

Monthly Report on Short-term Transactions of Electricity in India

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Contents

S.No.	Contents	Page No
	Contents	i
	List of Tables	ii
	List of Figures	iii
	Abbreviations	iv
1	Introduction	1
2	Volume of Short-term Transactions of Electricity and DSM	1
3	Price of Short-term Transactions of Electricity and DSM Charges	3
3.1	<i>Price of electricity transacted through Traders</i>	3
3.2	<i>Price of electricity transacted through Power Exchanges</i>	4
3.3	<i>DSM Charges</i>	4
4	Trading Margin	4
5	Volume of Short-term Transactions of Electricity (Regional Entity-wise)	5
6	Congestion on Inter-State Transmission Corridor for Day-Ahead Market and Real-Time Market on Power Exchanges	6
7	Volume and Price of Renewable Energy Certificates (RECs)	6
8	Inferences	7

S.No.	List of Tables	Page No.
Table-1	Volume of Short-term Transactions of Electricity and DSM (All India)	10
Table-2	Percentage Share of Electricity Transacted by Trading Licensees	12
Table-3	Price of Electricity Transacted through Traders	13
Table-4	Price of Electricity Transacted through Traders (Time-wise)	13
Table-5	Price of Electricity Transacted in Day Ahead Market through Power Exchanges	13
Table-6	Price of Electricity Transacted in Green Day Ahead Market through Power Exchanges	13
Table-7	Price of Electricity Transacted in High Price Day Ahead Market through Power Exchanges	13
Table-8	Price of Electricity Transacted in Real Time Market through Power Exchanges	13
Table-9	Volume and Price of Electricity in Term Ahead Market of IEX	13
Table-10	Volume and Price of Electricity in Term Ahead Market of PXIL	14
Table-11	Volume and Price of Electricity in Term Ahead Market of HPX	14
Table-12	Volume and Price of Electricity in Green Term Ahead Market of IEX	14
Table-13	Volume and Price of Electricity in Green Term Ahead Market of PXIL	14
Table-14	Volume and Price of Electricity in Green Term Ahead Market of HPX	14
Table-15	Volume and Price of Electricity in High Price Term Ahead Market of IEX	14
Table-16	Volume and Price of Electricity in High Price Term Ahead Market of PXIL	14
Table-17	Volume and Price of Electricity in High Price Term Ahead Market of HPX	14
Table-18	Volume of Electricity Sold in Day Ahead Market through Power Exchanges	16
Table-19	Volume of Electricity Purchased in Day Ahead Market through Power Exchanges	18
Table-20	Volume of Electricity Sold in Green Day Ahead Market through Power Exchanges	19
Table-21	Volume of Electricity Purchased in Green Day Ahead Market through Power Exchanges	20
Table-22	Volume of Electricity Sold in Real Time Market through Power Exchanges	21
Table-23	Volume of Electricity Purchased in Real Time Market through Power Exchanges	23
Table-24	Total Volume of Net Transactions through Power Exchanges (Regional Entity-wise)	24
Table-25	Details of Congestion in Power Exchanges	26
Table-26	Volume of Transactions through Power Exchanges (Day-wise)	27
Table-27(a)	Price of Day Ahead Transactions of Electricity (Day-Wise)	28
Table-27(b)	Price of Green Day Ahead Transactions of Electricity (Day-Wise)	29
Table-27(c)	Price of Real Time Transactions of Electricity (Day-Wise)	30
Table-27(d)	Price of High Price Day Ahead Transactions of Electricity (Day-Wise)	31
Table-28	Volume of Transactions through Power Exchanges (Regional Entity-wise)	32
Table-29	Volume and Charges under DSM (Day wise)	34
Table-30	Volume of Electricity Under drawal/ Over Injection (Exported) under DSM	35
Table-31	Volume of Electricity Over drawal/ Under Injection (Imported) under DSM	39
Table-32	Volume and Price of Renewable Energy Certificates (RECs) Transacted through Power Exchanges and through Traders (Bilateral)	43
Table-33(a)	Volume and Price of Cross Border Trade through Day Ahead Market at IEX	43
Table-33(b)	Volume and Price of Cross Border Trade through Real Time Market at IEX	43

S. No.	List of Figures	Page No.
Figure-1	Volume of various kinds of Electricity Transactions in Total Electricity Generation	10
Figure-2	Volume of Short-term Transactions of Electricity and DSM Volume	10
Figure-3	Volume transacted in different markets segments on Power Exchanges	11
Figure-4	Volume of transactions on Power Exchange and DSM Volume (Day-wise)	11
Figure-5	Percentage Share of Electricity Transacted by Trading Licensees	12
Figure-6	Weighted Average Price of Short-term Transactions of Electricity	15
Figure-7	Weighted Average Price of Short-term Transactions of Electricity (Day-wise)	15

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
 ALTRA XERGI
 AMP_GREEN6
 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

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
 Alfano Group Wind Project, Bhuj, Gujarat
 Altra Xergi Power Private Limited
 Amp Energy Green Six Private Limited
 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

CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CGPL	Coastal Gujarat Power Limited
CHUKHA HEP	Chhukha Hydroelectric Project, Bhutan
CHUZACHEN HEP	Chuzachen Hydro Electric Power Project
CLEAN_SLR	Clean Solar Power Pvt. Ltd
CLEANSPLR	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	Doyang Hydro 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 Radhanesda 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	Pasauli High 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
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
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_TCIN	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_TCIN	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
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 **December 2023** is presented in the following sections.

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

2.1. During December 2023, total electricity generation, excluding generation from renewable and captive power plants in India, was 115981.78 MU (Table-1). Of the total electricity generation, 13.17% was transacted through short-term and DSM, comprising of 6.38% through power exchanges {Day Ahead Market (DAM) (including G-DAM) and Real Time Market (RTM)}, followed by 4.90% through bilateral¹ (through Traders and Term-Ahead contracts on power exchanges, and directly between distribution companies), and 1.90% through DSM (Table-1 & Figure-1).

2.2. Of the total short-term transactions and DSM volume (15274.90 MU), 48.42% was transacted through power exchanges {DAM (including G-DAM & HP-DAM) and RTM}, followed by 37.17% through bilateral (30.58% 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 6.59% directly between distribution companies), and 14.41% 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, 55.52% of the volume was transacted in DAM (including G-DAM & HP-DAM), followed by 26.77% in RTM and 17.71% 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 55 trading licensees as of December 2023. Of which, 32 trading licensees were engaged in short-term trading. The top 5 trading licensees, namely PTC India Ltd., NTPC Vidyut Vyapar Nigam Ltd., Tata Power Trading Company (P) Ltd., Adani Enterprises Ltd. and Arunachal Pradesh Power Corporation (P) Ltd, had a share of 83.28% 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 0.1882 for the month of December 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 4757.55 MU, 3.30 MU and 10.95 MU, respectively. The volume of total buy bids and sell bids was 8271.87 MU and 9200.31 MU, respectively in IEX, 26.08 MU and 54.96 MU, respectively in PXIL, while the same was 16.09 MU and 35.50 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 8.16 MU, while the volume purchased was 329.01

MU, 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 218.76 MU, while no electricity was transacted in the G-DAM of PXIL and HPX. The volume of total buy bids and sell bids was 1538.92 MU and 337.89 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 0.52 MU and 802.98 MU, respectively in IEX. No bids were received in PXIL and HPX.

2.10. The volume of electricity transacted in the RTM of IEX, PXIL and HPX was 2404.59 MU, 0.68 MU and 0.75 MU, respectively. The volume of total buy bids and sell bids was 4606.06 MU and 4956.45 MU, respectively in IEX, 0.86 MU and 1.35 MU, respectively in PXIL, while the same was 0.77 MU and 3.03 MU, respectively in HPX. The variation in the volume of buy bids and sell bids placed through power exchanges shows variation in the demand and supply position.

2.11. Of the total volume of electricity transacted in the RTM of IEX, the volume sold by the neighbouring countries of India was 4.45 MU, while the volume purchased was 11.95 MU, 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 1220.15 MU, 165.46 MU and 179.26 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 15.48 MU, 1.64 MU and 9.86 MU, respectively (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 ₹4.27/kWh, ₹8.55/kWh and ₹6.35/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 ₹6.31/kWh and ₹6.51/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 ₹2.05/kWh, ₹10.00/kWh and ₹4.69/kWh, respectively. These prices in the DAM of PXIL were ₹4.35/kWh, ₹10.00/kWh and ₹9.54/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 ₹2.85/kWh, ₹10.00/kWh and ₹4.86/kWh, respectively (Table-6). The minimum, maximum and weighted average prices for the electricity transacted in the RTM of IEX were ₹0.99/kWh, ₹10.00/kWh and ₹4.61/kWh, respectively. These prices in the RTM of PXIL were ₹10.00/kWh, ₹10.00/kWh and ₹10.00/kWh respectively. The minimum, maximum and weighted average prices for the electricity transacted in the RTM of HPX were ₹7.00/kWh, ₹10.00/kWh and ₹9.05/kWh respectively (Table-8). The weighted average price of electricity transacted in the TAM of IEX, PXIL and HPX was ₹5.95/kWh, ₹7.93/kWh and ₹7.79/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 ₹6.32/kWh, ₹5.90/kWh and ₹6.19/kWh, respectively (Table-12, Table-13 and Table-14). No electricity was transacted in G-DAM of PXIL & HPX, in HP-DAM and HP-TAM of all power exchanges.

3.3. **DSM Charges:** The minimum, maximum and average charge under DSM was ₹2.05/kWh, ₹10.00/kWh and ₹5.59/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) & (d) 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 ₹0.030/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 47.68% of the volume, and these were Chhattisgarh, Uttar Pradesh, Essar Power, Madhya Pradesh and Jindal India Thermal Power Ltd. (Table-18). The top 5 regional entities/states purchased 55.99% of the volume, and these were Telangana, Gujarat, Maharashtra, Andhra Pradesh and Punjab (Table-19).

5.2. Of the total G-DAM transactions at power exchanges, the top 5 regional entities/states sold 48.29% of the volume, and these were Adani Wind Energy, Renew Surya Roshni Private Limited Koppal PS, Ostro Energy Private Limited Hiriyur, Adani Solar Energy Jodhpur Two Ltd. and Madhya Pradesh (Table-20). The top 5 regional entities/states purchased 78.95% of the volume, and these were Arcelor Mittal Nippon Steel Hazira, Delhi, Tamil Nadu, Damodar Valley Corporation and Bharat Aluminum Company Limited (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 49.41% of the volume, and these were Madhya Pradesh, Bihar, Rajasthan, Uttar Pradesh and Odisha (Table-22). The top 5 regional entities/states purchased 52.81% of the volume, and these were Telangana, Kerala, Punjab, Uttar Pradesh and Andhra Pradesh (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 Chhattisgarh, Madhya Pradesh, Essar Power, Bihar and Jindal India Thermal Power Ltd. The top 5 electricity purchasing regional entities/states of power exchange transactions were Telangana, Gujarat, Punjab, Andhra Pradesh and Kerala.

5.6. Of the total under-drawal/ over-injection volume under DSM in December 2023, the top 5 regional entities/states accounted for 25.50% of the volume, and these were NTPC

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.

Stations (Eastern Region), Madhya Pradesh, Rajasthan, NTPC Stations (Northern Region) and Gujarat (Table-30). The top 5 regional entities/states under DSM accounted for 25.25% of the total over-drawal/ under-injection volume, and these were NTPC Stations (Eastern Region), NTPC Stations (Northern Region), NTPC Stations (Western Region), West Bengal 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 December 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 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.

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.

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 December 2023 are shown in Table-32. The market clearing volume of RECs transacted on IEX, PXIL and HPX was 1052230, 216911 and 10000, respectively. The weighted average market clearing price of these RECs was ₹362/MWh in IEX, ₹371/MWh in PXIL and ₹375/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 0.09, 0.14 and 0.34 in IEX, PXIL and HPX, respectively.

7.6. The volume of RECs transacted through Trading Licensees in December 2023 was 409073. The weighted average trade price for the RECs transacted through traders was ₹357/MWh.

8. Inferences:

- a) The percentage of short-term transactions of electricity and DSM volume to total electricity generation was 13.17%.
- b) Of the total short-term transactions and DSM volume (15274.90 MU), 48.42% was transacted through power exchanges {DAM (including G-DAM & HP-DAM) and RTM}, followed by 37.17% through bilateral (30.58% through Traders and Term-Ahead contracts on power exchanges, and 6.59% directly between distribution companies), and 14.41% through DSM.

