average	4.16	9.36	10.00

Source: IEX, PXIL and HPX

Table-6: PRICE OF ELECTRICITY TRANSACTED IN GREEN DAY AHEAD MARKET THROUGH POWER EXCHANGES, NOVEMBER 2023

Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)	Price in HPX (₹/kWh)
1	Minimum	3.25	-	-
2	Maximum	10.00	-	-
3	Weighted Average	4.69	-	-

Source: IEX, PXIL and HPX

Table-7: PRICE OF ELECTRICITY TRANSACTED IN HIGH PRICE DAY AHEAD MARKET THROUGH POWER EXCHANGES, NOVEMBER 2023

Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)	Price in HPX (₹/kWh)
1	Minimum	-	-	-
2	Maximum	-	-	-
3	Weighted Average	-	-	-

Source: IEX, PXIL and HPX

Table-8: PRICE OF ELECTRICITY TRANSACTED IN REAL TIME MARKET THROUGH POWER EXCHANGES, NOVEMBER 2023

Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)	Price in HPX (₹/kWh)
1	Minimum	0.70	-	10.00
2	Maximum	10.00	-	10.00
3	Weighted Average	3.93	-	10.00

Source: IEX, PXIL and HPX

Table-9: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, NOVEMBER 2023

Sr.No	Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	0.10	10.00
2	Day Ahead Contingency Contracts	36.07	5.25
3	Daily Contracts	290.58	5.98
4	Weekly Contracts	45.86	5.75
5	Any Day Single Sided Contracts	306.52	8.12
	Total	679.13	6.89

Source: IEX

Table-10: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, NOVEMBER 2023			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	0.70	10.00
2	Day Ahead Contingency Contracts	72.98	8.28
3	Daily Contracts	75.97	8.22
4	Monthly Contracts	60.08	9.43
5	Any Day Single Sided Contracts	16.95	8.40
	Total	226.67	8.58

Source: PXIL

Table-11: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF HPX, NOVEMBER 2023			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	1.53	10.00
2	Day Ahead Contingency Contracts	8.07	9.34
3	Daily Contracts	42.11	5.63
4	Any Day Single Sided Contracts	77.31	9.49
	Total	129.02	8.22

Source: HPX

Table-12: VOLUME AND PRICE OF ELECTRICITY IN GREEN TERM AHEAD MARKET OF IEX, NOVEMBER 2023			
Sr. No	Green Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)
1	Day Ahead Contingency Contracts	0.37	6.27
2	Daily Contracts	6.77	6.40
	Total	7.14	6.39

Source: IEX

Table-13: VOLUME AND PRICE OF ELECTRICITY IN GREEN TERM AHEAD MARKET OF PXIL, NOVEMBER 2023			
Sr. No	Green Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)
1	No Trade	0.00	-
	Total	0.00	-

Source: PXIL

Table-14: VOLUME AND PRICE OF ELECTRICITY IN GREEN TERM AHEAD MARKET OF HPX, NOVEMBER 2023			
Sr. No	Green Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)
1	Day Ahead Contingency Contracts	7.52	5.36
	Total	7.52	5.36

Source: HPX

Table-15: VOLUME AND PRICE OF ELECTRICITY IN HIGH PRICE TERM AHEAD MARKET OF IEX, NOVEMBER 2023			
Sr. No	High Price Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)
1	No Trade	0.00	-
	Total	0.00	-

Source: IEX

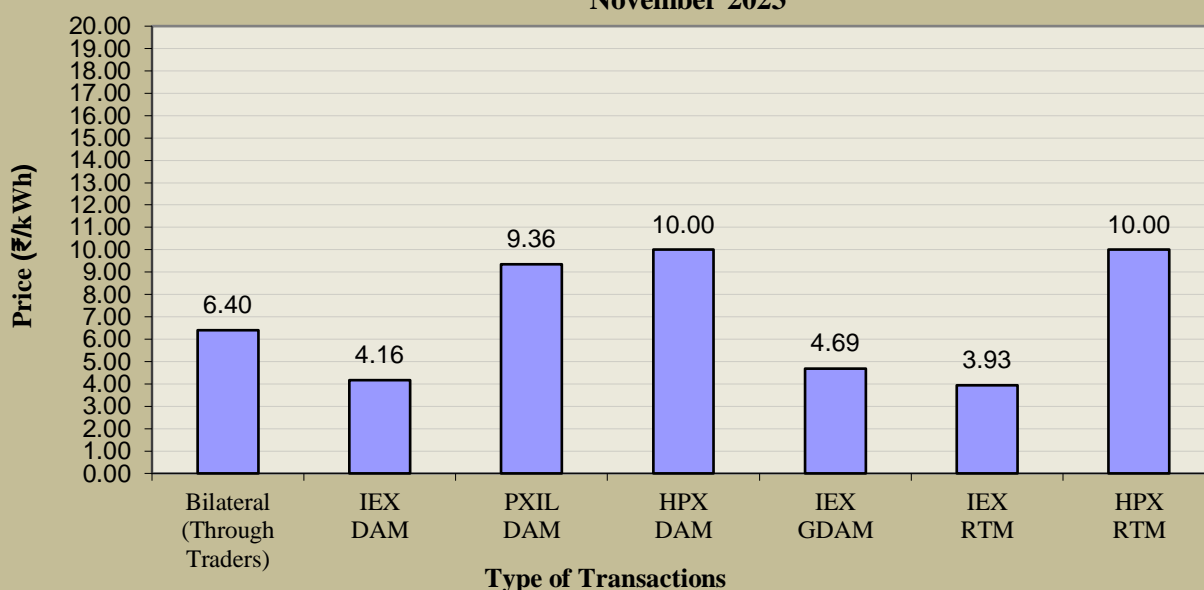
Table-16: VOLUME AND PRICE OF ELECTRICITY IN HIGH PRICE TERM AHEAD MARKET OF PXIL, NOVEMBER 2023			
Sr. No	High Price Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)
1	No Trade	0.00	-
	Total	0.00	-

Source: PXIL

Table-17: VOLUME AND PRICE OF ELECTRICITY IN HIGH PRICE TERM AHEAD MARKET OF HPX, NOVEMBER 2023			
Sr. No	High Price Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)
1	No Trade	0.00	-
	Total	0.00	-

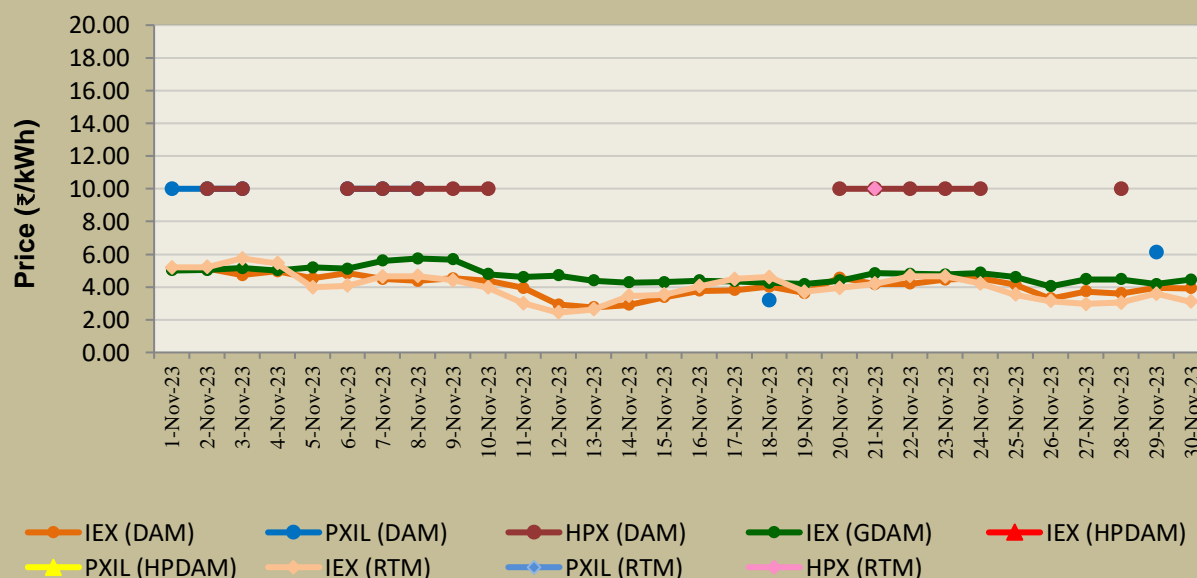
Source: HPX

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



Note: No electricity was transacted in G-DAM of PXIL & HPX, in RTM of PXIL and in HP-DAM of all Power Exchanges during November 2023

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



Note: No electricity was transacted in G-DAM of PXIL & HPX, in RTM of PXIL and in HP-DAM of all Power Exchanges during November 2023

