

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

December, 2019



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



# Contents

S.No.	Contents	Page No
	Contents	i
	List of Tables and Figures	ii
	Abbreviations	iii
	Introduction	1
I	Volume of Short-term Transactions of Electricity	1
II	Price of Short-term Transactions of Electricity	2
(i)	<i>Price of electricity transacted through Traders</i>	2
(ii)	<i>Price of electricity transacted through Power Exchanges</i>	3
(iii)	<i>Price of electricity transacted through DSM</i>	3
III	Trading Margin	3
IV	Volume of Short-term Transactions of Electricity (Regional Entity-wise)	3
V	Congestion on Inter-State Transmission Corridor for Day-Ahead Market on Power Exchanges	4
VI	Bilateral Contracts executed by Traders	5
(i)	<i>Duration of bilateral contracts</i>	5
(ii)	<i>Forward Curve based on Price of bilateral contracts</i>	6
VII	Volume and Price of Renewable Energy Certificates (RECs)	6
VIII	Inferences	8

# List of Tables and Figures

S.No.	List of Tables and Figures	Page No.
<b>I</b>	<b>List of Tables</b>	
Table-1	Volume of Short-term Transactions of Electricity in 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 through Power Exchanges	13
Table-6	Volume and Price of Electricity in Term Ahead Market of IEX	13
Table-7	Volume and Price of Electricity in Term Ahead Market of PXIL	13
Table-8	Price of Electricity Transacted through DSM	13
Table-9	Volume of Electricity Sold through Bilateral	15
Table-10	Volume of Electricity Purchased through Bilateral	16
Table-11	Volume of Electricity Sold through Power Exchanges	17
Table-12	Volume of Electricity Purchased through Power Exchanges	19
Table-13	Volume of Electricity Under drawal through DSM	20
Table-14	Volume of Electricity Over drawal through DSM	23
Table-15	Total Volume of Net Short-term Transactions of Electricity (Regional Entity-wise)	26
Table-16	Details of Congestion in Power Exchanges	29
Table-17	Volume of Short-term Transactions of Electricity in India (Day-wise)	30
Table-18	Price of Electricity in Short-term Transactions (Day-wise)	31
Table-19	Volume of Short-term Transactions of Electricity (Regional Entity-wise)	32
Table-20	Volume and Price of Renewable Energy Certificates (RECs) Transacted through Power Exchanges	36
<b>II</b>	<b>List of Figures</b>	
Figure-1	Volume of Short-term Transactions of Electricity	10
Figure-2	Volume of Various Kinds of Electricity Transactions in Total Electricity Generation	10
Figure-3	Volume of Short-term Transactions of Electricity (Day-wise)	11
Figure-4	Percentage Share of Electricity Transacted by Trading Licensees	12
Figure-5	Price of Electricity in Short-term Transactions	14
Figure-6	Price of Electricity in Short-term Transactions (Day-wise)	14
Figure-7	Bilateral Contracts Executed by Traders in January, 2020	35
Figure-8	Forward Curve based on Prices of Bilateral Contracts	35