- c) Of the total volume of electricity transacted through power exchanges, 55.52% of the volume was transacted in DAM (including G-DAM & HP-DAM), followed by 26.77% in RTM and 17.71% in Term Ahead Market (TAM) (including G-TAM & HP-TAM).
- d) The top 5 trading licensees had a share of 83.28% 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 0.1882, indicating moderate concentration of market power.
- f) The weighted average sale price of electricity transacted through trading licensees was ₹6.35/kWh.
- g) The weighted average price of electricity transacted in DAM of IEX, PXIL and HPX was ₹4.69/kWh, ₹9.54/kWh and ₹10.00/kWh. The weighted average price of electricity transacted in G-DAM of IEX was ₹4.86/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, PXIL and HPX was ₹4.61/kWh, ₹10.00/kWh and ₹9.05/kWh respectively.
- h) The weighted average price of electricity transacted in TAM of IEX, PXIL and HPX was ₹5.95/kWh, ₹7.93/kWh and ₹7.79/kWh, respectively. The weighted average price of electricity transacted in G-TAM of IEX, PXIL and HPX was ₹6.32/kWh, ₹5.90/kWh and ₹6.19/kWh, respectively. No volume was traded in HP-TAM in any of the power exchanges.
- i) The average charge under DSM was ₹5.59/kWh.
- j) The weighted average trading margin charged by the trading licensees for bilateral transactions was ₹0.030/kWh.
- k) The top 5 electricity selling regional entities/states of power exchange transactions were Chhattisgarh, Madhya Pradesh, Essar Power, Bihar and Jindal India Thermal Power Ltd. The top 5 electricity purchasing regional entities/states of power exchange transactions were Telangana, Gujarat, Punjab, Andhra Pradesh and Kerala.

- l) The top 5 under-drawing/ over-injecting regional entities/states under DSM were NTPC Stations (Eastern Region), Madhya Pradesh, Rajasthan, NTPC Stations (Northern Region) and Gujarat. The top 5 over-drawing/ under-injecting regional entities/states under DSM were NTPC Stations (Eastern Region), NTPC Stations (Northern Region), NTPC Stations (Western Region), West Bengal and NTPC Stations (Southern Region).
- m) During the month of December 2023, no congestion was experienced in power exchange transactions.
- n) The market clearing volume of RECs transacted on IEX, PXIL and HPX was 1052230, 216911 and 10000, respectively. The weighted average market clearing price of these RECs was ₹362/MWh in IEX, ₹371/MWh in PXIL and ₹375/MWh in HPX. The volume of RECs transacted through Trading Licensees in December 2023 was 409073. The weighted average trade price for the RECs transacted through traders was ₹357/MWh.

Table-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY AND DSM (ALL INDIA), DECEMBER 2023				
Sr. No	Transaction	Volume (MU)	% to short-term transactions and DSM Volume	% to Total Generation
A	Short-term transactions			
1	Bilateral*	5677.79	37.17	4.90
	(i) Through Traders and PXs	4671.57	30.58	4.03
	(ii) Direct	1006.21	6.59	0.87
2	Through Power Exchanges	7396.60	48.42	6.38
	(i) IEX			
	(a) DAM	4757.55	31.15	4.10
	(b) RTM	2404.59	15.74	2.07
	(c) GDAM	218.76	1.43	0.19
	(d) HP-DAM	0.00	0.00	0.00
	(ii) PXIL			
	(a) DAM	3.30	0.02	0.003
	(b) RTM	0.68	0.004	0.001
	(c) GDAM	0.00	0.00	0.00
	(d) HP-DAM	0.00	0.00	0.00
	(ii) HPX			
	(a) DAM	10.95	0.07	0.009
	(b) RTM	0.75	0.005	0.001
	(c) GDAM	0.00	0.00	0.00
	(d) HP-DAM	0.00	0.00	0.00
B	Through DSM	2200.52	14.41	1.90
Total Short-term transactions and DSM		15274.90	-	13.17
Total Generation		115981.78	-	-

Source: NLDC

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

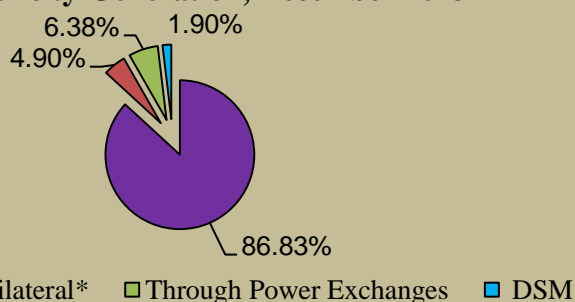
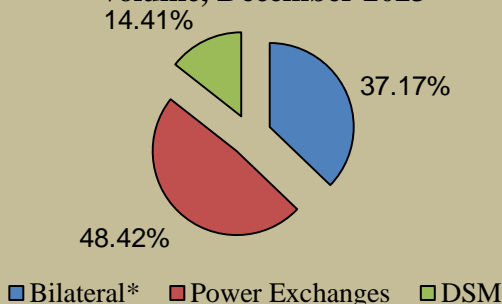


Figure-2: Volume of Short-term Transactions of Electricity and DSM Volume, December 2023



* 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, December 2023

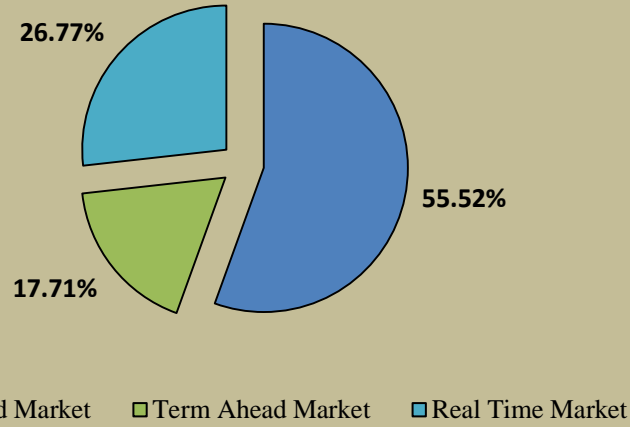


Figure-4: Volume of Transactions on Power Exchange and DSM Volume, December 2023 (Day-wise)

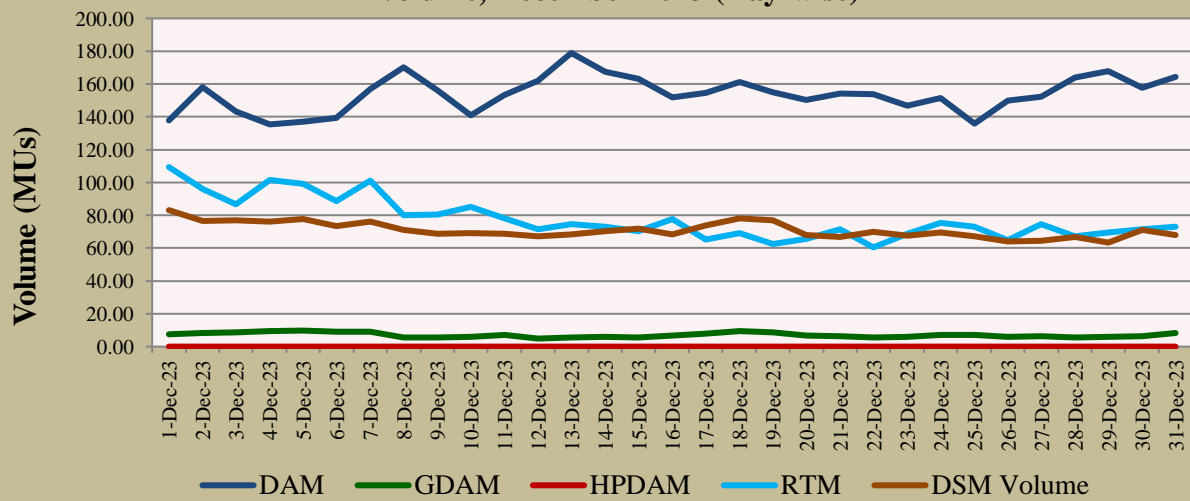


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, DECEMBER 2023		
Sr. No	Name of the Trading Licensee	% Share in total Volume traded by Trading Licensees
1	PTC India Ltd.	33.06
2	NTPC Vidyut Vyapar Nigam Ltd.	20.30
3	Tata Power Trading Company (P) Ltd.	11.12
4	Adani Enterprises Ltd.	10.81
5	Arunachal Pradesh Power Corporation (P) Ltd	8.00
6	Manikaran Power Ltd.	7.60
7	GMR Energy Trading Ltd.	3.21
8	Gita Power & Infrastructure Private Limited	1.49
9	Instinct Infra & Power Ltd.	1.03
10	RPG Power Trading Company Ltd.	0.57
11	Kreate Energy (I) Pvt. Ltd.	0.53
12	JSW Power Trading Company Ltd	0.28
13	Statkraft Markets Pvt. Ltd.	0.22
14	NLC India Ltd.	0.22
15	Adarsh Stainless Pvt. Ltd.	0.17
16	Kundan International Pvt. Ltd.	0.16
17	Ambitious Power Trading Company Ltd.	0.16
18	Saranyu Power Trading Private Limited	0.15
19	Greenko Energies Pvt Ltd	0.13
20	Ideal Energy Solution Pvt. Ltd.	0.13
21	Instant Venture Pvt. Ltd.	0.13
22	Energysedge Power Trading Pvt. Ltd.	0.10
23	SJVN Ltd.	0.09
24	Abja Power Private Limited	0.08
25	Powerfull Energy Trading Pvt. Ltd.	0.07
26	Customized Energy Solutions India (P) Ltd.	0.05
27	Refex Industries Ltd.	0.05
28	Shree Cement Ltd.	0.04
29	ReNew Energy Markets Private Limited	0.03
30	Saini Power Transactor	0.02
31	Phillip Commodities India (P) Ltd.	0.01
32	Shell Energy Marketing and Trading India Pvt. Ltd.	0.003
33	Shubheksha Advisors Pvt. Ltd.	0.003
34	Altium Energie Private Limited	0.001
TOTAL		100.00%
Top 5 trading licensees		83.28%
Herfindahl-Hirschman Index		0.1882
Note 1: Volume of electricity transacted by the trading licensees includes bilateral transactions (inter-state & intra-state) and the transactions undertaken through power exchanges.		
Note 2: Volume of electricity transacted by Global Energy Ltd. is not included.		
Source: Information submitted by trading licensees		

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

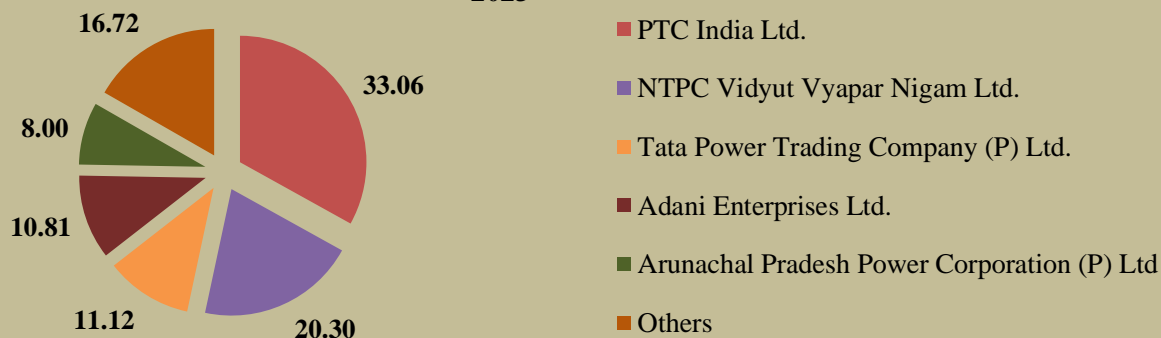


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, DECEMBER 2023

Sr.No	Item	Sale Price of Traders (₹/kWh)
1	Minimum	4.27
2	Maximum	8.55
3	Weighted Average	6.35

Source: Information submitted by trading licensees

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

Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	6.31
2	PEAK	-
3	OFF PEAK	6.51

Source: Information submitted by trading licensees

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

Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)	Price in HPX (₹/kWh)
1	Minimum	2.05	4.35	10.00
2	Maximum	10.00	10.00	10.00
3	Weighted Average	4.69	9.54	10.00