Table-18: VOLUME OF ELECTRICITY SOLD IN DAY AHEAD MARKET THROUGH POWER EXCHANGES, NOVEMBER 2023		
Name of the Entity	Volume of Sale (MUs)	% of Volume
CHHATTISGARH	543.89	10.46
UTTAR PRADESH	523.43	10.06
ARTPP	299.64	5.76
DB POWER	290.98	5.59
ODISHA	258.83	4.98
BIHAR	255.25	4.91
WEST BENGAL	253.93	4.88
JINDAL STAGE-II	250.79	4.82
JINDAL POWER	226.49	4.35
NEPAL(NVVN)	218.36	4.20
ESSAR POWER	179.54	3.45
JITPL	158.50	3.05
RAJASTHAN	143.02	2.75
RAIGARH_ADANI	134.11	2.58
JAYPEE NIGRIE	108.29	2.08
NTPC STATIONS-ER	101.52	1.95
SKS POWER	100.06	1.92
HIMACHAL PRADESH	91.40	1.76
SEBPCORP	86.67	1.67
GUJARAT	84.44	1.62
DCPP	74.11	1.42
HARYANA	73.53	1.41
ACBIL	63.19	1.21
MAHARASHTRA	58.48	1.12
MP	49.47	0.95
NEP	44.31	0.85
DELHI	41.26	0.79
PONDICHERRY	40.12	0.77
ADHUNIK POWER LTD	35.05	0.67
PUNJAB	28.39	0.55
COASTGEN	28.24	0.54
KARCHAM WANGTOO	25.81	0.50
TAMIL NADU	24.14	0.46
CHANDIGARH	22.42	0.43
NTPC STATIONS-NR	21.59	0.42
RENEW_SR_SLR	21.38	0.41
SHREE CEMENT	21.01	0.40
MB POWER	18.82	0.36
ONGC PALATANA	17.98	0.35
AD HYDRO	16.60	0.32
ANDHRA PRADESH	15.77	0.30
TELANGANA	11.51	0.22
MARUTI COAL	11.02	0.21
DVC	9.42	0.18
JHABUA POWER_MP	9.03	0.17
SAINJ HEP	8.61	0.17
DGPCL Bhutan	8.43	0.16
MEGHALAYA	8.18	0.16
ADANI_WIND	6.33	0.12
NAGALAND	6.08	0.12
BASOCHHU HEP	5.99	0.12
SORANG HEP	5.92	0.11
RKM POWER	5.90	0.11
SIKKIM	5.47	0.11

UTTARAKHAND	4.98	0.10
MIZORAM	4.62	0.09
IL&FS	3.62	0.07
NHPC STATIONS	3.50	0.07
KERALA	3.27	0.06
DHARIWAL POWER	3.23	0.06
EMCO	3.17	0.06
SINGOLI BHATWARI HEP	2.53	0.05
GOA	2.24	0.04
NTPC STATIONS-NER	2.24	0.04
MANIPUR	2.13	0.04
ASEJTL_SLR	1.89	0.04
NPGC	1.86	0.04
OSTRO Hiriyur	1.43	0.03
J & K	1.16	0.02
BALCO	1.12	0.02
SIMHAPURI	0.93	0.02
NTPC STATIONS-SR	0.84	0.02
LANCO BUDHIL	0.83	0.02
NTPC STATIONS-WR	0.58	0.01
KBUNL	0.58	0.01
ARUNACHAL PRADESH	0.55	0.01
NEEPCO STATIONS	0.47	0.01
GMR KAMALANGA	0.42	0.01
RENEW_ROSHNI	0.26	0.005
TASHIDENG HEP	0.13	0.003
CHUZACHEN HEP	0.09	0.002
JORETHANG	0.05	0.001
Total	5201.42	100.00
Volume sold by top 5 Regional Entities	1916.77	36.85

Table-19: VOLUME OF ELECTRICITY PURCHASED IN DAY AHEAD MARKET THROUGH POWER EXCHANGES, NOVEMBER 2023		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
MAHARASHTRA	1085.36	20.87
GUJARAT	807.78	15.53
TELANGANA	673.54	12.95
ANDHRA PRADESH	575.08	11.06
J & K	370.32	7.12
UTTAR PRADESH	338.00	6.50
UTTARAKHAND	222.22	4.27
TAMIL NADU	220.26	4.23
MP	206.54	3.97
WEST BENGAL	111.71	2.15
PUNJAB	87.64	1.68
AMPS Hazira	78.67	1.51
KERALA	58.97	1.13
DELHI	51.53	0.99
RAJASTHAN	47.66	0.92
DD&DNH	42.11	0.81
KARNATAKA	35.82	0.69
NCR ALLAHABAD	31.16	0.60
MB POWER	27.12	0.52
HARYANA	26.99	0.52
ODISHA	21.51	0.41
MEGHALAYA	17.97	0.35
GOA	15.10	0.29
DVC	13.48	0.26
JHABUA POWER_MP	11.36	0.22
JHARKHAND	6.85	0.13
SIKKIM	6.69	0.13
ASSAM	5.50	0.11
BALCO	2.94	0.06
BIHAR	0.66	0.01
CHHATTISGARH	0.37	0.01
CHANDIGARH	0.22	0.004
HIMACHAL PRADESH	0.17	0.003
TRIPURA	0.10	0.002
TOTAL	5201.42	100.00
Volume purchased by top 5 Regional Entities	3512.09	67.52

Table-20: VOLUME OF ELECTRICITY SOLD IN GREEN DAY AHEAD MARKET THROUGH POWER EXCHANGES, NOVEMBER 2023		
Name of the Entity	Volume of Sale (MUs)	% of Volume
ADANI_WIND	29.47	16.35
ASEJTL_SLR	20.68	11.47
OSTRO Hiriyur	15.21	8.44
RENEW_SR_SLR	14.62	8.11
SINGOLI BHATWARI HEP	12.10	6.71
NTPC STATIONS-SR	10.64	5.90
CONTINNUM PT	9.15	5.07
TELANGANA	9.03	5.01
SIKKIM	8.73	4.84
J & K	6.93	3.84
RENEW_ROSHNI	6.30	3.49
ANDHRA PRADESH	6.28	3.49
HIMACHAL PRADESH	6.16	3.41
UTTAR PRADESH	5.32	2.95
REENERGY5_WIND	5.16	2.86
SORANG HEP	5.01	2.78
MP	4.04	2.24
RAJASTHAN	2.64	1.47
MAHARASHTRA	1.39	0.77
INOX_BHUJ	0.92	0.51
DELHI	0.38	0.21
HARYANA	0.07	0.04
MEGHALAYA	0.05	0.03
Total	180.27	100.00
Volume sold by top 5 Regional Entities	92.07	51.07

Table-21: VOLUME OF ELECTRICITY PURCHASED IN GREEN DAY AHEAD MARKET THROUGH POWER EXCHANGES, NOVEMBER 2023		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
AMPS Hazira	78.35	43.46
TAMIL NADU	25.61	14.20
BALCO	24.41	13.54
DELHI	11.74	6.51
RAJASTHAN	7.37	4.09
DVC	7.05	3.91
MAHARASHTRA	5.17	2.87
KERALA	5.12	2.84
GOA	3.80	2.11
UTTAR PRADESH	2.85	1.58
PUNJAB	1.83	1.02
KARNATAKA	1.66	0.92
ANDHRA PRADESH	1.54	0.86
MP	1.38	0.76
NCR ALLAHABAD	0.98	0.54
GUJARAT	0.83	0.46
JHARKHAND	0.30	0.17
HARYANA	0.20	0.11
TELANGANA	0.08	0.04
ODISHA	0.01	0.01
TOTAL	180.27	100.00
Volume purchased by top 5 Regional Entities	147.48	81.81

Table-22: VOLUME OF ELECTRICITY SOLD IN REAL TIME MARKET THROUGH POWER EXCHANGES, NOVEMBER 2023		
Name of the Entity	Volume of Sale (MUs)	% of Volume
BIHAR	382.13	16.20
RAJASTHAN	252.47	10.70
MP	206.02	8.73
UTTAR PRADESH	151.73	6.43
NTPC STATIONS-ER	135.21	5.73
CHHATTISGARH	100.81	4.27
WEST BENGAL	95.36	4.04
ODISHA	93.28	3.95
NTPC STATIONS-NR	84.12	3.57
JHARKHAND	80.92	3.43
ASSAM	80.73	3.42
NTPC STATIONS-WR	56.59	2.40
NLC	47.09	2.00
TAMIL NADU	46.70	1.98
DELHI	36.37	1.54
MAHARASHTRA	36.01	1.53
TRIPURA	31.61	1.34
SEBPCORP	28.39	1.20
SKS POWER	26.46	1.12
NPGC	22.77	0.97
KARNATAKA	21.85	0.93
HIMACHAL PRADESH	20.19	0.86
PUNJAB	17.71	0.75
NTPC STATIONS-SR	17.63	0.75
NEEPCO STATIONS	17.41	0.74
SIKKIM	15.46	0.66
HARYANA	15.23	0.65
GUJARAT	13.66	0.58
PONDICHERRY	13.39	0.57
DVC	13.06	0.55
ESSAR POWER	11.72	0.50
SASAN UMPP	11.37	0.48
ARTPP	11.22	0.48
NEPAL(NVVN)	10.53	0.45
UTTARAKHAND	10.03	0.43
MB POWER	9.93	0.42
TRN ENERGY	9.75	0.41
RAIGARH_ADANI	9.21	0.39
J & K	7.77	0.33
ADHUNIK POWER LTD	7.62	0.32
NETCL VALLUR	7.52	0.32
IGSTPS	6.78	0.29
JITPL	6.54	0.28
TELANGANA	6.16	0.26
ACBIL	5.92	0.25
JHABUA POWER_MP	5.48	0.23
NTPC STATIONS-NER	5.21	0.22
NREL_DAYAPAR (W)	4.69	0.20
ANDHRA PRADESH	4.64	0.20
KERALA	4.20	0.18
SIMHAPURI	3.91	0.17
MARUTI COAL	3.84	0.16
RKM POWER	3.80	0.16
ONGC PALATANA	3.76	0.16