## Abbreviations

Abbreviation	Expanded Version
ACBIL	ACB ( India) Limited
ACP	Area Clearing Price
ACV	Area Clearing Volume
ACME_SLR	ACME Solar Power Project
ACME_RUMS	Acme Rewa Ultra Mega Solar Project
AGEMPL BHUJ	Adani Green Energy (MP) Ltd.,Bhuj
ARINSUM_RUMS	Solenergi Rewa Ultra Mega Solar Project
AZURE_SLR	Azure Power Solar Power Project
AZURE34_SLR	Azure Power 34 Pvt. Ltd. Solar Power Project
BALCO	Bharat Aluminum Company Limited
BARC	Bhabha Atomic Research Centre
BBMB	Bhakra Beas Management Board
BHADRAVATHI HVDC	Bhadravathi High Voltage Direct Current Link
BRBCL	Bhartiya Rail Bijlee Company Limited
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CGPL	Coastal Gujarat Power Limited
CHUKHA HEP	Chhukha Hydroelectric Project, Bhutan
CHUZACHEN HEP	Chuzachen Hydro Electric Power Project
CLEAN_SLR	Clean Solar Power Pvt. Ltd
COASTGEN	Coastal Energen Private Limited
DAGACHU	Dagachhu Hydro Power Corporation
DB POWER	Diligent Power Pvt. Ltd.
DCPP	Donga Mahua Captive Power Plant
DGEN MEGA POWER	DGEN Mega Power Project
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
EMCO	EMCO Energy Limited
ESSAR POWER	Essar Power Limited
ESSAR STEEL	Essar Steel Ltd
GIWEL_BHUJ	Green infra wind energy Limited, Bhuj
GMR CHHATTISGARH	GMR Chhattisgarh Energy Limited
GMR KAMALANGA	GMR Kamalanga Energy Ltd.
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
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
KAPP 3&4	Kakrapar Atomic Power Station Unit 3 & 4
KARCHAM WANGTOO	Karcham Wangtoo H.E. Project
KORBA WEST POWER	Korba West Power Company Limited
KOTESHWAR	Koteshwar Hydro Power project
KSK MAHANADI	KSK Mahanadi Power Ltd
KURICHU HEP	Kurichhu Hydro-electric Power Station, Bhutan
LANKO_AMK	LancoAmarkantak Power Private Limited
LANKO BUDHIL	LancoBudhil Hydro Power Private Limited
LANKO KONDAPALLY	LancoKondapally 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
MTPS II	Muzaffarpur Thermal Power Station – Stage II
MUs	Million Units
NAPP	Narora Atomic Power Plant
NEEPCO	North Eastern Electric Power Corporation Limited
NEP	Nepal
NFL	National Fertilisers Limited
NHPC STATIONS	National Hydro Electric Power Corporation Ltd. Stations
NJPC	Nathpa Jhakri Hydroelectric Power Station
NLC	Neyveli Lignite Corporation Limited
NLDC	National Load Dispatch Centre
NPGC	Nabinagar Power Generating Company (Pvt.) Limited
NSPCL	NTPC - SAIL Power Company Private Limited
NTECL Vallur	NTPC Tamil Nadu Energy Company Limited Vallur
NTPC STATIONS	National Thermal Power Corporation Ltd. Stations
NTPL	NLC Tamil Nadu Power Limited
NVVN	NTPC Vidyut Vyapar Nigam Limited
ONGC Platana	ONGC Tripura Power Company
OPGC	Odisha Power Generation Corporation
OSTRO	Ostro Energy Private Limited
OTC	Over The Counter
PARE HEP	Pare hydroelectric project, Arunachal Pradesh
PX	Power Exchange
PXIL	Power Exchange India Limited
RAIL	Indian Railways
RAMPUR HEP	Rampur Hydro Electric Power Project

RANGIT HEP	Rangit Hydroelectric power project
RANGANADI HEP	Ranganadi Hydro Electric Power Project, Arunachal Pradesh
RAP-B	Rajasthan Atomic Power Plant-B
RAP-C	Rajasthan Atomic Power Plant-C
REC	Renewable Energy Certificate
RENEW_BHACHAU	ReNew Power Limited, Bhachau
RENEW_SLR	Renew Solar
RENEW_SLR_BKN	Renew Solar Bikaner
RGPPL	Ratnagiri Gas and Power Private Limited
RLDC	Regional Load Dispatch Centre
RTC	Round The Clock
Sasan UMPP	Sasan Ultra Mega Power Project
SB_SLR	Soft Bank Solar
SBG CLEANTECH_SLR	SBG Cleantech Ltd
SEMBCORP	Sembcorp Gayatri Power Ltd
SHREE CEMENT	Shree Cement Limited
SIMHAPURI	Simhapuri Energy Private Limited
SKS Power	SKS Power Generation Chhattisgarh Limited
SPECTRUM	Spectrum Power Generation Ltd
TALA HEP	Tala Hydroelectric Project, Bhutan
TASHIDENG HEP	Tashiding Hydro Electric Project, Sikkim
TATA_SLR	Tata Solar
TEESTA STG3	Teesta Stage 3 Hydro Power Project
TEHRI	Tehri Hydro Electric Power Project
THERMAL POWERTECH	Thermal Powertech Corporation India Limited
URI-II	Uri-II Hydropower Project
VINDHYACHAL HVDC	Vindhyachal High Voltage Direct Current Link

## Introduction

A well-functioning electricity market requires an effective market monitoring process. As part of the market monitoring process, the monthly report on short-term transactions of electricity, is being prepared and posted on the website of CERC since August 2008. Here, “short-term transactions of electricity” refers to the contracts of less than one year period, for electricity transacted (inter-State) through inter-State Trading Licensees and directly by the Distribution Licensees, Power Exchanges (Indian Energy Exchange Ltd (IEX) and Power Exchange India Ltd (PXIL), and Deviation Settlement Mechanism (DSM). The objectives of the report are: (i) to observe the trends in volume and price of the short-term transactions of electricity; (ii) to analyse competition among the market players; (iii) to analyse effect of congestion on volume of electricity transacted through power exchanges; (iv) to analyse bilateral contracts executed by traders; (v) to provide information on volume and price of Renewable Energy Certificates (RECs) transacted through power exchanges; and (vi) to disclose/disseminate all relevant market information. The details of the report for the month of **December, 2019** are as under:

### I: Volume of Short-term Transactions of Electricity

During December 2019, total electricity generation excluding generation from renewable and captive power plants in India was 98760.74 MUs (Table-1).