Source: IEX, PXIL and HPX

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

Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)	Price in HPX (₹/kWh)
1	Minimum	2.85	-	-
2	Maximum	10.00	-	-
3	Weighted Average	4.86	-	-

Source: IEX, PXIL and HPX

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

Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)	Price in HPX (₹/kWh)
1	Minimum	0.99	10.00	7.00
2	Maximum	10.00	10.00	10.00
3	Weighted Average	4.61	10.00	9.05

Source: IEX, PXIL and HPX

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

Sr.No	Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	0.94	9.42
2	Day Ahead Contingency Contracts	147.43	6.74
3	Daily Contracts	501.63	5.56
4	Weekly Contracts	65.06	6.15
5	Monthly Contracts	140.74	5.90
6	Any Day Single Sided Contracts	364.35	6.14
	Total	1220.15	5.95

Source: IEX

Table-10: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, DECEMBER 2023			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	13.46	9.22
2	Day Ahead Contingency Contracts	127.82	7.62
3	Daily Contracts	20.93	8.76
4	Monthly Contracts	3.25	9.50
	Total	165.46	7.93

Source: PXIL

Table-11: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF HPX, DECEMBER 2023			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	3.42	9.77
2	Day Ahead Contingency Contracts	72.20	8.68
3	Daily Contracts	20.60	5.65
4	Any Day Single Sided Contracts	83.04	7.45
	Total	179.26	7.79

Source: HPX

Table-12: VOLUME AND PRICE OF ELECTRICITY IN GREEN TERM AHEAD MARKET OF IEX, DECEMBER 2023			
Sr. No	Green Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)
1	Daily Contracts	9.58	6.09
2	Any Day Single Sided Contracts	5.90	6.69
	Total	15.48	6.32

Source: IEX

Table-13: VOLUME AND PRICE OF ELECTRICITY IN GREEN TERM AHEAD MARKET OF PXIL, DECEMBER 2023			
Sr. No	Green Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)
1	Day Ahead Contingency Contracts	1.64	5.90
	Total	1.64	5.90

Source: PXIL

Table-14: VOLUME AND PRICE OF ELECTRICITY IN GREEN TERM AHEAD MARKET OF HPX, DECEMBER 2023			
Sr. No	Green Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)
1	Day Ahead Contingency Contracts	1.54	5.23
2	Daily Contracts	2.28	5.50
3	Any Day Single Sided Contracts	6.05	6.70
	Total	9.86	6.19

Source: HPX

Table-15: VOLUME AND PRICE OF ELECTRICITY IN HIGH PRICE TERM AHEAD MARKET OF IEX, DECEMBER 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

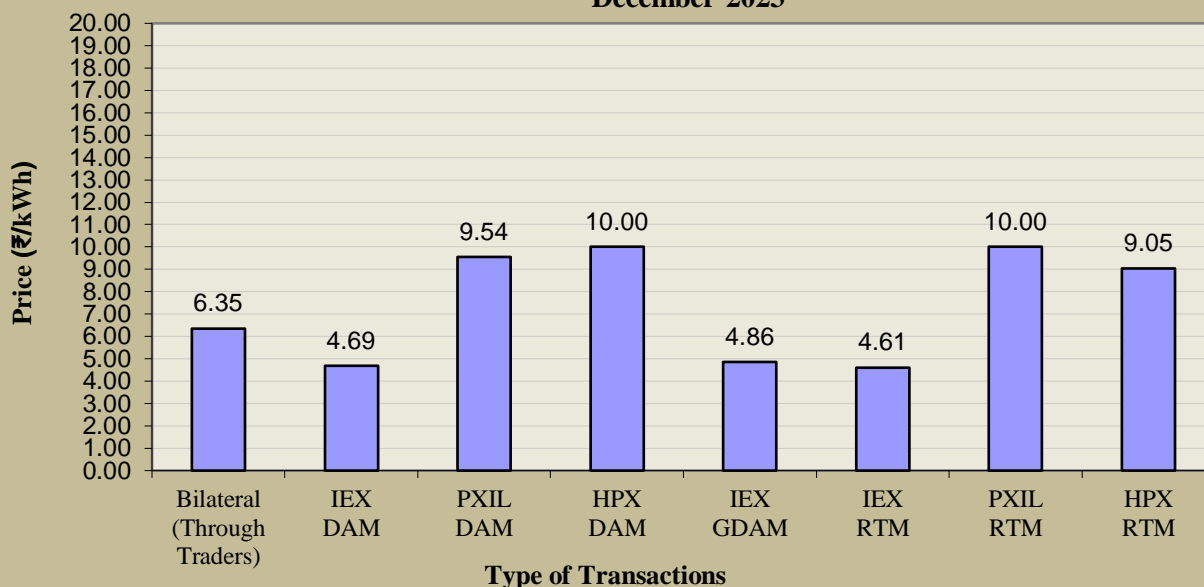
Table-16: VOLUME AND PRICE OF ELECTRICITY IN HIGH PRICE TERM AHEAD MARKET OF PXIL, DECEMBER 2023			
Sr. No	High Price Term ahead contracts	Actual Scheduled Volume (MU)	Weighted Average Price (₹/kWh)
1	No Trade	0.00	-
	Total	0.00	-

Source: PXIL

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

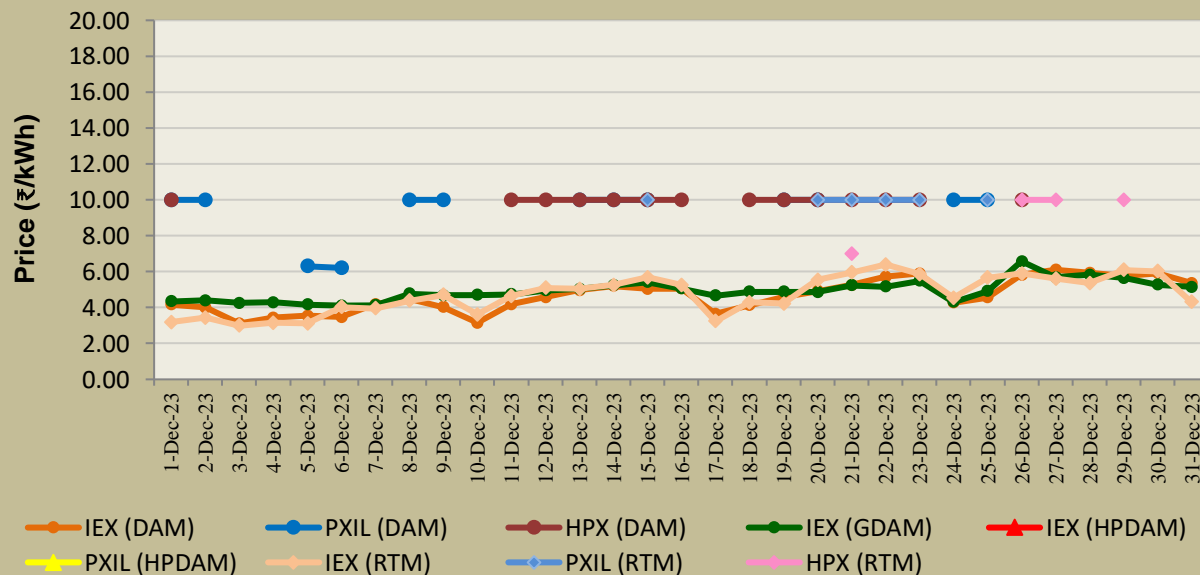
Source: HPX

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



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

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



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

Table-18: VOLUME OF ELECTRICITY SOLD IN DAY AHEAD MARKET THROUGH POWER EXCHANGES, DECEMBER 2023		
Name of the Entity	Volume of Sale (MUs)	% of Volume
CHHATTISGARH	610.42	12.79
UTTAR PRADESH	582.12	12.20
ESSAR POWER	444.39	9.31
MP	349.95	7.33
JITPL	288.41	6.04
RAIGARH_ADANI	241.40	5.06
ODISHA	214.71	4.50
DB POWER	199.84	4.19
BIHAR	125.58	2.63
ARTPP	120.77	2.53
GUJARAT	119.71	2.51
RAJASTHAN	107.85	2.26
JINDAL STAGE-II	106.35	2.23
MAHARASHTRA	99.84	2.09
ACBIL	97.81	2.05
JINDAL POWER	92.48	1.94
JAYPEE NIGRIE	85.05	1.78
HIMACHAL PRADESH	74.07	1.55
SEBICORP	71.24	1.49
HARYANA	67.10	1.41
WEST BENGAL	67.05	1.41
DELHI	62.88	1.32
DCPP	59.97	1.26
PONDICHERRY	52.92	1.11
NTPC STATIONS-ER	49.31	1.03
TELANGANA	32.35	0.68
TAMIL NADU	32.12	0.67
RENEW_SR_SLR	23.52	0.49
ANDHRA PRADESH	22.54	0.47
DVC	20.66	0.43
KARCHAM WANGTOO	19.81	0.42
SKS POWER	18.36	0.38
JHABUA POWER_MP	17.67	0.37
AD HYDRO	15.98	0.33
ADANI_WIND	14.23	0.30
CHANDIGARH	13.15	0.28
SHREE CEMENT	10.96	0.23
MARUTI COAL	10.64	0.22
EMCO	10.63	0.22
ASEJTL_SLR	9.35	0.20
MB POWER	9.04	0.19
RKM POWER	7.83	0.16
SAINJ HEP	6.69	0.14
SORANG HEP	6.42	0.13
IL&FS	6.13	0.13
NEPAL(NVVN)	5.90	0.12
MEGHALAYA	5.35	0.11
ADHUNIK POWER LTD	3.43	0.07
BALCO	3.42	0.07
NTPC STATIONS-SR	3.39	0.07
RENEW_ROSHNI	3.38	0.07
UTTARAKHAND	3.32	0.07
NAGALAND	3.19	0.07
OSTRO Hiriya	2.97	0.06

J & K	2.95	0.06
AMP_GREEN6	2.87	0.06
SINGOLI BHATWARI HEP	2.86	0.06
ONGC PALATANA	2.80	0.06
NTPC STATIONS-WR	2.56	0.05
NPGC	2.33	0.05
NEP	2.26	0.05
KERALA	2.20	0.05
MIZORAM	2.09	0.04
SIKKIM	2.09	0.04
NTPC STATIONS-NR	2.01	0.04
MANIPUR	1.92	0.04
NEEPCO STATIONS	1.89	0.04
NTPC STATIONS-NER	1.74	0.04
GOA	1.55	0.03
DHARIWAL POWER	1.40	0.03
PUNJAB	0.96	0.02
LANCO BUDHIL	0.59	0.01
KBUNL	0.44	0.01
TRIPURA	0.19	0.004
SIMHAPURI	0.19	0.004
RENERGY5_WIND	0.17	0.004
ARUNACHAL PRADESH	0.07	0.001
GMR KAMALANGA	0.03	0.001
Total	4771.81	100.00
Volume sold by top 5 Regional Entities	2275.29	47.68

Table-19: VOLUME OF ELECTRICITY PURCHASED IN DAY AHEAD MARKET THROUGH POWER EXCHANGES, DECEMBER 2023		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
TELANGANA	986.25	20.67
GUJARAT	642.62	13.47
MAHARASHTRA	391.04	8.19
ANDHRA PRADESH	343.55	7.20
PUNJAB	308.21	6.46
UTTAR PRADESH	286.98	6.01
TAMIL NADU	250.26	5.24
DGPCL Bhutan	249.87	5.24
J & K	211.02	4.42
UTTARAKHAND	156.65	3.28
WEST BENGAL	110.24	2.31
HARYANA	97.75	2.05
AMPS Hazira	79.29	1.66
ODISHA	72.89	1.53
RAJASTHAN	72.80	1.53
DD&DNH	70.21	1.47
NEPAL(NVVN)	67.40	1.41
KARNATAKA	65.35	1.37
MP	63.26	1.33
DELHI	53.08	1.11
KERALA	45.92	0.96
NCR ALLAHABAD	26.62	0.56
MEGHALAYA	26.17	0.55
DVC	21.64	0.45
MB POWER	17.49	0.37
GOA	13.46	0.28
NEP	11.74	0.25
JHARKHAND	6.14	0.13
HIMACHAL PRADESH	5.87	0.12
ASSAM	4.74	0.10
SIKKIM	4.34	0.09
CHHATTISGARH	3.63	0.08
CHANDIGARH	1.83	0.04
BALCO	1.11	0.02
NAGALAND	0.95	0.02
ARUNACHAL PRADESH	0.78	0.02
BIHAR	0.43	0.01
MANIPUR	0.22	0.005
TRIPURA	0.04	0.001
TOTAL	4771.81	100.00
Volume purchased by top 5 Regional Entities	2671.67	55.99