JINDAL STAGE-II	3.38	0.14
JINDAL POWER	2.08	0.09
DCPP	1.94	0.08
ARUNACHAL PRADESH	1.81	0.08
IL&FS	1.68	0.07
MTPS	1.66	0.07
DB POWER	1.63	0.07
MANIPUR	1.09	0.05
JORETHANG	0.98	0.04
EMCO	0.98	0.04
BALCO	0.96	0.04
RGPL IR	0.84	0.04
RENEW_ROSHNI	0.82	0.03
SINGOLI BHATWARI HEP	0.78	0.03
GOA	0.75	0.03
AD HYDRO	0.74	0.03
OSTRO Hiriyur	0.70	0.03
NAGALAND	0.63	0.03
DD&DNH	0.61	0.03
RENEW_SR_SLR	0.53	0.02
JAYPEE NIGRIE	0.50	0.02
TASHIDENG HEP	0.49	0.02
COASTGEN	0.46	0.02
DOYANG HEP	0.22	0.01
SHREE CEMENT	0.19	0.01
KARCHAM WANGTOO	0.16	0.01
ADANI_WIND	0.16	0.01
MEGHALAYA	0.15	0.01
SORANG HEP	0.09	0.004
PARE HEP	0.08	0.004
SAINJ HEP	0.04	0.002
GMR KAMALANGA	0.03	0.001
LANCO BUDHIL	0.02	0.001
CHUZACHEN HEP	0.01	0.001
RANGANADI HEP	0.01	0.001
Total	2359.17	100.00
Volume sold by top 5 Regional Entities	1127.56	47.79

Table-23: VOLUME OF ELECTRICITY PURCHASED IN REAL TIME MARKET THROUGH POWER EXCHANGES, NOVEMBER 2023		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
TELANGANA	572.15	24.25
MAHARASHTRA	261.68	11.09
ANDHRA PRADESH	229.46	9.73
J & K	175.55	7.44
KERALA	162.84	6.90
MP	123.75	5.25
UTTAR PRADESH	122.02	5.17
KARNATAKA	74.92	3.18
DVC	74.68	3.17
PUNJAB	73.48	3.11
GUJARAT	64.44	2.73
TAMIL NADU	57.58	2.44
WEST BENGAL	53.44	2.27
ODISHA	44.46	1.88
DELHI	39.95	1.69
UTTARAKHAND	39.77	1.69
RAJASTHAN	32.06	1.36
AMPS Hazira	19.83	0.84
MB POWER	16.94	0.72
HARYANA	16.30	0.69
DD&DNH	13.02	0.55
CHHATTISGARH	10.60	0.45
JINDAL STAGE-II	10.14	0.43
MEGHALAYA	9.88	0.42
ESSAR POWER	8.63	0.37
JHABUA POWER_MP	8.07	0.34
SIMHAPURI	7.94	0.34
BALCO	6.17	0.26
JINDAL POWER	5.94	0.25
MANIPUR	2.71	0.11
HIMACHAL PRADESH	2.58	0.11
ASSAM	2.32	0.10
NCR ALLAHABAD	2.24	0.09
ARTPP	2.03	0.09
RGPPPL_IR	1.94	0.08
GOA	1.92	0.08
JHARKHAND	1.78	0.08
NTPC STATIONS-WR	1.66	0.07
BIHAR	1.49	0.06
DCPP	1.32	0.06
TRIPURA	0.49	0.02
MARUTI COAL	0.46	0.02
ARUNACHAL PRADESH	0.43	0.02
SIKKIM	0.09	0.004
NLC	0.03	0.001
ACBIL	0.02	0.001
TOTAL	2359.17	100.00
Volume purchased by top 5 Regional Entities	1401.68	59.41

Table-24: TOTAL VOLUME OF NET TRANSACTIONS THROUGH POWER EXCHANGES (REGIONAL ENTITY-WISE), NOVEMBER 2023

S. No.	Name of the Entity	Total volume of net transactions through Power Exchanges*
1	MAHARASHTRA	1256.33
2	TELANGANA	1219.06
3	ANDHRA PRADESH	779.40
4	GUJARAT	774.96
5	J & K	530.02
6	UTTARAKHAND	246.98
7	TAMIL NADU	232.60
8	KERALA	219.45
9	AMPS Hazira	176.85
10	PUNJAB	116.84
11	KARNATAKA	90.55
12	DVC	72.72
13	MP	72.13
14	DD&DNH	54.53
15	NCR ALLAHABAD	34.38
16	BALCO	31.44
17	DELHI	25.21
18	MEGHALAYA	19.47
19	GOA	17.82
20	MB POWER	15.31
21	JHABUA POWER_MP	4.92
22	SIMHAPURI	3.10
23	RGPL IR	1.11
24	RANGANADI HEP	-0.01
25	PARE HEP	-0.08
26	CHUZACHEN HEP	-0.10
27	DOYANG HEP	-0.22
28	GMR KAMALANGA	-0.44
29	MANIPUR	-0.51
30	KBUNL	-0.58
31	TASHIDENG HEP	-0.63
32	LANCO BUDHIL	-0.85
33	INOX_BHUJ	-0.92
34	JORETHANG	-1.03
35	MTPS	-1.66
36	ARUNACHAL PRADESH	-1.93
37	DHARIWAL POWER	-3.23
38	NHPC STATIONS	-3.50
39	EMCO	-4.15
40	MIZORAM	-4.62
41	NREL_DAYAPAR (W)	-4.69
42	RENERGY5_WIND	-5.16
43	IL&FS	-5.30
44	BASOCHHU HEP	-5.99
45	NAGALAND	-6.71
46	IGSTPS	-6.78
47	RENEW_ROSHNI	-7.38
48	NTPC STATIONS-NER	-7.45
49	NETCL VALLUR	-7.52
50	DGPCL Bhutan	-8.43
51	SAINJ HEP	-8.65
52	CONTINNUM PT	-9.15
53	RKM POWER	-9.69
54	TRN ENERGY	-9.75
55	SORANG HEP	-11.02
56	SASAN UMPP	-11.37
57	MARUTI COAL	-14.40
58	SINGOLI BHATWARI HEP	-15.41
59	OSTRO Hiriyur	-17.33
60	AD HYDRO	-17.34
61	NEEPCO STATIONS	-17.89
62	SHREE CEMENT	-21.20

63	ONGC PALATANA	-21.74
64	CHANDIGARH	-22.20
65	ASEJTL SLR	-22.57
66	SIKKIM	-22.89
67	NPGC	-24.63
68	KARCHAM WANGTOO	-25.97
69	COASTGEN	-28.70
70	NTPC STATIONS-SR	-29.11
71	TRIPURA	-31.02
72	ADANI_WIND	-35.96
73	RENEW_SR_SLR	-36.53
74	ADHUNIK POWER LTD	-42.66
75	NEP	-44.31
76	HARYANA	-45.34
77	NLC	-47.07
78	PONDICHERRY	-53.50
79	NTPC STATIONS-WR	-55.51
80	ACBIL	-69.09
81	JHARKHAND	-71.99
82	ASSAM	-72.90
83	DCPP	-74.73
84	NTPC STATIONS-NR	-105.71
85	JAYPEE NIGRIE	-108.78
86	HIMACHAL PRADESH	-115.01
87	SEBICORP	-115.06
88	SKS POWER	-126.52
89	RAIGARH_ADANI	-143.32
90	JITPL	-165.04
91	ESSAR POWER	-182.63
92	WEST BENGAL	-184.14
93	UTTAR PRADESH	-217.61
94	JINDAL POWER	-222.63
95	NEPAL(NVVN)	-228.89
96	NTPC STATIONS-ER	-236.73
97	JINDAL STAGE-II	-244.03
98	ODISHA	-286.13
99	DB POWER	-292.61
100	ARTPP	-308.83
101	RAJASTHAN	-311.06
102	CHHATTISGARH	-633.73
103	BIHAR	-635.23
* Total net includes net of transactions of electricity through various segments on power exchanges		
(-) indicates sale and (+) indicates purchase		

Table-25: DETAILS OF CONGESTION IN POWER EXCHANGES, NOVEMBER 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	PXIL	IEX	PXIL	HPX
1	Unconstrained Cleared Volume (MUs)	5196.16	3.12	2.15	180.27	0.00	0.00	0.000	0.00	2359.07	0.00	0.10
2	Actual Cleared Volume and hence scheduled (MUs)	5196.16	3.12	2.15	180.27	0.00	0.00	0.000	0.00	2359.07	0.00	0.10
3	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) *	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00
5	Volume of electricity that could not be cleared as % to Unconstrained Cleared Volume	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.000%	0.00%	0.00%	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)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	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%	0.00%
	6.00 - 12.00 hours	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	12.00 - 18.00 hours	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	18.00 - 24.00 hours	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
* This power would have been scheduled had there been no congestion												
Source: IEX, PXIL, HPX & NLDC												