Of the total electricity generation, 10464.01 MUs (10.60%) was transacted through short-term, comprising of 4396.42 MUs (4.45%) through bilateral (through traders and term-ahead contracts on power exchanges and directly between distribution companies), followed by 4333.78 MUs (4.39%) through day ahead collective transactions on power exchanges and 1733.81 MUs (1.76%) through DSM (Table-1 & Figure-2).

Of the total short-term transactions, bilateral constitutes 42.01% (18.73% through traders and term-ahead contracts on power exchanges and 23.29% directly between distribution companies) followed by 41.42% through day ahead collective transactions on power exchanges and 16.57% through DSM (Table-1 & Figure-1). Daily volume of short-term transactions is shown in Table-17 & Figure-3.

The percentage share of electricity traded by each trading licensee in the total volume of electricity traded by all the trading licensees is provided in Table-2 & Figure-4. The volume of electricity transacted by the trading licensees includes bilateral transactions and the transactions undertaken through power exchanges. There were 35 trading licensees as on December 2019. In December 2019, 23 trading licensees were engaged in short term trading. Top 5 trading licensees had a share of 67.55% in the total volume traded by all the licensees. These are PTC India Ltd., Adani Enterprises Ltd., Kreate Energy (I) Pvt. Ltd., Manikaran Power Ltd. and Jaiprakash Associates Ltd.

Herfindahl-Hirschman Index (HHI) has been used for measuring the competition among the trading licensees. Increase in the HHI generally indicates decrease in competition and increase of 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 0.1318 for the month of December 2019, which indicates non-concentration of market power (Table-2).

The volume of electricity transacted through IEX and PXIL in the day ahead market was 4333.32 MUs and 0.46 MUs respectively. The volume of total buy bids and sell bids was 5259.79 MUs and 10195.34 MUs respectively in IEX while the same was 0.46 MUs and 58.17 MUs respectively 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.

The volume of electricity transacted through IEX and PXIL in the term-ahead market was 434.37 MUs and 142.88 MUs respectively (Table-6 & Table-7).

## **II: Price of Short-term Transactions of Electricity**

(i) *Price of electricity transacted through Traders:* The minimum, maximum and weighted average sale prices have been computed for the electricity transacted through traders and the sale prices were ₹3.01/kWh, ₹5.50/kWh and ₹3.94/kWh respectively (Table-3). The weighted average sale prices were also computed for the transactions during



Round the Clock (RTC) and Off-peak periods separately, and the sale prices were ₹3.68/kWh and ₹3.51/kWh respectively. There were no transactions by traders during Peak periods in the month of December 2019 (Table-4).

**(ii) Price of electricity transacted through Power Exchanges:** The minimum, maximum and weighted average prices have been computed for the electricity transacted through IEX and PXIL. The minimum, maximum and weighted average prices were ₹1.70/kWh, ₹6.12/kWh and ₹3.05/kWh respectively in IEX and these were ₹2.89/kWh, ₹2.96/kWh and ₹2.93/kWh respectively in PXIL (Table-5).

The price of electricity transacted through IEX and PXIL in the term-ahead market was ₹3.45/kWh and ₹3.08/kWh respectively (Table-6 and Table-7).

**(iii) Price of electricity transacted through DSM:** The average deviation settlement price was ₹2.83/kWh. The minimum and maximum deviation settlement prices were ₹0.00/kWh and ₹8.00/kWh respectively (Table-8).

The prices of electricity transacted through trading licensees, power exchanges and DSM and their comparison is shown in Table-18, Figure-5 & 6.

### **III: Trading Margin**

As per the CERC (Fixation of Trading Margin) Regulations, 2010, the trading licensees are allowed to charge trading margin upto 7 paise/kWh in case the sale price exceeds ₹3/kWh, and 4 paise/kWh where the sale price is less than or equal to ₹3/kWh. The weighted average trading margin charged by the trading licensees for bilateral transactions during the month was ₹0.040/kWh.

### **IV: Volume of Short-term Transactions of Electricity (Regional Entity<sup>1</sup>-Wise)**

Of the total bilateral transactions, top 5 regional entities sold 45.14% of the volume, and these were Punjab, GMR Chhattisgarh Energy Limited, Delhi, Thermal Powertech

---

<sup>1</sup> In case of a state, the entities which are “selling” also include generators connected to state grid and the entities which are “buying” also include open access consumers.

Corporation India Ltd. and West Bengal. Top 5 regional entities purchased 63.42% of the volume, and these were Madhya Pradesh, Andhra Pradesh, Himachal Pradesh, Gujarat and West Bengal (Table-9 & 10).

Of the total power exchange transactions, top 5 regional entities sold 34.20% of the volume, and these were Madhya Pradesh, Sembcorp Gayatri Power Ltd., Rajasthan, Jaypee Nigrie Super Thermal Power Project and Gujarat. Top 5 regional entities purchased 54.92% of the volume, and these were Telangana, Maharashtra, Tamil Nadu, Gujarat and Jammu & Kashmir (Table-11 & 12).