Table-20: VOLUME OF ELECTRICITY SOLD IN GREEN DAY AHEAD MARKET THROUGH POWER EXCHANGES, DECEMBER 2023		
Name of the Entity	Volume of Sale (MUs)	% of Volume
ADANI_WIND	41.30	18.88
RENEW_ROSHNI	17.55	8.02
OSTRO Hiriyur	17.38	7.95
ASEJTL_SLR	15.09	6.90
MP	14.30	6.54
UTTAR PRADESH	13.86	6.34
CONTINNUM PT	13.64	6.23
ANDHRA PRADESH	10.38	4.74
J & K	9.40	4.30
RENEW_SR_SLR	9.21	4.21
ALTRA XERGI	8.35	3.81
NTPC STATIONS-SR	7.43	3.40
RENERGY5_WIND	7.19	3.29
AYANA_NPKUNTA	7.13	3.26
SINGOLI BHATWARI HEP	5.52	2.52
HIMACHAL PRADESH	4.98	2.28
TELANGANA	4.24	1.94
RAJASTHAN	3.00	1.37
SORANG HEP	2.21	1.01
SIKKIM	1.68	0.77
INOX_BHUJ	1.59	0.73
MAHARASHTRA	1.56	0.71
HARYANA	1.22	0.56
NTPC STATIONS-WR	0.48	0.22
MEGHALAYA	0.05	0.02
Total	218.76	100.00
Volume sold by top 5 Regional Entities	105.63	48.29

Table-21: VOLUME OF ELECTRICITY PURCHASED IN GREEN DAY AHEAD MARKET THROUGH POWER EXCHANGES, DECEMBER 2023		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
AMPS Hazira	70.77	32.35
DELHI	52.27	23.89
TAMIL NADU	24.42	11.16
DVC	14.06	6.43
BALCO	11.20	5.12
UTTAR PRADESH	5.38	2.46
KARNATAKA	5.07	2.32
MAHARASHTRA	4.63	2.12
RAJASTHAN	4.61	2.11
MP	4.21	1.92
PUNJAB	4.01	1.83
GUJARAT	3.77	1.72
KERALA	3.73	1.70
ANDHRA PRADESH	2.57	1.18
HARYANA	2.25	1.03
NCR ALLAHABAD	1.78	0.81
DD&DNH	1.64	0.75
JHARKHAND	1.19	0.54
ODISHA	0.98	0.45
TELANGANA	0.17	0.08
CHHATTISGARH	0.05	0.02
TOTAL	218.76	100.00
Volume purchased by top 5 Regional Entities	172.71	78.95

Table-22: VOLUME OF ELECTRICITY SOLD IN REAL TIME MARKET THROUGH POWER EXCHANGES, DECEMBER 2023

Name of the Entity	Volume of Sale (MUs)	% of Volume
MP	406.83	16.91
BIHAR	314.25	13.06
RAJASTHAN	210.37	8.74
UTTAR PRADESH	147.55	6.13
ODISHA	109.74	4.56
CHHATTISGARH	109.73	4.56
ASSAM	101.19	4.21
WEST BENGAL	96.31	4.00
NTPC STATIONS-NR	67.98	2.83
NTPC STATIONS-WR	60.14	2.50
MAHARASHTRA	56.24	2.34
NTPC STATIONS-ER	54.09	2.25
SEMBCORP	50.79	2.11
JHARKHAND	48.43	2.01
DELHI	41.54	1.73
TRIPURA	33.41	1.39
TAMIL NADU	30.68	1.28
ANDHRA PRADESH	27.73	1.15
SKS POWER	23.91	0.99
TELANGANA	23.66	0.98
HARYANA	21.47	0.89
NLC	20.57	0.86
DVC	19.80	0.82
J & K	19.04	0.79
JHABUA POWER_MP	18.89	0.79
GUJARAT	17.93	0.75
HIMACHAL PRADESH	16.71	0.69
NPGC	16.69	0.69
UTTARAKHAND	16.41	0.68
PONDICHERRY	16.35	0.68
NTPC STATIONS-SR	15.11	0.63
ESSAR POWER	13.47	0.56
SIMHAPURI	10.38	0.43
NEEPCO STATIONS	10.37	0.43
TRN ENERGY	10.18	0.42
SIKKIM	9.21	0.38
BALCO	8.68	0.36
ACBIL	7.70	0.32
MTPS	7.49	0.31
KERALA	7.11	0.30
ARUNACHAL PRADESH	6.43	0.27
SASAN UMPP	6.25	0.26
PUNJAB	5.63	0.23
NREL_DAYAPAR (W)	5.61	0.23
RAIGARH_ADANI	5.56	0.23
ONGC PALATANA	5.16	0.21
ARTPP	5.12	0.21
DCPP	5.06	0.21
NTPC STATIONS-NER	4.58	0.19
NEPAL(NVVN)	4.45	0.18
RKM POWER	3.96	0.16
MB POWER	3.70	0.15
ADANI_WIND	3.64	0.15
EMCO	3.59	0.15

DB POWER	3.34	0.14
NETCL VALLUR	3.15	0.13
SHREE CEMENT	2.74	0.11
JITPL	2.47	0.10
AMP_GREEN6	2.46	0.10
RENEW_ROSHNI	2.27	0.09
IGSTPS	2.07	0.09
GOA	2.02	0.08
MARUTI COAL	1.92	0.08
IL&FS	1.90	0.08
JINDAL STAGE-II	1.67	0.07
ADHUNIK POWER LTD	1.33	0.06
JAYPEE NIGRIE	1.27	0.05
DD&DNH	1.24	0.05
SINGOLI BHATWARI HEP	1.01	0.04
ALTRA XERGI	1.01	0.04
OSTRO Hiriyur	1.00	0.04
NAGALAND	0.95	0.04
JINDAL POWER	0.89	0.04
RENEW_SR_SLR	0.81	0.03
JORETHANG	0.76	0.03
AYANA_NPKUNTA	0.55	0.02
SORANG HEP	0.34	0.01
MANIPUR	0.33	0.01
DOYANG HEP	0.26	0.01
TASHIDENG HEP	0.26	0.01
RENERGY5_WIND	0.23	0.01
KARNATAKA	0.23	0.01
MEGHALAYA	0.17	0.01
SAINJ HEP	0.10	0.004
AD HYDRO	0.10	0.004
DHARIWAL POWER	0.09	0.004
PARE HEP	0.08	0.003
KARCHAM WANGTOO	0.07	0.003
LANCO BUDHIL	0.07	0.003
ASEJTL_SLR	0.01	0.0003
RANGANADI HEP	0.002	0.0001
GMR KAMALANGA	0.002	0.0001
CHUZACHEN HEP	0.001	0.00005
Total	2406.02	100.00
Volume sold by top 5 Regional Entities	1188.75	49.41

Table-23: VOLUME OF ELECTRICITY PURCHASED IN REAL TIME MARKET THROUGH POWER EXCHANGES, DECEMBER 2023		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
TELANGANA	398.88	16.58
KERALA	331.59	13.78
PUNJAB	232.88	9.68
UTTAR PRADESH	169.98	7.06
ANDHRA PRADESH	137.20	5.70
MAHARASHTRA	131.16	5.45
ODISHA	128.53	5.34
J & K	126.16	5.24
DVC	109.78	4.56
TAMIL NADU	99.98	4.16
GUJARAT	95.81	3.98
WEST BENGAL	74.07	3.08
RAJASTHAN	50.04	2.08
KARNATAKA	45.60	1.90
DELHI	38.15	1.59
SIMHAPURI	29.13	1.21
HIMACHAL PRADESH	26.35	1.10
AMPS Hazira	25.51	1.06
HARYANA	21.45	0.89
JHARKHAND	19.28	0.80
UTTARAKHAND	19.04	0.79
DD&DNH	18.39	0.76
MEGHALAYA	11.20	0.47
MB POWER	9.34	0.39
MP	8.03	0.33
JORETHANG	6.72	0.28
DCPP	5.63	0.23
ARUNACHAL PRADESH	5.06	0.21
RONGNICHU HEP	4.95	0.21
CHHATTISGARH	3.72	0.15
MANIPUR	3.70	0.15
BALCO	3.07	0.13
NCR ALLAHABAD	2.64	0.11
ESSAR POWER	2.13	0.09
NTPC STATIONS-WR	1.71	0.07
ASSAM	1.57	0.07
JINDAL STAGE-II	1.50	0.06
GOA	1.31	0.05
JAYPEE NIGRIE	1.22	0.05
RGPPPL_IR	0.77	0.03
ARTPP	0.63	0.03
BIHAR	0.54	0.02
TRIPURA	0.36	0.01
CHANDIGARH	0.31	0.01
NEP	0.28	0.01
ACBIL	0.26	0.01
MARUTI COAL	0.25	0.01
SIKKIM	0.13	0.01
SAINJ HEP	0.02	0.001
NETCL VALLUR	0.01	0.001
DHARIWAL POWER	0.01	0.0005
SKS POWER	0.001	0.0001
TOTAL	2406.02	100.00
Volume purchased by top 5 Regional Entities	1270.54	52.81

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

S. No.	Name of the Entity	Total volume of net transactions through Power Exchanges*
1	TELANGANA	1325.05
2	GUJARAT	604.55
3	PUNJAB	538.51
4	ANDHRA PRADESH	422.68
5	KERALA	371.93
6	MAHARASHTRA	369.20
7	TAMIL NADU	311.87
8	J & K	305.79
9	DGPCL Bhutan	249.87
10	AMPS Hazira	175.57
11	UTTARAKHAND	155.95
12	KARNATAKA	115.80
13	DVC	105.02
14	DD&DNH	89.01
15	NEPAL(NVVN)	57.05
16	DELHI	39.08
17	MEGHALAYA	31.80
18	HARYANA	31.67
19	NCR ALLAHABAD	31.04
20	WEST BENGAL	20.95
21	SIMHAPURI	18.56
22	MB POWER	14.08
23	GOA	11.20
24	NEP	9.76
25	JORETHANG	5.97
26	RONGNICHU HEP	4.95
27	BALCO	3.27
28	MANIPUR	1.66
29	RGPL IR	0.77
30	CHUZACHEN HEP	-0.001
31	RANGANADI HEP	-0.002
32	GMR KAMALANGA	-0.03
33	PARE HEP	-0.08
34	TASHIDENG HEP	-0.26
35	DOYANG HEP	-0.26
36	KBUNL	-0.44
37	ARUNACHAL PRADESH	-0.66
38	LANCO BUDHIL	-0.66
39	DHARIWAL POWER	-1.47
40	INOX BHUJ	-1.59
41	IGSTPS	-2.07
42	MIZORAM	-2.09
43	NETCL VALLUR	-3.13
44	NAGALAND	-3.20
45	ADHUNIK POWER LTD	-4.76
46	AMP_GREEN6	-5.33
47	NREL_DAYAPAR (W)	-5.61
48	SASAN UMPP	-6.25
49	NTPC STATIONS-NER	-6.32
50	SAINJ HEP	-6.77
51	MTPS	-7.49
52	REENERGY5_WIND	-7.59
53	AYANA_NPKUNTA	-7.69
54	ONGC PALATANA	-7.96
55	IL&FS	-8.03
56	SIKKIM	-8.52
57	SORANG HEP	-8.98
58	ALTRA XERGI	-9.36
59	SINGOLI BHATWARI HEP	-9.39
60	TRN ENERGY	-10.18
61	CHANDIGARH	-11.01
62	RKM POWER	-11.79