**Table-26: VOLUME OF TRANSACTIONS THROUGH POWER EXCHANGES IN INDIA (DAY-WISE) (MUs),
NOVEMBER 2023**

Date	Day Ahead Market [#]			Green Day Ahead Market [#]			High Price DAM [#]			Real Time Market [#]			Total Electricity Generation (MU) *
	IEX	PXIL	HPX	IEX	PXIL	HPX	IEX	PXIL	HPX	IEX	PXIL	HPX	
1-Nov-23	189.36	0.60	0.00	5.72	0.00	0.00	0.00	0.00	0.00	59.45	0.00	0.00	4273.35
2-Nov-23	205.73	0.60	0.26	5.55	0.00	0.00	0.00	0.00	0.00	63.99	0.00	0.00	4282.41
3-Nov-23	199.32	0.80	0.28	5.03	0.00	0.00	0.00	0.00	0.00	67.91	0.00	0.00	4278.13
4-Nov-23	194.53	0.00	0.00	6.09	0.00	0.00	0.00	0.00	0.00	80.59	0.00	0.00	4222.09
5-Nov-23	185.76	0.00	0.00	5.66	0.00	0.00	0.00	0.00	0.00	58.18	0.00	0.00	4003.13
6-Nov-23	191.49	0.40	0.09	5.32	0.00	0.00	0.00	0.00	0.00	60.71	0.00	0.00	4092.11
7-Nov-23	170.84	0.20	0.10	5.32	0.00	0.00	0.00	0.00	0.00	60.95	0.00	0.00	4123.36
8-Nov-23	174.65	0.19	0.16	5.13	0.00	0.00	0.00	0.00	0.00	72.25	0.00	0.00	4143.59
9-Nov-23	190.59	0.00	0.14	5.33	0.00	0.00	0.00	0.00	0.00	60.03	0.00	0.00	4121.38
10-Nov-23	172.27	0.00	0.14	5.78	0.00	0.00	0.00	0.00	0.00	57.68	0.00	0.00	3964.72
11-Nov-23	161.71	0.00	0.00	7.47	0.00	0.00	0.00	0.00	0.00	71.04	0.00	0.00	3675.12
12-Nov-23	118.45	0.00	0.00	5.68	0.00	0.00	0.00	0.00	0.00	93.33	0.00	0.00	3317.08
13-Nov-23	123.04	0.00	0.00	4.86	0.00	0.00	0.00	0.00	0.00	89.01	0.00	0.00	3232.43
14-Nov-23	120.50	0.00	0.00	5.99	0.00	0.00	0.00	0.00	0.00	81.28	0.00	0.00	3434.31
15-Nov-23	138.03	0.00	0.00	6.50	0.00	0.00	0.00	0.00	0.00	82.85	0.00	0.00	3543.46
16-Nov-23	152.92	0.00	0.00	6.54	0.00	0.00	0.00	0.00	0.00	89.25	0.00	0.00	3673.17
17-Nov-23	172.15	0.00	0.00	5.89	0.00	0.00	0.00	0.00	0.00	95.54	0.00	0.00	3768.98
18-Nov-23	189.60	0.24	0.00	6.45	0.00	0.00	0.00	0.00	0.00	78.17	0.00	0.00	3879.63
19-Nov-23	185.65	0.00	0.00	6.09	0.00	0.00	0.00	0.00	0.00	70.32	0.00	0.00	3747.21
20-Nov-23	189.49	0.00	0.09	6.15	0.00	0.00	0.00	0.00	0.00	79.97	0.00	0.00	3842.24
21-Nov-23	204.38	0.00	0.18	5.60	0.00	0.00	0.00	0.00	0.00	77.91	0.00	0.10	3939.94
22-Nov-23	191.22	0.00	0.21	6.10	0.00	0.00	0.00	0.00	0.00	92.25	0.00	0.00	4000.14
23-Nov-23	202.72	0.00	0.14	5.73	0.00	0.00	0.00	0.00	0.00	77.99	0.00	0.00	3983.52
24-Nov-23	195.34	0.00	0.16	5.87	0.00	0.00	0.00	0.00	0.00	76.24	0.00	0.00	3899.65
25-Nov-23	208.74	0.00	0.00	6.15	0.00	0.00	0.00	0.00	0.00	76.98	0.00	0.00	3791.02
26-Nov-23	157.55	0.00	0.00	7.86	0.00	0.00	0.00	0.00	0.00	88.63	0.00	0.00	3561.17
27-Nov-23	173.66	0.00	0.00	7.02	0.00	0.00	0.00	0.00	0.00	113.71	0.00	0.00	3528.92
28-Nov-23	153.26	0.00	0.19	6.31	0.00	0.00	0.00	0.00	0.00	94.00	0.00	0.00	3564.46
29-Nov-23	142.62	0.09	0.00	7.05	0.00	0.00	0.00	0.00	0.00	89.30	0.00	0.00	3600.23
30-Nov-23	140.59	0.00	0.00	6.05	0.00	0.00	0.00	0.00	0.00	99.57	0.00	0.00	3532.51
Total	5196.16	3.12	2.15	180.27	0.00	0.00	0.00	0.00	0.00	2359.07	0.00	0.10	115019.46

Source: NLDC

* As available on CEA Website. Gross Electricity Generation excluding electricity generation from renewables and captive power plants.

[#] Scheduled volume of all the bid areas.

Note: With change in the regime on implementation of GNA Regulations from 1st October 2023, the volume reported here is not strictly comparable to the volumes in previous months. Some discrepancies were identified by CERC in the data provided by NLDC which prompted further validation. The volume herein is computed after verification with the volumes reported by the Trading Licensees and the Power Exchanges, and are subject to further revision. The Commission has directed NLDC, vide letter dated 05.01.2024, to make necessary provisions to differentiate the type of transactions under GNA and T-GNA at the earliest. In the interim, the columns for daily volume of bilateral transactions have been omitted from this table.

Table-27(a): PRICE OF DAY AHEAD TRANSACTIONS OF ELECTRICITY (DAY-WISE) (₹/kWh), NOVEMBER 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			High Price Day Ahead Market of PXIL		
Date	Minimum ACP	Maximum ACP	WA Price*	Minimum ACP	Maximum ACP	WA Price*	Minimum ACP	Maximum ACP	WA Price*	Minimum ACP	Maximum ACP	WA Price*	Minimum ACP	Maximum ACP	WA Price*
1-Nov-23	3.32	10.00	5.05	10.00	10.00	10.00	-	-	-	-	-	-	-	-	-
2-Nov-23	3.35	10.00	5.13	10.00	10.00	10.00	10.00	10.00	10.00	-	-	-	-	-	-
3-Nov-23	3.10	10.00	4.72	10.00	10.00	10.00	10.00	10.00	10.00	-	-	-	-	-	-
4-Nov-23	3.54	10.00	4.96	-	-	-	-	-	-	-	-	-	-	-	-
5-Nov-23	3.10	9.97	4.52	-	-	-	-	-	-	-	-	-	-	-	-
6-Nov-23	3.25	10.00	4.83	10.00	10.00	10.00	10.00	10.00	10.00	-	-	-	-	-	-
7-Nov-23	3.02	10.00	4.48	10.00	10.00	10.00	10.00	10.00	10.00	-	-	-	-	-	-
8-Nov-23	2.85	10.00	4.38	10.00	10.00	10.00	10.00	10.00	10.00	-	-	-	-	-	-
9-Nov-23	3.25	10.00	4.52	-	-	-	10.00	10.00	10.00	-	-	-	-	-	-
10-Nov-23	2.95	10.00	4.36	-	-	-	10.00	10.00	10.00	-	-	-	-	-	-
11-Nov-23	2.51	10.00	3.94	-	-	-	-	-	-	-	-	-	-	-	-
12-Nov-23	2.00	3.77	2.93	-	-	-	-	-	-	-	-	-	-	-	-
13-Nov-23	2.00	4.00	2.75	-	-	-	-	-	-	-	-	-	-	-	-
14-Nov-23	2.10	4.48	2.91	-	-	-	-	-	-	-	-	-	-	-	-
15-Nov-23	2.70	6.00	3.38	-	-	-	-	-	-	-	-	-	-	-	-
16-Nov-23	2.55	10.00	3.75	-	-	-	-	-	-	-	-	-	-	-	-
17-Nov-23	2.38	10.00	3.79	-	-	-	-	-	-	-	-	-	-	-	-
18-Nov-23	2.75	10.00	4.03	2.45	3.48	3.18	-	-	-	-	-	-	-	-	-
19-Nov-23	2.70	6.50	3.62	-	-	-	-	-	-	-	-	-	-	-	-
20-Nov-23	2.73	10.00	4.57	-	-	-	10.00	10.00	10.00	-	-	-	-	-	-
21-Nov-23	2.69	10.00	4.18	-	-	-	10.00	10.00	10.00	-	-	-	-	-	-
22-Nov-23	2.81	10.00	4.20	-	-	-	10.00	10.00	10.00	-	-	-	-	-	-
23-Nov-23	3.00	10.00	4.44	-	-	-	10.00	10.00	10.00	-	-	-	-	-	-
24-Nov-23	3.10	10.00	4.55	-	-	-	10.00	10.00	10.00	-	-	-	-	-	-
25-Nov-23	3.00	10.00	4.12	-	-	-	-	-	-	-	-	-	-	-	-
26-Nov-23	2.13	5.60	3.30	-	-	-	-	-	-	-	-	-	-	-	-
27-Nov-23	2.14	10.00	3.72	-	-	-	-	-	-	-	-	-	-	-	-
28-Nov-23	2.00	10.00	3.60	-	-	-	10.00	10.00	10.00	-	-	-	-	-	-
29-Nov-23	2.50	10.00	3.96	1.00	6.53	6.13	-	-	-	-	-	-	-	-	-
30-Nov-23	2.40	10.00	3.92	-	-	-	-	-	-	-	-	-	-	-	-
	2.00#	10.00#	4.16	1.00#	10.00#	9.36	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-27(b): PRICE OF GREEN DAY AHEAD TRANSACTIONS OF ELECTRICITY (DAY-WISE) (₹/kWh),
NOVEMBER 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-Nov-23	4.04	10.00	5.02	-	-	-	-	-	-
2-Nov-23	4.10	10.00	5.03	-	-	-	-	-	-
3-Nov-23	4.04	10.00	5.16	-	-	-	-	-	-
4-Nov-23	4.13	10.00	5.00	-	-	-	-	-	-
5-Nov-23	4.13	10.00	5.18	-	-	-	-	-	-
6-Nov-23	4.13	10.00	5.11	-	-	-	-	-	-
7-Nov-23	4.50	10.00	5.61	-	-	-	-	-	-
8-Nov-23	4.43	10.00	5.74	-	-	-	-	-	-
9-Nov-23	4.13	10.00	5.67	-	-	-	-	-	-
10-Nov-23	4.06	10.00	4.77	-	-	-	-	-	-
11-Nov-23	4.00	10.00	4.59	-	-	-	-	-	-
12-Nov-23	3.49	10.00	4.70	-	-	-	-	-	-
13-Nov-23	3.80	6.90	4.39	-	-	-	-	-	-
14-Nov-23	3.80	5.85	4.27	-	-	-	-	-	-
15-Nov-23	3.79	5.85	4.29	-	-	-	-	-	-
16-Nov-23	3.78	10.00	4.40	-	-	-	-	-	-
17-Nov-23	3.50	10.00	4.35	-	-	-	-	-	-
18-Nov-23	3.79	10.00	4.25	-	-	-	-	-	-
19-Nov-23	3.59	6.10	4.18	-	-	-	-	-	-
20-Nov-23	4.00	10.00	4.39	-	-	-	-	-	-
21-Nov-23	4.01	10.00	4.84	-	-	-	-	-	-
22-Nov-23	4.00	10.00	4.81	-	-	-	-	-	-
23-Nov-23	4.00	10.00	4.76	-	-	-	-	-	-
24-Nov-23	3.80	10.00	4.85	-	-	-	-	-	-
25-Nov-23	3.56	10.00	4.60	-	-	-	-	-	-
26-Nov-23	3.78	6.69	4.04	-	-	-	-	-	-
27-Nov-23	3.50	10.00	4.46	-	-	-	-	-	-
28-Nov-23	3.80	10.00	4.47	-	-	-	-	-	-
29-Nov-23	3.25	10.00	4.17	-	-	-	-	-	-
30-Nov-23	3.76	10.00	4.45	-	-	-	-	-	-
	3.25[#]	10.00[#]	4.69	-	-	-	-	-	-

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-27(c): PRICE OF REAL TIME TRANSACTIONS OF ELECTRICITY (DAY-WISE) (₹/kWh), NOVEMBER 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	Weighted Average Price*
1-Nov-23	3.42	10.00	5.19	-	-	-	-	-	-
2-Nov-23	3.43	10.00	5.20	-	-	-	-	-	-
3-Nov-23	3.78	10.00	5.75	-	-	-	-	-	-
4-Nov-23	3.21	10.00	5.44	-	-	-	-	-	-
5-Nov-23	2.10	6.39	3.97	-	-	-	-	-	-
6-Nov-23	2.43	9.50	4.07	-	-	-	-	-	-
7-Nov-23	2.89	10.00	4.64	-	-	-	-	-	-
8-Nov-23	3.22	10.00	4.66	-	-	-	-	-	-
9-Nov-23	3.00	10.00	4.42	-	-	-	-	-	-
10-Nov-23	2.50	10.00	3.96	-	-	-	-	-	-
11-Nov-23	1.00	5.00	2.99	-	-	-	-	-	-
12-Nov-23	0.70	3.99	2.43	-	-	-	-	-	-
13-Nov-23	1.30	4.37	2.62	-	-	-	-	-	-
14-Nov-23	2.00	5.51	3.44	-	-	-	-	-	-
15-Nov-23	1.74	10.00	3.52	-	-	-	-	-	-
16-Nov-23	2.13	10.00	4.04	-	-	-	-	-	-
17-Nov-23	2.50	10.00	4.48	-	-	-	-	-	-
18-Nov-23	2.92	10.00	4.61	-	-	-	-	-	-
19-Nov-23	1.50	10.00	3.70	-	-	-	-	-	-
20-Nov-23	1.20	10.00	3.95	-	-	-	-	-	-
21-Nov-23	1.76	10.00	4.20	-	-	-	10.00	10.00	10.00
22-Nov-23	3.00	10.00	4.67	-	-	-	-	-	-
23-Nov-23	2.82	10.00	4.64	-	-	-	-	-	-
24-Nov-23	2.00	10.00	4.21	-	-	-	-	-	-
25-Nov-23	1.74	9.80	3.52	-	-	-	-	-	-
26-Nov-23	1.20	4.00	3.14	-	-	-	-	-	-
27-Nov-23	1.20	8.51	2.96	-	-	-	-	-	-
28-Nov-23	1.52	5.00	3.03	-	-	-	-	-	-
29-Nov-23	1.80	10.00	3.58	-	-	-	-	-	-
30-Nov-23	1.53	9.50	3.09	-	-	-	-	-	-
	0.70[#]	10.00[#]	3.93	-	-	-	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-28: VOLUME OF TRANSACTIONS THROUGH POWER EXCHANGES (REGIONAL ENTITY*-WISE) (MUs), NOVEMBER 2023									
Name of the Entity	Through DAM		Through GDAM		Through HP-DAM		Through RTM		Total Net***
	Sale	Purchase	Sale	Purchase	Sale	Purchase	Sale	Purchase	
PUNJAB	28.39	87.64	0.00	1.83	0.00	0.00	17.71	73.48	116.84
HARYANA	73.53	26.99	0.07	0.20	0.00	0.00	15.23	16.30	-45.34
RAJASTHAN	143.02	47.66	2.64	7.37	0.00	0.00	252.47	32.06	-311.06
DELHI	41.26	51.53	0.38	11.74	0.00	0.00	36.37	39.95	25.21
UTTAR P	523.43	338.00	5.32	2.85	0.00	0.00	151.73	122.02	-217.61
UTTARAKHAND	4.98	222.22	0.00	0.00	0.00	0.00	10.03	39.77	246.98
HIMACHAL P	91.40	0.17	6.16	0.00	0.00	0.00	20.19	2.58	-115.01
J & K	1.16	370.32	6.93	0.00	0.00	0.00	7.77	175.55	530.02
CHANDIGARH	22.42	0.22	0.00	0.00	0.00	0.00	0.00	0.00	-22.20
MP	49.47	206.54	4.04	1.38	0.00	0.00	206.02	123.75	72.13
MAHARASHTRA	58.48	1085.36	1.39	5.17	0.00	0.00	36.01	261.68	1256.33
GUJARAT	84.44	807.78	0.00	0.83	0.00	0.00	13.66	64.44	774.96
CHHATTISGARH	543.89	0.37	0.00	0.00	0.00	0.00	100.81	10.60	-633.73
GOA	2.24	15.10	0.00	3.80	0.00	0.00	0.75	1.92	17.82
DD&DNH	0.00	42.11	0.00	0.00	0.00	0.00	0.61	13.02	54.53
ANDHRA P	15.77	575.08	6.28	1.54	0.00	0.00	4.64	229.46	779.40
KARNATAKA	0.00	35.82	0.00	1.66	0.00	0.00	21.85	74.92	90.55
KERALA	3.27	58.97	0.00	5.12	0.00	0.00	4.20	162.84	219.45
TAMIL NADU	24.14	220.26	0.00	25.61	0.00	0.00	46.70	57.58	232.60
PONDICHERRY	40.12	0.00	0.00	0.00	0.00	0.00	13.39	0.00	-53.50
TELANGANA	11.51	673.54	9.03	0.08	0.00	0.00	6.16	572.15	1219.06
WEST BENGAL	253.93	111.71	0.00	0.00	0.00	0.00	95.36	53.44	-184.14
ODISHA	258.83	21.51	0.00	0.01	0.00	0.00	93.28	44.46	-286.13
BIHAR	255.25	0.66	0.00	0.00	0.00	0.00	382.13	1.49	-635.23
JHARKHAND	0.00	6.85	0.00	0.30	0.00	0.00	80.92	1.78	-71.99
SIKKIM	5.47	6.69	8.73	0.00	0.00	0.00	15.46	0.09	-22.89
DVC	9.42	13.48	0.00	7.05	0.00	0.00	13.06	74.68	72.72
ARUNACHAL P	0.55	0.00	0.00	0.00	0.00	0.00	1.81	0.43	-1.93
ASSAM	0.00	5.50	0.00	0.00	0.00	0.00	80.73	2.32	-72.90
MANIPUR	2.13	0.00	0.00	0.00	0.00	0.00	1.09	2.71	-0.51
MEGHALAYA	8.18	17.97	0.05	0.00	0.00	0.00	0.15	9.88	19.47
MIZORAM	4.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-4.62
NAGALAND	6.08	0.00	0.00	0.00	0.00	0.00	0.63	0.00	-6.71
TRIPURA	0.00	0.10	0.00	0.00	0.00	0.00	31.61	0.49	-31.02
NTPC STATIONS-NR	21.59	0.00	0.00	0.00	0.00	0.00	84.12	0.00	-105.71
NHPC STATIONS	3.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-3.50
NEP	44.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-44.31
AD HYDRO	16.60	0.00	0.00	0.00	0.00	0.00	0.74	0.00	-17.34
IGSTPS	0.00	0.00	0.00	0.00	0.00	0.00	6.78	0.00	-6.78
KARCHAM WANGTOO	25.81	0.00	0.00	0.00	0.00	0.00	0.16	0.00	-25.97
SHREE CEMENT	21.01	0.00	0.00	0.00	0.00	0.00	0.19	0.00	-21.20
LANCO BUDHIL	0.83	0.00	0.00	0.00	0.00	0.00	0.02	0.00	-0.85
SORANG HEP	5.92	0.00	5.01	0.00	0.00	0.00	0.09	0.00	-11.02
SAINJ HEP	8.61	0.00	0.00	0.00	0.00	0.00	0.04	0.00	-8.65
ASEJTL_SLR	1.89	0.00	20.68	0.00	0.00	0.00	0.00	0.00	-22.57
SINGOLI BHATWARI HE	2.53	0.00	12.10	0.00	0.00	0.00	0.78	0.00	-15.41
NCR ALLAHABAD	0.00	31.16	0.00	0.98	0.00	0.00	0.00	2.24	34.38
RENEW_SR_SLR	21.38	0.00	14.62	0.00	0.00	0.00	0.53	0.00	-36.53
NTPC STATIONS-WR	0.58	0.00	0.00	0.00	0.00	0.00	56.59	1.66	-55.51
JINDAL POWER	226.49	0.00	0.00	0.00	0.00	0.00	2.08	5.94	-222.63
ACBIL	63.19	0.00	0.00	0.00	0.00	0.00	5.92	0.02	-69.09
BALCO	1.12	2.94	0.00	24.41	0.00	0.00	0.96	6.17	31.44
DCPP	74.11	0.00	0.00	0.00	0.00	0.00	1.94	1.32	-74.73
EMCO	3.17	0.00	0.00	0.00	0.00	0.00	0.98	0.00	-4.15
ESSAR POWER	179.54	0.00	0.00	0.00	0.00	0.00	11.72	8.63	-182.63
JINDAL STAGE-II	250.79	0.00	0.00	0.00	0.00	0.00	3.38	10.14	-244.03
DB POWER	290.98	0.00	0.00	0.00	0.00	0.00	1.63	0.00	-292.61
DHARIWAL POWER	3.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-3.23
JAYPEE NIGRIE	108.29	0.00	0.00	0.00	0.00	0.00	0.50	0.00	-108.78