63	NEEPCO STATIONS	-12.26
64	MARUTI COAL	-12.31
65	CONTINNUM PT	-13.64
66	SHREE CEMENT	-13.70
67	EMCO	-14.22
68	AD HYDRO	-16.08
69	NPGC	-19.01
70	KARCHAM WANGTOO	-19.88
71	NLC	-20.57
72	OSTRO Hiriyur	-21.35
73	JHARKHAND	-21.83
74	RENEW_ROSHNI	-23.20
75	ASEJTL_SLR	-24.45
76	NTPC STATIONS-SR	-25.93
77	TRIPURA	-33.21
78	RENEW_SR_SLR	-33.54
79	JHABUA POWER_MP	-36.57
80	SKS POWER	-42.27
81	ADANI_WIND	-59.17
82	DCPP	-59.40
83	NTPC STATIONS-WR	-61.47
84	HIMACHAL PRADESH	-63.54
85	PONDICHERRY	-69.27
86	NTPC STATIONS-NR	-70.00
87	JAYPEE NIGRIE	-85.10
88	JINDAL POWER	-93.38
89	ASSAM	-94.88
90	NTPC STATIONS-ER	-103.40
91	ACBIL	-105.25
92	JINDAL STAGE-II	-106.52
93	SEMBICORP	-122.03
94	ODISHA	-122.06
95	ARTPP	-125.25
96	RAJASTHAN	-193.77
97	DB POWER	-203.18
98	RAIGARH_ADANI	-246.96
99	UTTAR PRADESH	-281.20
100	JITPL	-290.88
101	BIHAR	-438.86
102	ESSAR POWER	-455.73
103	MP	-695.58
104	CHHATTISGARH	-712.75
* 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, DECEMBER 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	HPX	IEX	PXIL	HPX
1	Unconstrained Cleared Volume (MUs)	4757.55	3.30	10.95	218.76	0.00	0.00	0.00	0.00	0.00	2404.59	0.68	0.75
2	Actual Cleared Volume and hence scheduled (MUs)	4757.55	3.30	10.95	218.76	0.00	0.00	0.00	0.00	0.00	2404.59	0.68	0.75
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	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	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%	0.00%	0.00%	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%	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%	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%	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%	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%	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 (DAY-WISE) (MUs),
DECEMBER 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-Dec-23	137.51	0.19	0.05	7.64	0.00	0.00	0.00	0.00	0.00	109.42	0.00	0.00	3526.25
2-Dec-23	157.59	0.40	0.00	8.48	0.00	0.00	0.00	0.00	0.00	96.07	0.00	0.00	3448.67
3-Dec-23	143.44	0.00	0.00	8.57	0.00	0.00	0.00	0.00	0.00	86.78	0.00	0.00	3309.00
4-Dec-23	135.43	0.00	0.00	9.52	0.00	0.00	0.00	0.00	0.00	101.50	0.00	0.00	3349.31
5-Dec-23	136.83	0.18	0.00	9.77	0.00	0.00	0.00	0.00	0.00	99.09	0.00	0.00	3386.11
6-Dec-23	139.12	0.23	0.00	9.20	0.00	0.00	0.00	0.00	0.00	88.76	0.00	0.00	3501.79
7-Dec-23	156.89	0.00	0.00	8.91	0.00	0.00	0.00	0.00	0.00	101.08	0.00	0.00	3598.12
8-Dec-23	170.06	0.10	0.00	5.66	0.00	0.00	0.00	0.00	0.00	80.11	0.00	0.00	3678.79
9-Dec-23	155.89	0.39	0.00	5.58	0.00	0.00	0.00	0.00	0.00	80.35	0.00	0.00	3660.51
10-Dec-23	140.89	0.00	0.00	6.00	0.00	0.00	0.00	0.00	0.00	85.16	0.00	0.00	3506.66
11-Dec-23	152.89	0.00	0.50	7.28	0.00	0.00	0.00	0.00	0.00	78.09	0.00	0.00	3695.99
12-Dec-23	161.22	0.00	0.93	4.89	0.00	0.00	0.00	0.00	0.00	71.41	0.00	0.00	3788.19
13-Dec-23	177.90	0.25	0.80	5.73	0.00	0.00	0.00	0.00	0.00	74.54	0.00	0.00	3801.23
14-Dec-23	166.84	0.06	0.63	6.05	0.00	0.00	0.00	0.00	0.00	72.91	0.00	0.00	3812.27
15-Dec-23	162.37	0.04	0.82	5.69	0.00	0.00	0.00	0.00	0.00	70.15	0.10	0.00	3906.96
16-Dec-23	151.36	0.00	0.38	6.76	0.00	0.00	0.00	0.00	0.00	77.74	0.00	0.00	3900.00
17-Dec-23	154.64	0.00	0.00	7.83	0.00	0.00	0.00	0.00	0.00	65.28	0.00	0.00	3643.86
18-Dec-23	161.14	0.00	0.22	9.64	0.00	0.00	0.00	0.00	0.00	69.21	0.00	0.00	3663.34
19-Dec-23	154.51	0.10	0.31	8.65	0.00	0.00	0.00	0.00	0.00	62.61	0.00	0.00	3767.74
20-Dec-23	149.17	0.06	1.18	6.72	0.00	0.00	0.00	0.00	0.00	65.47	0.09	0.00	3862.89
21-Dec-23	152.87	0.00	1.24	6.36	0.00	0.00	0.00	0.00	0.00	71.15	0.10	0.24	3942.29
22-Dec-23	151.94	0.00	1.90	5.57	0.00	0.00	0.00	0.00	0.00	60.40	0.10	0.00	4027.02
23-Dec-23	145.35	0.00	1.64	5.77	0.00	0.00	0.00	0.00	0.00	68.46	0.14	0.00	3913.08
24-Dec-23	151.08	0.25	0.00	6.93	0.00	0.00	0.00	0.00	0.00	75.45	0.00	0.00	3724.87
25-Dec-23	134.77	1.06	0.00	7.21	0.00	0.00	0.00	0.00	0.00	72.81	0.16	0.00	3838.17
26-Dec-23	149.64	0.00	0.38	5.95	0.00	0.00	0.00	0.00	0.00	64.63	0.00	0.21	3950.79
27-Dec-23	152.25	0.00	0.00	6.28	0.00	0.00	0.00	0.00	0.00	74.52	0.00	0.16	3915.84
28-Dec-23	164.04	0.00	0.00	5.68	0.00	0.00	0.00	0.00	0.00	67.09	0.00	0.00	3935.14
29-Dec-23	167.86	0.00	0.00	5.78	0.00	0.00	0.00	0.00	0.00	69.49	0.00	0.15	4026.35
30-Dec-23	157.73	0.00	0.00	6.35	0.00	0.00	0.00	0.00	0.00	71.65	0.00	0.00	4034.35
31-Dec-23	164.32	0.00	0.00	8.30	0.00	0.00	0.00	0.00	0.00	73.20	0.00	0.00	3866.20
Total	4757.55	3.30	10.95	218.76	0.00	0.00	0.00	0.00	0.00	2404.59	0.68	0.75	115981.78

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), DECEMBER 2023									
Market Segment	Day Ahead Market of IEX			Day Ahead Market of PXIL			Day Ahead Market of HPX		
Date	Minimum ACP	Maximum ACP	WA Price*	Minimum ACP	Maximum ACP	WA Price*	Minimum ACP	Maximum ACP	WA Price*
1-Dec-23	2.63	10.00	4.17	10.00	10.00	10.00	10.00	10.00	10.00
2-Dec-23	2.66	10.00	4.00	10.00	10.00	10.00	-	-	-
3-Dec-23	2.15	4.44	3.12	-	-	-	-	-	-
4-Dec-23	2.05	8.00	3.44	-	-	-	-	-	-
5-Dec-23	2.15	7.00	3.53	6.30	6.30	6.30	-	-	-
6-Dec-23	2.15	6.50	3.47	4.35	6.50	6.21	-	-	-
7-Dec-23	2.12	10.00	4.19	-	-	-	-	-	-
8-Dec-23	2.10	10.00	4.47	10.00	10.00	10.00	-	-	-
9-Dec-23	2.05	10.00	4.02	10.00	10.00	10.00	-	-	-
10-Dec-23	2.10	5.04	3.15	-	-	-	-	-	-
11-Dec-23	2.47	10.00	4.18	-	-	-	10.00	10.00	10.00
12-Dec-23	2.53	10.00	4.58	-	-	-	10.00	10.00	10.00
13-Dec-23	2.53	10.00	4.97	10.00	10.00	10.00	10.00	10.00	10.00
14-Dec-23	2.65	10.00	5.20	10.00	10.00	10.00	10.00	10.00	10.00
15-Dec-23	2.85	10.00	5.03	10.00	10.00	10.00	10.00	10.00	10.00
16-Dec-23	2.96	10.00	5.06	-	-	-	10.00	10.00	10.00
17-Dec-23	2.96	6.19	3.65	-	-	-	-	-	-
18-Dec-23	2.34	10.00	4.13	-	-	-	10.00	10.00	10.00
19-Dec-23	2.40	10.00	4.59	10.00	10.00	10.00	10.00	10.00	10.00
20-Dec-23	2.45	10.00	4.92	10.00	10.00	10.00	10.00	10.00	10.00
21-Dec-23	2.85	10.00	5.25	-	-	-	10.00	10.00	10.00
22-Dec-23	3.00	10.00	5.71	-	-	-	10.00	10.00	10.00
23-Dec-23	3.13	10.00	5.89	-	-	-	10.00	10.00	10.00
24-Dec-23	2.81	9.85	4.28	10.00	10.00	10.00	-	-	-
25-Dec-23	2.75	10.00	4.56	10.00	10.00	10.00	-	-	-
26-Dec-23	3.00	10.00	5.82	-	-	-	10.00	10.00	10.00
27-Dec-23	3.00	10.00	6.10	-	-	-	-	-	-
28-Dec-23	3.00	10.00	5.94	-	-	-	-	-	-
29-Dec-23	2.99	10.00	5.75	-	-	-	-	-	-
30-Dec-23	2.88	10.00	5.91	-	-	-	-	-	-
31-Dec-23	2.45	10.00	5.37	-	-	-	-	-	-
	2.05[#]	10.00[#]	4.69	4.35[#]	10.00[#]	9.54	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),
DECEMBER 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-Dec-23	3.57	10.00	4.34	-	-	-	-	-	-
2-Dec-23	3.68	10.00	4.40	-	-	-	-	-	-
3-Dec-23	3.50	10.00	4.26	-	-	-	-	-	-
4-Dec-23	3.20	10.00	4.29	-	-	-	-	-	-
5-Dec-23	3.43	8.00	4.17	-	-	-	-	-	-
6-Dec-23	3.43	5.70	4.11	-	-	-	-	-	-
7-Dec-23	3.42	6.00	4.12	-	-	-	-	-	-
8-Dec-23	4.00	10.00	4.77	-	-	-	-	-	-
9-Dec-23	3.50	10.00	4.68	-	-	-	-	-	-
10-Dec-23	3.95	10.00	4.70	-	-	-	-	-	-
11-Dec-23	3.65	10.00	4.73	-	-	-	-	-	-
12-Dec-23	3.64	10.00	4.95	-	-	-	-	-	-
13-Dec-23	4.00	10.00	5.03	-	-	-	-	-	-
14-Dec-23	4.00	10.00	5.23	-	-	-	-	-	-
15-Dec-23	3.95	10.00	5.41	-	-	-	-	-	-
16-Dec-23	4.00	10.00	5.06	-	-	-	-	-	-
17-Dec-23	3.60	10.00	4.67	-	-	-	-	-	-
18-Dec-23	3.60	10.00	4.88	-	-	-	-	-	-
19-Dec-23	4.00	10.00	4.89	-	-	-	-	-	-
20-Dec-23	3.70	10.00	4.86	-	-	-	-	-	-
21-Dec-23	3.66	10.00	5.24	-	-	-	-	-	-
22-Dec-23	4.00	10.00	5.17	-	-	-	-	-	-
23-Dec-23	4.00	10.00	5.48	-	-	-	-	-	-
24-Dec-23	3.17	10.00	4.31	-	-	-	-	-	-
25-Dec-23	2.85	10.00	4.91	-	-	-	-	-	-
26-Dec-23	4.00	10.00	6.58	-	-	-	-	-	-
27-Dec-23	3.34	10.00	5.68	-	-	-	-	-	-
28-Dec-23	3.27	10.00	5.83	-	-	-	-	-	-
29-Dec-23	3.69	10.00	5.64	-	-	-	-	-	-
30-Dec-23	3.27	10.00	5.27	-	-	-	-	-	-
31-Dec-23	3.20	10.00	5.15	-	-	-	-	-	-
	2.85[#]	10.00[#]	4.86	-	-	-	-	-	-