MB POWER	18.82	27.12	0.00	0.00	0.00	0.00	9.93	16.94	15.31
MARUTI COAL	11.02	0.00	0.00	0.00	0.00	0.00	3.84	0.46	-14.40
JHABUA POWER_MP	9.03	11.36	0.00	0.00	0.00	0.00	5.48	8.07	4.92
SASAN UMPP	0.00	0.00	0.00	0.00	0.00	0.00	11.37	0.00	-11.37
TRN ENERGY	0.00	0.00	0.00	0.00	0.00	0.00	9.75	0.00	-9.75
RKM POWER	5.90	0.00	0.00	0.00	0.00	0.00	3.80	0.00	-9.69
SKS POWER	100.06	0.00	0.00	0.00	0.00	0.00	26.46	0.00	-126.52
INOX_BHUJ	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	-0.92
AMPS Hazira	0.00	78.67	0.00	78.35	0.00	0.00	0.00	19.83	176.85
RGPL IR	0.00	0.00	0.00	0.00	0.00	0.00	0.84	1.94	1.11
ADANI_WIND	6.33	0.00	29.47	0.00	0.00	0.00	0.16	0.00	-35.96
CONTINNUM PT	0.00	0.00	9.15	0.00	0.00	0.00	0.00	0.00	-9.15
RENERGY5_WIND	0.00	0.00	5.16	0.00	0.00	0.00	0.00	0.00	-5.16
ARTPP	299.64	0.00	0.00	0.00	0.00	0.00	11.22	2.03	-308.83
MTPS	0.00	0.00	0.00	0.00	0.00	0.00	1.66	0.00	-1.66
RAIGARH_ADANI	134.11	0.00	0.00	0.00	0.00	0.00	9.21	0.00	-143.32
NREL_DAYAPAR (W)	0.00	0.00	0.00	0.00	0.00	0.00	4.69	0.00	-4.69
NTPC STATIONS-SR	0.84	0.00	10.64	0.00	0.00	0.00	17.63	0.00	-29.11
SIMHAPURI	0.93	0.00	0.00	0.00	0.00	0.00	3.91	7.94	3.10
COASTGEN	28.24	0.00	0.00	0.00	0.00	0.00	0.46	0.00	-28.70
IL&FS	3.62	0.00	0.00	0.00	0.00	0.00	1.68	0.00	-5.30
NLC	0.00	0.00	0.00	0.00	0.00	0.00	47.09	0.03	-47.07
SEMBCORP	86.67	0.00	0.00	0.00	0.00	0.00	28.39	0.00	-115.06
NETCL VALLUR	0.00	0.00	0.00	0.00	0.00	0.00	7.52	0.00	-7.52
OSTRO Hiriyur	1.43	0.00	15.21	0.00	0.00	0.00	0.70	0.00	-17.33
RENEW_ROSHNI	0.26	0.00	6.30	0.00	0.00	0.00	0.82	0.00	-7.38
NTPC STATIONS-ER	101.52	0.00	0.00	0.00	0.00	0.00	135.21	0.00	-236.73
NPGC	1.86	0.00	0.00	0.00	0.00	0.00	22.77	0.00	-24.63
ADHUNIK POWER LTD	35.05	0.00	0.00	0.00	0.00	0.00	7.62	0.00	-42.66
CHUZACHEN HEP	0.09	0.00	0.00	0.00	0.00	0.00	0.01	0.00	-0.10
GMR KAMALANGA	0.42	0.00	0.00	0.00	0.00	0.00	0.03	0.00	-0.44
JITPL	158.50	0.00	0.00	0.00	0.00	0.00	6.54	0.00	-165.04
JORETHANG	0.05	0.00	0.00	0.00	0.00	0.00	0.98	0.00	-1.03
NEPAL(NVVN)	218.36	0.00	0.00	0.00	0.00	0.00	10.53	0.00	-228.89
TASHIDENG HEP	0.13	0.00	0.00	0.00	0.00	0.00	0.49	0.00	-0.63
DGPCL Bhutan	8.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-8.43
KBUNL	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.58
BASOCHHU HEP	5.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-5.99
NTPC STATIONS-NER	2.24	0.00	0.00	0.00	0.00	0.00	5.21	0.00	-7.45
NEEPCO STATIONS	0.47	0.00	0.00	0.00	0.00	0.00	17.41	0.00	-17.89
RANGANADI HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	-0.01
DOYANG HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00	-0.22
ONGC PALATANA	17.98	0.00	0.00	0.00	0.00	0.00	3.76	0.00	-21.74
PARE HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	-0.08

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 various segments on power exchanges

Table-29: VOLUME AND CHARGES UNDER DSM (DAY-WISE), NOVEMBER 2023				
Date	Volume (MU)	All India Grid Charges (₹/kWh)		
		Minimum	Maximum	Average
1-Nov-23	64.29	2.50	10.00	5.53
2-Nov-23	63.54	2.50	10.00	5.53
3-Nov-23	59.21	2.50	10.00	5.82
4-Nov-23	66.56	2.50	10.00	5.63
5-Nov-23	65.37	2.50	10.00	4.56
6-Nov-23	63.48	2.50	10.00	4.86
7-Nov-23	67.52	3.21	10.00	4.69
8-Nov-23	64.26	3.20	10.00	4.84
9-Nov-23	71.79	3.25	10.00	4.64
10-Nov-23	73.30	2.95	10.00	4.34
11-Nov-23	84.98	2.51	10.00	3.92
12-Nov-23	85.45	2.00	10.00	3.17
13-Nov-23	88.87	2.00	10.00	3.07
14-Nov-23	80.98	2.33	10.00	3.53
15-Nov-23	75.15	2.70	10.00	3.75
16-Nov-23	65.67	2.55	10.00	4.08
17-Nov-23	66.89	2.63	10.00	4.55
18-Nov-23	66.05	2.90	10.00	4.61
19-Nov-23	69.87	2.78	10.00	3.86
20-Nov-23	69.54	2.70	10.00	4.50
21-Nov-23	73.03	2.69	10.00	4.46
22-Nov-23	66.93	3.00	10.00	4.75
23-Nov-23	67.24	3.04	10.00	4.93
24-Nov-23	67.92	3.16	10.00	4.64
25-Nov-23	71.52	3.00	10.00	4.15
26-Nov-23	90.97	2.50	10.00	3.49
27-Nov-23	87.03	2.14	10.00	3.70
28-Nov-23	80.13	2.00	10.00	3.58
29-Nov-23	76.75	2.60	10.00	3.89
30-Nov-23	76.60	2.40	10.00	3.77
Total	2170.89	2.00[#]	10.00[#]	4.36
<i>Source: NLDC</i>				
<i># Maximum/Minimum in the month</i>				