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), DECEMBER 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-Dec-23	1.68	5.75	3.18	-	-	-	-	-	-
2-Dec-23	0.99	10.00	3.43	-	-	-	-	-	-
3-Dec-23	1.76	4.05	2.98	-	-	-	-	-	-
4-Dec-23	1.50	5.12	3.15	-	-	-	-	-	-
5-Dec-23	1.76	5.50	3.12	-	-	-	-	-	-
6-Dec-23	1.58	10.00	4.03	-	-	-	-	-	-
7-Dec-23	1.76	10.00	3.95	-	-	-	-	-	-
8-Dec-23	2.00	10.00	4.37	-	-	-	-	-	-
9-Dec-23	2.31	10.00	4.70	-	-	-	-	-	-
10-Dec-23	2.50	5.77	3.61	-	-	-	-	-	-
11-Dec-23	1.75	10.00	4.66	-	-	-	-	-	-
12-Dec-23	2.81	10.00	5.10	-	-	-	-	-	-
13-Dec-23	1.71	10.00	5.04	-	-	-	-	-	-
14-Dec-23	2.95	10.00	5.25	-	-	-	-	-	-
15-Dec-23	2.58	10.00	5.67	10.00	10.00	10.00	-	-	-
16-Dec-23	2.58	10.00	5.25	-	-	-	-	-	-
17-Dec-23	1.60	4.27	3.24	-	-	-	-	-	-
18-Dec-23	1.00	10.00	4.29	-	-	-	-	-	-
19-Dec-23	1.71	10.00	4.22	-	-	-	-	-	-
20-Dec-23	1.75	10.00	5.53	10.00	10.00	10.00	-	-	-
21-Dec-23	2.30	10.00	5.95	10.00	10.00	10.00	7.00	7.00	7.00
22-Dec-23	2.86	10.00	6.40	10.00	10.00	10.00	-	-	-
23-Dec-23	2.00	10.00	5.86	10.00	10.00	10.00	-	-	-
24-Dec-23	2.11	10.00	4.53	-	-	-	-	-	-
25-Dec-23	2.00	10.00	5.67	10.00	10.00	10.00	-	-	-
26-Dec-23	2.81	10.00	5.89	-	-	-	10.00	10.00	10.00
27-Dec-23	2.00	10.00	5.61	-	-	-	10.00	10.00	10.00
28-Dec-23	1.71	10.00	5.36	-	-	-	-	-	-
29-Dec-23	2.42	10.00	6.09	-	-	-	10.00	10.00	10.00
30-Dec-23	2.00	10.00	6.01	-	-	-	-	-	-
31-Dec-23	2.15	10.00	4.31	-	-	-	-	-	-
	0.99[#]	10.00[#]	4.61	10.00[#]	10.00[#]	10.00	7.00[#]	10.00[#]	9.05

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(d): PRICE OF HIGH PRICE DAY AHEAD TRANSACTIONS OF ELECTRICITY (DAY-WISE) (₹/kWh),
DECEMBER 2023**

Market Segment	High Price Day Ahead Market of IEX			High Price Day Ahead Market of PXIL			High Price 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-Dec-23	-	-	-	-	-	-	-	-	-
2-Dec-23	-	-	-	-	-	-	-	-	-
3-Dec-23	-	-	-	-	-	-	-	-	-
4-Dec-23	-	-	-	-	-	-	-	-	-
5-Dec-23	-	-	-	-	-	-	-	-	-
6-Dec-23	-	-	-	-	-	-	-	-	-
7-Dec-23	-	-	-	-	-	-	-	-	-
8-Dec-23	-	-	-	-	-	-	-	-	-
9-Dec-23	-	-	-	-	-	-	-	-	-
10-Dec-23	-	-	-	-	-	-	-	-	-
11-Dec-23	-	-	-	-	-	-	-	-	-
12-Dec-23	-	-	-	-	-	-	-	-	-
13-Dec-23	-	-	-	-	-	-	-	-	-
14-Dec-23	-	-	-	-	-	-	-	-	-
15-Dec-23	-	-	-	-	-	-	-	-	-
16-Dec-23	-	-	-	-	-	-	-	-	-
17-Dec-23	-	-	-	-	-	-	-	-	-
18-Dec-23	-	-	-	-	-	-	-	-	-
19-Dec-23	-	-	-	-	-	-	-	-	-
20-Dec-23	-	-	-	-	-	-	-	-	-
21-Dec-23	-	-	-	-	-	-	-	-	-
22-Dec-23	-	-	-	-	-	-	-	-	-
23-Dec-23	-	-	-	-	-	-	-	-	-
24-Dec-23	-	-	-	-	-	-	-	-	-
25-Dec-23	-	-	-	-	-	-	-	-	-
26-Dec-23	-	-	-	-	-	-	-	-	-
27-Dec-23	-	-	-	-	-	-	-	-	-
28-Dec-23	-	-	-	-	-	-	-	-	-
29-Dec-23	-	-	-	-	-	-	-	-	-
30-Dec-23	-	-	-	-	-	-	-	-	-
31-Dec-23	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-

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), DECEMBER 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	0.96	308.21	0.00	4.01	0.00	0.00	5.63	232.88	538.51
HARYANA	67.10	97.75	1.22	2.25	0.00	0.00	21.47	21.45	31.67
RAJASTHAN	107.85	72.80	3.00	4.61	0.00	0.00	210.37	50.04	-193.77
DELHI	62.88	53.08	0.00	52.27	0.00	0.00	41.54	38.15	39.08
UTTAR PRADESH	582.12	286.98	13.86	5.38	0.00	0.00	147.55	169.98	-281.20
UTTARAKHAND	3.32	156.65	0.00	0.00	0.00	0.00	16.41	19.04	155.95
HIMACHAL PRADESH	74.07	5.87	4.98	0.00	0.00	0.00	16.71	26.35	-63.54
J & K	2.95	211.02	9.40	0.00	0.00	0.00	19.04	126.16	305.79
CHANDIGARH	13.15	1.83	0.00	0.00	0.00	0.00	0.00	0.31	-11.01
MP	349.95	63.26	14.30	4.21	0.00	0.00	406.83	8.03	-695.58
MAHARASHTRA	99.84	391.04	1.56	4.63	0.00	0.00	56.24	131.16	369.20
GUJARAT	119.71	642.62	0.00	3.77	0.00	0.00	17.93	95.81	604.55
CHHATTISGARH	610.42	3.63	0.00	0.05	0.00	0.00	109.73	3.72	-712.75
GOA	1.55	13.46	0.00	0.00	0.00	0.00	2.02	1.31	11.20
DD&DNH	0.00	70.21	0.00	1.64	0.00	0.00	1.24	18.39	89.01
ANDHRA PRADESH	22.54	343.55	10.38	2.57	0.00	0.00	27.73	137.20	422.68
KARNATAKA	0.00	65.35	0.00	5.07	0.00	0.00	0.23	45.60	115.80
KERALA	2.20	45.92	0.00	3.73	0.00	0.00	7.11	331.59	371.93
TAMIL NADU	32.12	250.26	0.00	24.42	0.00	0.00	30.68	99.98	311.87
PONDICHERRY	52.92	0.00	0.00	0.00	0.00	0.00	16.35	0.00	-69.27
TELANGANA	32.35	986.25	4.24	0.17	0.00	0.00	23.66	398.88	1325.05
WEST BENGAL	67.05	110.24	0.00	0.00	0.00	0.00	96.31	74.07	20.95
ODISHA	214.71	72.89	0.00	0.98	0.00	0.00	109.74	128.53	-122.06
BIHAR	125.58	0.43	0.00	0.00	0.00	0.00	314.25	0.54	-438.86
JHARKHAND	0.00	6.14	0.00	1.19	0.00	0.00	48.43	19.28	-21.83
SIKKIM	2.09	4.34	1.68	0.00	0.00	0.00	9.21	0.13	-8.52
DVC	20.66	21.64	0.00	14.06	0.00	0.00	19.80	109.78	105.02
ARUNACHAL P	0.07	0.78	0.00	0.00	0.00	0.00	6.43	5.06	-0.66
ASSAM	0.00	4.74	0.00	0.00	0.00	0.00	101.19	1.57	-94.88
MANIPUR	1.92	0.22	0.00	0.00	0.00	0.00	0.33	3.70	1.66
MEGHALAYA	5.35	26.17	0.05	0.00	0.00	0.00	0.17	11.20	31.80
MIZORAM	2.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-2.09
NAGALAND	3.19	0.95	0.00	0.00	0.00	0.00	0.95	0.00	-3.20
TRIPURA	0.19	0.04	0.00	0.00	0.00	0.00	33.41	0.36	-33.21
NTPC STATIONS-NR	2.01	0.00	0.00	0.00	0.00	0.00	67.98	0.00	-70.00
NEP	2.26	11.74	0.00	0.00	0.00	0.00	0.00	0.28	9.76
AD HYDRO	15.98	0.00	0.00	0.00	0.00	0.00	0.10	0.00	-16.08
IGSTPS	0.00	0.00	0.00	0.00	0.00	0.00	2.07	0.00	-2.07
KARCHAM WANGTOO	19.81	0.00	0.00	0.00	0.00	0.00	0.07	0.00	-19.88
SHREE CEMENT	10.96	0.00	0.00	0.00	0.00	0.00	2.74	0.00	-13.70
LANCO BUDHIL	0.59	0.00	0.00	0.00	0.00	0.00	0.07	0.00	-0.66
SORANG HEP	6.42	0.00	2.21	0.00	0.00	0.00	0.34	0.00	-8.98
SAINJ HEP	6.69	0.00	0.00	0.00	0.00	0.00	0.10	0.02	-6.77
ASEJTL_SLR	9.35	0.00	15.09	0.00	0.00	0.00	0.01	0.00	-24.45
SINGOLI BHATWARI HE	2.86	0.00	5.52	0.00	0.00	0.00	1.01	0.00	-9.39
NCR ALLAHABAD	0.00	26.62	0.00	1.78	0.00	0.00	0.00	2.64	31.04
RENEW_SR_SLR	23.52	0.00	9.21	0.00	0.00	0.00	0.81	0.00	-33.54
AMP_GREEN6	2.87	0.00	0.00	0.00	0.00	0.00	2.46	0.00	-5.33
ALTRA XERGI	0.00	0.00	8.35	0.00	0.00	0.00	1.01	0.00	-9.36
NTPC STATIONS-WR	2.56	0.00	0.48	0.00	0.00	0.00	60.14	1.71	-61.47
JINDAL POWER	92.48	0.00	0.00	0.00	0.00	0.00	0.89	0.00	-93.38
ACBIL	97.81	0.00	0.00	0.00	0.00	0.00	7.70	0.26	-105.25
BALCO	3.42	1.11	0.00	11.20	0.00	0.00	8.68	3.07	3.27
DCPP	59.97	0.00	0.00	0.00	0.00	0.00	5.06	5.63	-59.40
EMCO	10.63	0.00	0.00	0.00	0.00	0.00	3.59	0.00	-14.22
ESSAR POWER	444.39	0.00	0.00	0.00	0.00	0.00	13.47	2.13	-455.73
JINDAL STAGE-II	106.35	0.00	0.00	0.00	0.00	0.00	1.67	1.50	-106.52
DB POWER	199.84	0.00	0.00	0.00	0.00	0.00	3.34	0.00	-203.18

DHARIWAL POWER	1.40	0.00	0.00	0.00	0.00	0.00	0.09	0.01	-1.47
JAYPEE NIGRIE	85.05	0.00	0.00	0.00	0.00	0.00	1.27	1.22	-85.10
MB POWER	9.04	17.49	0.00	0.00	0.00	0.00	3.70	9.34	14.08
MARUTI COAL	10.64	0.00	0.00	0.00	0.00	0.00	1.92	0.25	-12.31
JHABUA POWER_MP	17.67	0.00	0.00	0.00	0.00	0.00	18.89	0.00	-36.57
SASAN UMPP	0.00	0.00	0.00	0.00	0.00	0.00	6.25	0.00	-6.25
TRN ENERGY	0.00	0.00	0.00	0.00	0.00	0.00	10.18	0.00	-10.18
RKM POWER	7.83	0.00	0.00	0.00	0.00	0.00	3.96	0.00	-11.79
SKS POWER	18.36	0.00	0.00	0.00	0.00	0.00	23.91	0.00	-42.27
INOX_BHUJ	0.00	0.00	1.59	0.00	0.00	0.00	0.00	0.00	-1.59
AMPS Hazira	0.00	79.29	0.00	70.77	0.00	0.00	0.00	25.51	175.57
RGPL_IR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.77
ADANI_WIND	14.23	0.00	41.30	0.00	0.00	0.00	3.64	0.00	-59.17
CONTINNUM PT	0.00	0.00	13.64	0.00	0.00	0.00	0.00	0.00	-13.64
RENERGY5_WIND	0.17	0.00	7.19	0.00	0.00	0.00	0.23	0.00	-7.59
ARTPP	120.77	0.00	0.00	0.00	0.00	0.00	5.12	0.63	-125.25
MTPS	0.00	0.00	0.00	0.00	0.00	0.00	7.49	0.00	-7.49
RAIGARH_ADANI	241.40	0.00	0.00	0.00	0.00	0.00	5.56	0.00	-246.96
NREL_DAYAPAR (W)	0.00	0.00	0.00	0.00	0.00	0.00	5.61	0.00	-5.61
NTPC STATIONS-SR	3.39	0.00	7.43	0.00	0.00	0.00	15.11	0.00	-25.93
SIMHAPURI	0.19	0.00	0.00	0.00	0.00	0.00	10.38	29.13	18.56
IL&FS	6.13	0.00	0.00	0.00	0.00	0.00	1.90	0.00	-8.03
NLC	0.00	0.00	0.00	0.00	0.00	0.00	20.57	0.00	-20.57
SEMBCORP	71.24	0.00	0.00	0.00	0.00	0.00	50.79	0.00	-122.03
NETCL VALLUR	0.00	0.00	0.00	0.00	0.00	0.00	3.15	0.01	-3.13
AYANA_NPKUNTA	0.00	0.00	7.13	0.00	0.00	0.00	0.55	0.00	-7.69
OSTRO Hiriyur	2.97	0.00	17.38	0.00	0.00	0.00	1.00	0.00	-21.35
RENEW_ROSHNI	3.38	0.00	17.55	0.00	0.00	0.00	2.27	0.00	-23.20
NTPC STATIONS-ER	49.31	0.00	0.00	0.00	0.00	0.00	54.09	0.00	-103.40
NPGC	2.33	0.00	0.00	0.00	0.00	0.00	16.69	0.00	-19.01
ADHUNIK POWER LTD	3.43	0.00	0.00	0.00	0.00	0.00	1.33	0.00	-4.76
CHUZACHEN HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.001	0.00	-0.001
GMR KAMALANGA	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03
JITPL	288.41	0.00	0.00	0.00	0.00	0.00	2.47	0.00	-290.88
JORETHANG	0.00	0.00	0.00	0.00	0.00	0.00	0.76	6.72	5.97
NEPAL(NVVN)	5.90	67.40	0.00	0.00	0.00	0.00	4.45	0.00	57.05
TASHIDENG HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	-0.26
RONGNICHU HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.95	4.95
DGPCL Bhutan	0.00	249.87	0.00	0.00	0.00	0.00	0.00	0.00	249.87
KBUNL	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.44
NTPC STATIONS-NER	1.74	0.00	0.00	0.00	0.00	0.00	4.58	0.00	-6.32
NEEPCO STATIONS	1.89	0.00	0.00	0.00	0.00	0.00	10.37	0.00	-12.26
RANGANADI HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.002	0.00	-0.002
DOYANG HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	-0.26
ONGC PALATANA	2.80	0.00	0.00	0.00	0.00	0.00	5.16	0.00	-7.96
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), DECEMBER 2023				
Date	Volume (MU)	All India Grid Charges (₹/kWh)		
		Minimum	Maximum	Average
1-Dec-23	83.16	2.63	10.00	4.99
2-Dec-23	76.72	2.66	10.00	5.02
3-Dec-23	76.93	2.15	10.00	5.06
4-Dec-23	76.01	2.05	8.45	5.13
5-Dec-23	77.68	2.15	7.13	5.19
6-Dec-23	73.59	2.15	10.00	5.25
7-Dec-23	76.19	2.12	10.00	5.30
8-Dec-23	71.00	2.10	10.00	5.36
9-Dec-23	68.68	2.31	10.00	5.40
10-Dec-23	69.33	2.31	10.00	5.44
11-Dec-23	68.86	2.47	10.00	5.52
12-Dec-23	67.06	2.65	10.00	5.57
13-Dec-23	68.38	2.53	10.00	5.60
14-Dec-23	70.48	2.95	10.00	5.61
15-Dec-23	71.74	2.86	10.00	5.62
16-Dec-23	68.46	2.96	10.00	5.62
17-Dec-23	73.98	2.96	6.54	5.64
18-Dec-23	78.08	2.34	10.00	5.78
19-Dec-23	77.00	2.40	10.00	5.87
20-Dec-23	67.83	2.45	10.00	5.97
21-Dec-23	66.89	2.85	10.00	6.01
22-Dec-23	69.95	3.00	10.00	5.98
23-Dec-23	67.76	3.13	10.00	5.91
24-Dec-23	69.56	2.81	10.00	5.84
25-Dec-23	67.40	2.75	10.00	5.96
26-Dec-23	64.04	3.00	10.00	6.01
27-Dec-23	64.52	3.00	10.00	5.99
28-Dec-23	66.74	3.00	10.00	5.95
29-Dec-23	63.39	2.99	10.00	5.88
30-Dec-23	71.07	2.88	10.00	5.72
31-Dec-23	68.04	2.50	10.00	5.16
Total	2200.52	2.05[#]	10.00[#]	5.59
Source: NLDC				
[#] Maximum/Minimum in the month				

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

Name of the Entity	Volume of Under drawal/ Over injection (MUs)	% of Volume
NTPC STATIONS-ER	150.40	6.47
MP	117.90	5.07
RAJASTHAN	114.11	4.91
NTPC STATIONS-NR	106.72	4.59
GUJARAT	103.60	4.46
UTTAR PRADESH	98.83	4.25
MAHARASHTRA	92.20	3.97
NTPC STATIONS-WR	91.10	3.92
NTPC STATIONS-SR	91.06	3.92
KARNATAKA	82.60	3.55
PUNJAB	76.74	3.30
TELANGANA	61.09	2.63
HARYANA	54.32	2.34
CHHATTISGARH	53.27	2.29
ANDHRA PRADESH	51.61	2.22
BIHAR	46.31	1.99
DELHI	40.93	1.76
TAMIL NADU	40.59	1.75
SASAN UMPP	36.01	1.55
DVC	30.44	1.31
NHPC STATIONS	29.49	1.27
NEEPCO STATIONS	25.66	1.10
JHARKHAND	23.41	1.01
J & K	20.19	0.87
AMPS Hazira	19.92	0.86
NLC	16.50	0.71
HIMACHAL PRADESH	16.31	0.70
MAITHON POWER LTD	14.89	0.64
UTTARAKHAND	14.67	0.63
JAYPEE NIGRIE	14.32	0.62
JINDAL STAGE-II	13.29	0.57
BBMB	12.61	0.54
NEPAL(NVVN)	11.45	0.49
LANKO_AMK	10.97	0.47
IGSTPS	10.08	0.43
AGEMPL BHUJ	10.01	0.43
ODISHA	9.80	0.42
TRIPURA	9.24	0.40
NPGC	9.11	0.39
PONDICHERRY	8.60	0.37
BALCO	8.48	0.36
GIWEL_BHUJ	8.30	0.36
ASEJTL_SLR	8.05	0.35
GOA	7.82	0.34
NJPC	7.82	0.34
SBESS	7.41	0.32
JINDAL POWER	7.38	0.32
ADANI_WIND	7.23	0.31
AZURE43_SLR	7.17	0.31
RKM POWER	7.03	0.30
ASSAM	6.98	0.30
KREDL_PVGD	6.98	0.30
MEGHALAYA	6.95	0.30
RENEW_BHUJ	6.95	0.30
AYANA_RPI	6.83	0.29
TEHRI	6.75	0.29
ESSAR POWER	6.70	0.29
SEMBCORP	6.37	0.27
RAIL	5.92	0.25

RPREL	5.79	0.25
DD&DNH	5.66	0.24
OSTRO	5.52	0.24
RENEW_ROSHNI	5.31	0.23
PARAM_PVGD	5.28	0.23
TATA_PVGD	5.17	0.22
MIZORAM	5.08	0.22
ARS_PVGD	5.03	0.22
MSUPL_BHDL2	5.02	0.22
AZURE41_SLR	4.96	0.21
ACME_HEERGARH	4.95	0.21
RENEW_SR_SLR	4.87	0.21
SKRPL	4.83	0.21
ACME_SLR	4.82	0.21
GIWEL_TCN	4.78	0.21
CHANDIGARH	4.72	0.20
AVAADASN_SLR	4.55	0.20
BRBCL,NABINAGAR	4.53	0.19
RENEW_BHACHAU	4.52	0.19
KAPP 3&4	4.51	0.19
NTPL	4.47	0.19
MB POWER	4.39	0.19
CLEAN_SLR	4.36	0.19
FORTUM1_PVGD	4.34	0.19
NTPC STATIONS-NER	4.32	0.19
OSTRO Hiriyur	4.29	0.18
GRT_JPL	4.27	0.18
ALFANAR_BHUJ	4.24	0.18
NSPCL	4.21	0.18
DB POWER	3.99	0.17
KOTESHWAR	3.97	0.17
APRAAVA	3.84	0.17
RENEWSB	3.74	0.16
RENEWURJA_SLR	3.72	0.16
TORRENT SOLARGEN	3.56	0.15
ACME_RUMS	3.55	0.15
AYANA_NPKUNTA	3.55	0.15
SPRNG_NPKUNTA	3.49	0.15
RAMPUR HEP	3.44	0.15
JITPL	3.41	0.15
SBG_NPK	3.39	0.15
MTPS II	3.36	0.14
NAGALAND	3.34	0.14
EDEN_SLR	3.20	0.14
NETCL VALLUR	3.17	0.14
ABC_BHDL2	3.16	0.14
WEST BENGAL	3.16	0.14
AZURE_PVGD	3.12	0.13
KERALA	3.04	0.13
THAR1_SLR	3.04	0.13
BANGLADESH	3.03	0.13
ARINSUM_RUMS	3.02	0.13
MANIPUR	2.99	0.13
NEP	2.99	0.13
NTPC_ANTP	2.98	0.13
CLEANSPL_SLR	2.81	0.12
RENEW_SLR_BKN	2.80	0.12
KARCHAM WANGTOO	2.80	0.12
AVIKIRAN	2.79	0.12
ADY1_PVGD	2.74	0.12
MRPL	2.68	0.12
CGPL	2.65	0.11
NETRA WIND	2.62	0.11

MAHINDRA_RUMS	2.60	0.11
SKS POWER	2.60	0.11
MSEPL	2.57	0.11
ORANGE_TCN	2.56	0.11
AVADARJHN_SLR	2.56	0.11
SIMHAPURI	2.55	0.11
ARERJL_SLR	2.54	0.11
RENEWJH_SLR	2.48	0.11
SIKKIM	2.40	0.10
RENEWSW_SLR	2.39	0.10
TATA_SLR	2.37	0.10
RENEW_PVGD	2.30	0.10
DGPCL Bhutan	2.18	0.09
TATA_GREEN	2.14	0.09
JHABUA POWER_MP	2.09	0.09
BARC	2.09	0.09
SESPL	2.05	0.09
INOX_BHUJ	2.03	0.09
ESPL_RADHANESDA	1.91	0.08
AZURE_MAPLE_SLR	1.89	0.08
AZURE_SLR	1.89	0.08
ARUNACHAL PRADESH	1.80	0.08
ONGC PALATANA	1.73	0.07
GSECL Radhanesda	1.56	0.07
AZURE_ANTP	1.55	0.07
EMCO	1.54	0.07
AZURE34_SLR	1.50	0.06
AVAADA1_PVGD	1.47	0.06
RAP C	1.41	0.06
SBG_PVGD	1.38	0.06
FRV_ANTP	1.35	0.06
GMR KAMALANGA	1.31	0.06
GIPCL_RADHANESDA	1.30	0.06
TATA_ANTP	1.25	0.05
KSK MAHANADI	1.22	0.05
Railways_ER ISTS	1.20	0.05
ACBIL	1.18	0.05
TPREL_RADHANESDA	1.11	0.05
SPRING_PUGALUR	1.08	0.05
POWERICA	1.07	0.05
IL&FS	1.07	0.05
POWERGRID HVDC	1.01	0.04
JSW_RENEW_2	0.98	0.04
TRN ENERGY	0.97	0.04
FORTUM2_PVGD	0.91	0.04
TPSL	0.89	0.04
DHARIWAL POWER	0.89	0.04
RANGIT HEP	0.75	0.03
AHSP_ANTP	0.74	0.03
AKSP_ANTP	0.67	0.03
BETAM_TCN	0.67	0.03
JORETHANG	0.66	0.03
ADHUNIK POWER LTD	0.66	0.03
DAGACHU	0.65	0.03
DCPP	0.65	0.03
RANGANADI HEP	0.65	0.03
RENEW_SLR	0.64	0.03
YARROW_PVGD	0.63	0.03
AVAADA2_PVGD	0.63	0.03
COASTGEN	0.60	0.03
AKS_PVGD	0.59	0.03
ABSP_ANTP	0.58	0.03
LOKTAK	0.56	0.02