Table-30: VOLUME OF ELECTRICITY UNDER DRAWAL/ OVER INJECTION (EXPORTED) UNDER DSM, NOVEMBER 2023

Name of the Entity	Volume of Under drawal/ Over injection (MUs)	% of Volume
NTPC STATIONS-ER	189.83	8.32
RAJASTHAN	129.78	5.69
MP	124.67	5.47
NTPC STATIONS-SR	111.45	4.89
GUJARAT	104.90	4.60
KARNATAKA	101.25	4.44
NTPC STATIONS-NR	95.71	4.20
MAHARASHTRA	95.03	4.17
UTTAR PRADESH	89.50	3.92
NTPC STATIONS-WR	78.53	3.44
PUNJAB	59.33	2.60
HARYANA	56.49	2.48
TAMIL NADU	55.65	2.44
CHHATTISGARH	55.21	2.42
ANDHRA PRADESH	53.13	2.33
TELANGANA	49.80	2.18
NHPC STATIONS	41.60	1.82
SASAN UMPP	41.01	1.80
DELHI	38.61	1.69
DVC	35.39	1.55
HIMACHAL PRADESH	27.46	1.20
NEEPCO STATIONS	22.62	0.99
AMPS Hazira	19.47	0.85
JHARKHAND	18.17	0.80
JINDAL STAGE-II	15.44	0.68
BIHAR	15.14	0.66
IGSTPS	14.90	0.65
UTTARAKHAND	14.86	0.65
NLC	13.46	0.59
MAITHON POWER LTD	13.17	0.58
BBMB	11.39	0.50
J & K	11.07	0.49
LANKO_AMK	10.60	0.46
ODISHA	10.18	0.45
PONDICHERRY	9.80	0.43
NJPC	8.83	0.39
TRIPURA	8.62	0.38
RKM POWER	7.99	0.35
NPGC	7.92	0.35
ADANI_WIND	7.77	0.34
AGEMPL BHUJ	7.66	0.34
NEPAL(NVVN)	7.57	0.33
ASSAM	7.38	0.32
JINDAL POWER	7.36	0.32
BALCO	7.10	0.31
JAYPEE NIGRIE	7.06	0.31
DD&DNH	6.84	0.30
BRBCL,NABINAGAR	6.80	0.30
ESSAR POWER	6.27	0.28
TATA_PVGD	6.24	0.27
MEGHALAYA	6.16	0.27
GIWEL_BHUJ	6.03	0.26
PARAM_PVGD	5.96	0.26
KREDL_PVGD	5.92	0.26
GOA	5.80	0.25
RENEW_BHUJ	5.74	0.25
MTPS II	5.72	0.25
RPREL	5.64	0.25
SBESS	5.42	0.24

TEHRI	5.05	0.22
SKRPL	5.00	0.22
MIZORAM	4.82	0.21
KERALA	4.74	0.21
RAP C	4.72	0.21
CHANDIGARH	4.64	0.20
MB POWER	4.61	0.20
RAMPUR HEP	4.49	0.20
NTPL	4.34	0.19
ASEJTL_SLR	4.13	0.18
DB POWER	4.02	0.18
NETCL VALLUR	3.81	0.17
OSTRO	3.75	0.16
RENEW_BHACHAU	3.74	0.16
NTPC_ANTP	3.72	0.16
AYANA_RP1	3.66	0.16
NTPC STATIONS-NER	3.65	0.16
BARC	3.63	0.16
KARCHAM WANGTOO	3.58	0.16
JITPL	3.55	0.16
CLEAN_SLR	3.50	0.15
ACME_SLR	3.50	0.15
RAIL	3.43	0.15
ARS_PVGD	3.37	0.15
RENEWSB	3.35	0.15
SPRNG_NPKUNTA	3.35	0.15
KOTESHWAR	3.33	0.15
AVAADASN_SLR	3.32	0.15
GRT_JPL	3.26	0.14
AVIKIRAN	3.20	0.14
NSPCL	3.20	0.14
SEMBCORP	3.18	0.14
APRAAVA	3.12	0.14
ACME_HEERGARH	3.02	0.13
SKS POWER	3.01	0.13
AZURE_PVGD	2.95	0.13
GIWEL_TCN	2.86	0.13
ALFANAR_BHUJ	2.85	0.13
INOX_BHUJ	2.85	0.12
NAGALAND	2.79	0.12
AZURE43_SLR	2.78	0.12
FORTUM1_PVGD	2.68	0.12
TORRENT SOLARGEN	2.63	0.12
BANGLADESH	2.61	0.11
ORANGE_TCN	2.57	0.11
SBG_NPK	2.55	0.11
EDEN_SLR	2.52	0.11
MSUPL_BHDL2	2.51	0.11
MANIPUR	2.39	0.10
IL&FS	2.36	0.10
AZURE41_SLR	2.35	0.10
ADY1_PVGD	2.32	0.10
ARINSUM_RUMS	2.31	0.10
RENEWURJA_SLR	2.30	0.10
TATA_SLR	2.27	0.10
OSTRO Hiriyur	2.22	0.10
NEP	2.19	0.10
FRV_ANTP	2.14	0.09
AYANA_NPKUNTA	2.09	0.09
NETRA WIND	2.08	0.09
SIKKIM	2.04	0.09
RENEW_SLR_BKN	1.98	0.09
CLEANSP_SLR	1.98	0.09

ABC_BHDL2	1.96	0.09
RENEW_SR_SLR	1.90	0.08
RENEWSW_SLR	1.87	0.08
EMCO	1.81	0.08
SIMHAPURI	1.72	0.08
CGPL	1.72	0.08
ESPL_RADHANESDA	1.71	0.07
MRPL	1.69	0.07
WEST BENGAL	1.67	0.07
AVADARJHN_SLR	1.65	0.07
RENEWJH_SLR	1.64	0.07
RENEW_PVGD	1.62	0.07
ACME_RUMS	1.60	0.07
TATA_GREEN	1.59	0.07
AVAADA1_PVGD	1.58	0.07
MSEPL	1.56	0.07
SBG_PVGD	1.53	0.07
ADHUNIK POWER LTD	1.52	0.07
ARERJL_SLR	1.51	0.07
JHABUA POWER_MP	1.49	0.07
MAHINDRA_RUMS	1.49	0.07
ONGC PALATANA	1.46	0.06
ARUNACHAL PRADESH	1.43	0.06
THARI_SLR	1.39	0.06
TATA_ANTP	1.37	0.06
DAGACHU	1.33	0.06
SESPL	1.22	0.05
AZURE_ANTP	1.20	0.05
DCPP	1.17	0.05
SPRING_PUGALUR	1.16	0.05
GIPCL_RADHANESDA	1.16	0.05
AZURE_SLR	1.12	0.05
ACBIL	1.09	0.05
DHARIWAL POWER	1.08	0.05
GMR KAMALANGA	1.06	0.05
RENEW_ROSHNI	1.02	0.04
TPREL_RADHANESDA	0.98	0.04
FORTUM2_PVGD	0.98	0.04
KSK MAHANADI	0.93	0.04
Railways_ER ISTS	0.93	0.04
GSECL_Radhanesda	0.93	0.04
RANGIT HEP	0.91	0.04
AZURE_MAPLE_SLR	0.91	0.04
AZURE34_SLR	0.89	0.04
POWERGRID HVDC	0.87	0.04
SHREE CEMENT	0.86	0.04
TASHIDENG HEP	0.86	0.04
POWERICA	0.84	0.04
JORETHANG	0.83	0.04
THERMAL POWERTECH	0.82	0.04
TPSL	0.78	0.03
RONGNICHU HEP	0.78	0.03
COASTGEN	0.75	0.03
RANGANADI HEP	0.70	0.03
JSW_RENEW_2	0.67	0.03
MYTRAH_TCN	0.66	0.03
TRN ENERGY	0.64	0.03
SINGOLI BHATWARI HEP	0.64	0.03
RENEW_SLR	0.63	0.03
PARE HEP	0.60	0.03
AKSP_ANTP	0.58	0.03
BETAM_TCN	0.54	0.02
ABSP_ANTP	0.53	0.02

AKS_PVGD	0.53	0.02
FRV_NPK	0.50	0.02
AHSP_ANTP	0.50	0.02
AVAADA2_PVGD	0.50	0.02
CHUZACHEN HEP	0.48	0.02
YARROW_PVGD	0.45	0.02
RSTPS_FSPP	0.44	0.02
SAINJ HEP	0.42	0.02
LOKTAK	0.39	0.02
RAP B	0.39	0.02
LANCO BUDHIL	0.36	0.02
DOYANG HEP	0.32	0.01
ADANI GREEN	0.31	0.01
NFF	0.28	0.01
NAPP	0.27	0.01
SRSSFPL	0.26	0.01
SORANG HEP	0.24	0.01
AD HYDRO	0.23	0.01
RGPPPL	0.23	0.01
GSECL P-II	0.22	0.01
HVDC ALPD	0.03	0.001
HVDC PUS	0.001	0.0001
Total	2280.87	100.00
Volume Exported by top 5 Regional Entities	660.63	28.96

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

Name of the Entity	Volume of Over drawal/ Under Injection (MUs)	% of Volume
NTPC STATIONS-ER	114.95	5.57
NTPC STATIONS-NR	108.68	5.27
WEST BENGAL	90.59	4.39
NTPC STATIONS-WR	86.57	4.20
NTPC STATIONS-SR	78.23	3.79
J & K	73.95	3.59
KARNATAKA	59.18	2.87
ODISHA	57.31	2.78
BIHAR	52.35	2.54
MAHARASHTRA	50.16	2.43
UTTAR PRADESH	48.65	2.36
GUJARAT	43.87	2.13
RAJASTHAN	39.84	1.93
NLC	39.03	1.89
ANDHRA PRADESH	38.43	1.86
TELANGANA	38.42	1.86
TAMIL NADU	36.25	1.76
KERALA	35.90	1.74
AGEMPL BHUJ	30.37	1.47
JHARKHAND	25.77	1.25
MP	25.56	1.24
GIWEL_BHUJ	25.29	1.23
PUNJAB	25.25	1.22
HARYANA	25.07	1.22
UTTARAKHAND	21.37	1.04
AMPS Hazira	19.95	0.97
SBESS	19.14	0.93
INOX_BHUJ	18.73	0.91
CGPL	18.24	0.88
SPRING_PUGALUR	17.75	0.86
ALFANAR_BHUJ	16.36	0.79
OSTRO	16.07	0.78
IGSTPS	15.85	0.77
PARAM_PVGD	14.49	0.70
DVC	14.30	0.69
SKRPL	14.21	0.69
RENEW_BHUJ	14.02	0.68
RENEW_BHACHAU	13.39	0.65
ASSAM	12.27	0.60
GRT_JPL	12.25	0.59
AZURE43_SLR	11.69	0.57
NETCL VALLUR	11.25	0.55
FORTUM1_PVGD	10.87	0.53
AVAADASN_SLR	10.86	0.53
KREDL_PVGD	10.37	0.50
ADANI_WIND	10.37	0.50
OSTRO Hiriya	10.34	0.50
AVADARJHN_SLR	10.02	0.49
CHHATTISGARH	9.83	0.48
ARUNACHAL PRADESH	9.82	0.48
MB POWER	9.78	0.47
NPGC	9.58	0.46
SHREE CEMENT	8.94	0.43
SESPL	8.64	0.42
BANGLADESH	8.16	0.40
JHABUA POWER_MP	8.02	0.39
AVIKIRAN	8.01	0.39
NHPC STATIONS	7.99	0.39
GOA	7.97	0.39

ARS_PVGD	7.76	0.38
JINDAL STAGE-II	7.13	0.35
TATA_PVGD	6.76	0.33
AZURE_PVGD	6.66	0.32
HIMACHAL PRADESH	6.59	0.32
NTPC_ANTP	6.42	0.31
RENEW_SR_SLR	6.33	0.31
BALCO	6.24	0.30
SBG_NPK	6.23	0.30
NEPAL(NVVN)	6.16	0.30
SEMBCORP	6.07	0.29
SPRNG_NPKUNTA	6.02	0.29
BRBCL,NABINAGAR	5.99	0.29
CLEAN_SLR	5.90	0.29
APRAAVA	5.61	0.27
RAP B	5.50	0.27
BBMB	5.44	0.26
JINDAL POWER	5.30	0.26
NETRA WIND	5.15	0.25
THAR1_SLR	5.13	0.25
TORRENT SOLARGEN	5.11	0.25
TEHRI	5.09	0.25
RAIL	5.09	0.25
ADY1_PVGD	4.97	0.24
NAPP	4.93	0.24
AZURE41_SLR	4.92	0.24
NTPC STATIONS-NER	4.89	0.24
GIWEL_TCN	4.89	0.24
AYANA_RP1	4.68	0.23
ASEJTL_SLR	4.59	0.22
ORANGE_TCN	4.39	0.21
THERMAL POWERTECH	4.20	0.20
CHANDIGARH	3.99	0.19
DELHI	3.89	0.19
ABC_BHDL2	3.85	0.19
TATA_SLR	3.79	0.18
ACME_HEERGARH	3.79	0.18
DD&DNH	3.79	0.18
KAPP 3&4	3.66	0.18
RENEW_SLR_BKN	3.61	0.18
RENEW_PVGD	3.60	0.17
ARERJL_SLR	3.55	0.17
AZURE_MAPLE_SLR	3.52	0.17
CLEANSF_SLR	3.39	0.16
FRV_ANTP	3.38	0.16
RENEWJH_SLR	3.31	0.16
AVAADA1_PVGD	3.30	0.16
MAHINDRA_RUMS	3.30	0.16
JITPL	3.25	0.16
RENEWURJA_SLR	3.25	0.16
MSUPL_BHDL2	3.18	0.15
EDEN_SLR	3.06	0.15
SIKKIM	3.05	0.15
ACME_RUMS	3.03	0.15
TATA_GREEN	3.03	0.15
AYANA_NPKUNTA	3.01	0.15
MRPL	2.93	0.14
MANIPUR	2.92	0.14
ACME_SLR	2.82	0.14
RENEWSB	2.81	0.14
RENEWSW_SLR	2.80	0.14
AZURE_SLR	2.70	0.13
RPREL	2.67	0.13

NTPL	2.59	0.13
MSEPL	2.52	0.12
AZURE_ANTP	2.50	0.12
FORTUM2_PVGD	2.35	0.11
NSPCL	2.34	0.11
POWERICA	2.34	0.11
ARINSUM_RUMS	2.16	0.10
DHARIWAL POWER	2.11	0.10
SIMHAPURI	2.07	0.10
RKM POWER	2.00	0.10
NEEPCO STATIONS	1.99	0.10
ESSAR POWER	1.97	0.10
SBG_PVGD	1.94	0.09
TATA_ANTP	1.91	0.09
ESPL_RADHANESDA	1.90	0.09
ACBIL	1.78	0.09
MEGHALAYA	1.76	0.09
MTPS II	1.75	0.08
AHSP_ANTP	1.70	0.08
GSECL P-II	1.63	0.08
RSTPS_FSPP	1.62	0.08
AVAADA2_PVGD	1.60	0.08
AZURE34_SLR	1.59	0.08
COASTGEN	1.56	0.08
AKSP_ANTP	1.53	0.07
TPSL	1.51	0.07
PONDICHERRY	1.50	0.07
TRIPURA	1.48	0.07
ADANI GREEN	1.45	0.07
BETAM_TCN	1.44	0.07
YARROW_PVGD	1.38	0.07
KARCHAM WANGTOO	1.36	0.07
RENEW_ROSHNI	1.32	0.06
GMR KAMALANGA	1.30	0.06
RAP C	1.30	0.06
Railways_ER ISTS	1.26	0.06
ABSP_ANTP	1.26	0.06
AKS_PVGD	1.26	0.06
FRV_NPK	1.25	0.06
MYTRAH_TCN	1.21	0.06
KSK MAHANADI	1.20	0.06
DB POWER	1.17	0.06
RGPL	1.14	0.06
JAYPEE NIGRIE	1.14	0.06
JSW_RENEW_2	1.13	0.05
TPREL_RADHANESDA	1.03	0.05
GIPCL_RADHANESDA	1.03	0.05
DGEN MEGA POWER	0.98	0.05
RANGANADI HEP	0.92	0.04
SKS POWER	0.90	0.04
NEP	0.83	0.04
RENEW_SLR	0.77	0.04
SRSSFPL	0.74	0.04
ADHUNIK POWER LTD	0.66	0.03
DCPP	0.42	0.02
MEENAKSHI	0.41	0.02
NJPC	0.41	0.02
MIZORAM	0.41	0.02
GSECL_Radhanesda	0.39	0.02
MAITHON POWER LTD	0.38	0.02
RANGIT HEP	0.36	0.02
LANKO KONDAPALLI	0.34	0.02
NAGALAND	0.28	0.01

DOYANG HEP	0.28	0.01
TRN ENERGY	0.27	0.01
KOTESHWAR	0.20	0.01
EMCO	0.20	0.01
PARE HEP	0.19	0.01
SAINJ HEP	0.16	0.01
RAMPUR HEP	0.14	0.01
RONGNICHU HEP	0.13	0.01
AD HYDRO	0.13	0.01
IL&FS	0.13	0.01
LOKTAK	0.11	0.01
CHUZACHEN HEP	0.10	0.005
HVDC PUS	0.10	0.005
SASAN UMPP	0.07	0.003
NFF	0.06	0.003
JORETHANG	0.04	0.002
SINGOLI BHATWARI HEP	0.04	0.002
SORANG HEP	0.04	0.002
LANCO BUDHIL	0.03	0.002
DAGACHU	0.02	0.001
HVDC ALPD	0.02	0.001
ONGC PALATANA	0.01	0.0004
LANKO_AMK	0.003	0.0002
TASHIDENG HEP	0.003	0.0001
POWERGRID HVDC	0.0001	0.00001
TOTAL	2061.93	100.00
Volume Imported by top 5 Regional Entities	479.01	23.23

Table-32: VOLUME AND PRICE OF RENEWABLE ENERGY CERTIFICATES (RECs) TRANSACTED THROUGH POWER EXCHANGES AND THROUGH TRADERS (BILATERAL), NOVEMBER 2023

Sr. No	Details of REC Transactions	Through Power Exchange			Bilateral through Traders
		IEX	PXIL	HPX	
1	Volume of Buy Bid	1036954	810810	205	-
2	Volume of Sell Bid	14459642	7418330	2282	-
3	Ratio of Buy Bid to Sell Bid Volume	0.07	0.11	0.09	-
4	Traded Volume (MWh)	754970	594426	205.0	465342
5	Weighted Average Price (₹/MWh)	375.00	375.00	450.00	360.00

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-33(a): VOLUME AND PRICE OF CROSS BORDER TRADE THROUGH DAY AHEAD MARKET AT IEX, NOVEMBER 2023

Sr. No.	Neighbouring Country	Volume (MU)			Weighted Average Price (₹/kWh)	
		Sale	Purchase	Net*	Sale	Purchase
1	Nepal	262.68	0.00	-262.68	4.02	-
2	Bhutan	14.42	0.00	-14.42	4.14	-
	Total	277.10	0.00	-277.10	-	-

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

Table-33(b): VOLUME AND PRICE OF CROSS BORDER TRADE THROUGH REAL TIME MARKET AT IEX, NOVEMBER 2023

Sr. No.	Neighbouring Country	Volume (MU)			Weighted Average Price (₹/kWh)	
		Sale	Purchase	Net*	Sale	Purchase
1	Nepal	10.53	0.00	-10.53	3.53	-
2	Bhutan	0.00	0.00	0.00	-	-
	Total	10.53	0.00	-10.53	-	-

Source: IEX

* Net indicates difference of volume purchased and sold by the respective neighbouring country

Note: No Cross Border transactions were recorded in RTM at PXIL and HPX



Economics Division
Central Electricity Regulatory Commission
36, Janpath, Chanderlok Building