RAP B	0.56	0.02
PARE HEP	0.48	0.02
SAINJ HEP	0.46	0.02
FRV_NPK	0.46	0.02
RSTPS_FSPP	0.44	0.02
TASHIDENG HEP	0.43	0.02
MYTRAH_TCN	0.42	0.02
SHREE CEMENT	0.41	0.02
THERMAL POWERTECH	0.39	0.02
SINGOLI BHATWARI HEP	0.37	0.02
GSECL P-II	0.35	0.01
CHUZACHEN HEP	0.34	0.01
DOYANG HEP	0.29	0.01
RGPPL	0.28	0.01
ADANI GREEN	0.28	0.01
SRSSFPL	0.28	0.01
RONGNICHU HEP	0.26	0.01
LANCO BUDHIL	0.25	0.01
NFF	0.22	0.01
AD HYDRO	0.22	0.01
SORANG HEP	0.17	0.01
NAPP	0.16	0.01
HVDC PUS	0.06	0.002
HVDC ALPD	0.02	0.001
Total	2324.21	100.00
Volume Exported by top 5 Regional Entities	592.72	25.50

Table-31: VOLUME OF ELECTRICITY OVER DRAWAL/ UNDER INJECTION (IMPORTED) UNDER DSM, DECEMBER 2023		
Name of the Entity	Volume of Over drawal/ Under Injection (MUs)	% of Volume
NTPC STATIONS-ER	151.38	7.29
NTPC STATIONS-NR	112.30	5.41
NTPC STATIONS-WR	95.35	4.59
WEST BENGAL	86.76	4.18
NTPC STATIONS-SR	78.60	3.78
MAHARASHTRA	72.80	3.51
TAMIL NADU	66.56	3.20
ODISHA	62.19	2.99
KARNATAKA	61.52	2.96
GUJARAT	51.85	2.50
UTTAR PRADESH	48.71	2.35
ANDHRA PRADESH	44.52	2.14
KERALA	42.36	2.04
RAJASTHAN	40.45	1.95
NLC	37.42	1.80
TELANGANA	32.92	1.59
BIHAR	32.20	1.55
J & K	30.98	1.49
JHARKHAND	28.19	1.36
AGEMPL BHUJ	27.90	1.34
PUNJAB	27.06	1.30
GIWEL_BHUJ	25.38	1.22
HARYANA	23.84	1.15
AMPS Hazira	21.00	1.01
UTTARAKHAND	20.55	0.99
IGSTPS	20.34	0.98
SPRING_PUGALUR	20.25	0.97
INOX_BHUJ	20.07	0.97
MP	18.72	0.90
HIMACHAL PRADESH	17.50	0.84
DVC	17.20	0.83
SBESS	16.75	0.81
CGPL	16.58	0.80
OSTRO	15.40	0.74
RENEW_BHUJ	15.33	0.74
PARAM_PVGD	14.59	0.70
SKRPL	14.58	0.70
ASSAM	14.57	0.70
ALFANAR_BHUJ	14.41	0.69
RENEW_BHACHAU	13.48	0.65
ADANI_WIND	12.58	0.61
CHHATTISGARH	12.52	0.60
GRT_JPL	12.32	0.59
NETCL VALLUR	12.20	0.59
FORTUM1_PVGD	11.77	0.57
KREDL_PVGD	11.09	0.53
AYANA_NPKUNTA	9.95	0.48
SHREE CEMENT	9.93	0.48
MB POWER	9.86	0.47
RENEW_ROSHNI	9.80	0.47
OSTRO Hiriya	9.76	0.47
AVIKIRAN	9.37	0.45
DGPCL Bhutan	8.75	0.42
ARUNACHAL PRADESH	8.19	0.39
GOA	7.97	0.38
NHPC STATIONS	7.91	0.38
AVADARJHN_SLR	7.76	0.37
AVAADASN_SLR	7.72	0.37
NPGC	7.58	0.37

SESPL	7.46	0.36
CHANDIGARH	7.05	0.34
JITPL	6.86	0.33
BRBCL,NABINAGAR	6.78	0.33
NAPP	6.47	0.31
AZURE_PVGD	5.75	0.28
NTPL	5.72	0.28
SBG_NPK	5.69	0.27
RAIL	5.68	0.27
BANGLADESH	5.66	0.27
NTPC_ANTP	5.58	0.27
APRAAVA	5.41	0.26
TATA_PVGD	5.38	0.26
SPRNG_NPKUNTA	5.34	0.26
BALCO	5.21	0.25
NETRA WIND	5.17	0.25
ARS_PVGD	5.03	0.24
AZURE43_SLR	4.96	0.24
DD&DNH	4.93	0.24
ACBIL	4.67	0.23
NTPC STATIONS-NER	4.61	0.22
KAPS 3&4 (INFIRM)	4.60	0.22
SIMHAPURI	4.57	0.22
MANIPUR	4.56	0.22
TORRENT SOLARGEN	4.42	0.21
DELHI	4.36	0.21
ORANGE_TCN	4.12	0.20
MAHINDRA_RUMS	3.90	0.19
NEEPCO STATIONS	3.72	0.18
SIKKIM	3.69	0.18
MSEPL	3.44	0.17
ACME_RUMS	3.37	0.16
THERMAL POWERTECH	3.30	0.16
COASTGEN	3.28	0.16
ADY1_PVGD	3.27	0.16
FRV_ANTP	3.27	0.16
ESSAR POWER	3.14	0.15
JINDAL STAGE-II	3.05	0.15
KAPP 3&4	3.02	0.15
CLEAN_SLR	2.96	0.14
AVAADA1_PVGD	2.94	0.14
AYANA_RP1	2.77	0.13
DB POWER	2.75	0.13
JHABUA POWER_MP	2.71	0.13
GIWEL_TCN	2.65	0.13
SEBICORP	2.62	0.13
RENEW_PVGD	2.59	0.12
NEP	2.56	0.12
ARINSUM_RUMS	2.55	0.12
THAR1_SLR	2.53	0.12
TATA_SLR	2.52	0.12
TEHRI	2.39	0.11
NEPAL(NVVN)	2.38	0.11
POWERICA	2.34	0.11
RENEW_SLR_BKN	2.27	0.11
RPREL	2.21	0.11
RENEW_SR_SLR	2.20	0.11
NSPCL	2.15	0.10
MEGHALAYA	2.06	0.10
FORTUM2_PVGD	2.02	0.10
DHARIWAL POWER	1.97	0.09
CLEANSR_SLR	1.96	0.09
AZURE_MAPLE_SLR	1.91	0.09

ABC_BHDL2	1.85	0.09
ASEJTL_SLR	1.66	0.08
SBG_PVGD	1.65	0.08
TATA_ANTP	1.64	0.08
TATA_GREEN	1.61	0.08
AZURE41_SLR	1.59	0.08
ADHUNIK POWER LTD	1.59	0.08
SKS POWER	1.57	0.08
JSW_RENEW_2	1.56	0.08
MRPL	1.53	0.07
AZURE_ANTP	1.52	0.07
TRIPURA	1.51	0.07
ESPL_RADHANESDA	1.49	0.07
ACME_SLR	1.42	0.07
ADANI GREEN	1.42	0.07
KSK MAHANADI	1.41	0.07
MYTRAH_TCN	1.39	0.07
EDEN_SLR	1.37	0.07
MTPS II	1.35	0.07
AVAADA2_PVGD	1.33	0.06
RENEWURJA_SLR	1.33	0.06
PONDICHERRY	1.32	0.06
AKSP_ANTP	1.32	0.06
SASAN UMPP	1.31	0.06
ACME_HEERGARH	1.29	0.06
FRV_NPK	1.28	0.06
GSECL P-II	1.25	0.06
AHSP_ANTP	1.24	0.06
ARERJL_SLR	1.23	0.06
KARCHAM WANGTOO	1.22	0.06
DCPP	1.22	0.06
BETAM_TCN	1.19	0.06
RENEWJH_SLR	1.18	0.06
JAYPEE NIGRIE	1.17	0.06
RENEWSW_SLR	1.10	0.05
AZURE_SLR	1.07	0.05
RENEWSB	1.07	0.05
Railways_ER ISTS	1.06	0.05
RSTPS_FSPP	1.06	0.05
YARROW_PVGD	1.06	0.05
RANGANADI HEP	1.00	0.05
ABSP_ANTP	0.95	0.05
MSUPL_BHDL2	0.92	0.04
AKS_PVGD	0.91	0.04
SRSSFPL	0.90	0.04
TPSL	0.84	0.04
AZURE34_SLR	0.84	0.04
RKM POWER	0.74	0.04
GIPCL_RADHANESDA	0.71	0.03
TPREL_RADHANESDA	0.71	0.03
BBMB	0.70	0.03
RENEW_SLR	0.60	0.03
NJPC	0.60	0.03
MAITHON POWER LTD	0.57	0.03
JINDAL POWER	0.55	0.03
RGPPL	0.53	0.03
RAP B	0.50	0.02
MIZORAM	0.49	0.02
RANGIT HEP	0.48	0.02
DGEN MEGA POWER	0.45	0.02
MEENAKSHI	0.42	0.02
RAP C	0.40	0.02
LANKO KONDAPALLI	0.37	0.02

GSECL_Radhanesda	0.28	0.01
NAGALAND	0.28	0.01
DOYANG HEP	0.25	0.01
RAMPUR HEP	0.22	0.01
EMCO	0.21	0.01
GMR KAMALANGA	0.20	0.01
IL&FS	0.20	0.01
TRN ENERGY	0.19	0.01
CHUZACHEN HEP	0.19	0.01
PARE HEP	0.19	0.01
SAINJ HEP	0.15	0.01
KOTESHWAR	0.13	0.01
LANCO BUDHIL	0.11	0.01
LOKTAK	0.08	0.004
AD HYDRO	0.07	0.003
SINGOLI BHATWARI HEP	0.06	0.003
NFF	0.06	0.003
JORETHANG	0.05	0.002
TASHIDENG HEP	0.04	0.002
RONGNICHU HEP	0.04	0.002
HVDC ALPD	0.04	0.002
SORANG HEP	0.03	0.002
LANKO_AMK	0.02	0.001
BARC	0.02	0.001
HVDC PUS	0.01	0.0005
ONGC PALATANA	0.01	0.0003
DAGACHU	0.004	0.0002
POWERGRID HVDC	0.0002	0.00001
TOTAL	2076.83	100.00
Volume Imported by top 5 Regional Entities	524.38	25.25

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

Sr. No	Details of REC Transactions	Through Power Exchange			Bilateral through Traders
		IEX	PXIL	HPX	
1	Volume of Buy Bid	1190959	882674	10000	-
2	Volume of Sell Bid	13217719	6187356	29653	-
3	Ratio of Buy Bid to Sell Bid Volume	0.09	0.14	0.34	-
4	Traded Volume (MWh)	1052230	216911	10000	409073
5	Weighted Average Price (₹/MWh)	361.94	370.85	375.00	357.14

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, DECEMBER 2023

Sr. No.	Neighbouring Country	Volume (MU)			Weighted Average Price (₹/kWh)	
		Sale	Purchase	Net*	Sale	Purchase
1	Nepal	8.16	79.14	70.98	4.39	4.07
2	Bhutan	0.00	249.87	249.87	-	3.38
	Total	8.16	329.01	320.85	-	-

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, DECEMBER 2023

Sr. No.	Neighbouring Country	Volume (MU)			Weighted Average Price (₹/kWh)	
		Sale	Purchase	Net*	Sale	Purchase
1	Nepal	4.45	7.00	2.55	3.87	4.22
2	Bhutan	0.00	4.95	4.95	-	5.02
	Total	4.45	11.95	7.50	-	-

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



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