Of the total DSM transactions, top 5 regional entities under drew 26.80% of the volume, and these were Madhya Pradesh, NTPC Station (Western Region), Gujarat, Uttar Pradesh and Rajasthan (Table-13). Top 5 regional entities overdrew 23.12% of the volume, and these were Rajasthan, Tamil Nadu, Uttar Pradesh, Karnataka and NTPC Station (Western Region) (Table-14).

Regional entity-wise total volume of net short-term transactions of electricity i.e. volume of net transactions through bilateral, power exchanges and DSM is shown in Table-15 & 19. Top 5 electricity selling regional entities were GMR Chhattisgarh Energy Limited, Punjab, Thermal Powertech Corporation India Ltd., Sembcorp Gayatri Power Ltd. and KSK Mahanadi Power Ltd. Top 5 electricity purchasing regional entities were Andhra Pradesh, Telangana, Tamil Nadu, Madhya Pradesh and Maharashtra.

## **V: Congestion<sup>2</sup> on Inter-State Transmission Corridor for Day-Ahead Market on Power Exchanges**

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 step 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

---

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

the flow (due to congestion) in the inter-State transmission system. In such a situation, power exchanges adopt a mechanism called “Market Splitting”<sup>3</sup>.

In the month of December 2019, congestion only occurred in IEX. The details of congestion are shown in Table-16. The volume of electricity that could not be cleared due to congestion & other reasons and could not be transacted through power exchanges is the difference between unconstrained cleared volume and actual cleared volume.

During the month, the volume of electricity that could not be cleared in IEX due to congestion was 0.28% of the unconstrained cleared volume. In terms of time, congestion occurred was 2.49% in IEX (Table-16).

## **VI: Bilateral Contracts executed by Traders**

The above sections covered an analysis on short-term transactions of electricity in December, 2019. This section covers an analysis of bilateral contracts executed in January, 2020.

**(i) Duration of bilateral contracts:** During January 2020, a total of 60 bilateral contracts (excluding banking/swap contracts) have been executed by traders for the volume of 678.82 MUs. Figure-7 shows the percentage of contracts categorized according to the period of power supply. It can be observed from the figure that 78.33% of the bilateral contracts were executed for duration of up to one week, 21.67% of the contracts were executed for duration of more than a week and up to one month, while no contracts were executed for duration of more than one month and up to twelve months.

During the month, 17 banking/swapping bilateral contracts were also executed for the volume of 599.42 MUs.

---

<sup>3</sup>“ Market Splitting” is a mechanism adopted by Power Exchange 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.

**(ii) Forward Curve based on price of bilateral contracts:** A forward curve reflects present day's expectation of prices for a future period. The forward curve of electricity prices are based on sale prices of bilateral contracts executed by traders. The price of each contract for each day is taken into consideration while constructing the forward curve. On the basis of these prices, the weighted average price for each day is calculated using various sale prices of contracts for delivery on that particular day.

Figure-8 represents the forward curve of electricity sale prices for the period from 1<sup>st</sup> January, 2020 to 30<sup>th</sup> April, 2020 based on the bilateral contracts<sup>4</sup> executed till January, 2020. Forward curves have been drawn for the contracts executed in December, 2019 and January, 2020 for the purpose of comparison. It is observed that the forward contract prices are lower for the contracts executed in January 2020 compared to the contracts executed in December 2019, during the period from 1<sup>st</sup> February 2020 to 29<sup>th</sup> February 2020.

## **VII: Volume and Price of Renewable Energy Certificates (RECs)**

The concept of Renewable Energy Certificates (RECs) seeks to address mismatch between 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 development of electricity market.

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.

The details of REC transactions for the month of December, 2019 are shown in Table-20. The market clearing volume of solar RECs transacted on IEX and PXIL were 41204 and 20667 respectively and the weighted average market clearing price of these RECs was ₹2400/MWh in IEX and ₹2400/MWh in PXIL. Market clearing volume of non-solar RECs transacted on IEX and PXIL were 318785 and 123472 respectively and the weighted

---

<sup>4</sup>Excluding Banking/Swapping contracts

average market clearing price of these RECs was ₹2000/MWh in IEX and ₹1900/MWh in PXIL. For Non-Solar RECs issued before 1<sup>st</sup> April 2017, the market clearing volume on IEX was 480 and the weighted average market clearing price of these RECs was ₹3000/MWh.

The gap between the volume of buy and sell bids of RECs placed through power exchanges shows about the variation in demand for both solar and non-solar RECs. For Solar RECs, the ratio of buy bids to sell bids was 16.31 and 13.17 in IEX and PXIL respectively. For non-solar RECs, the ratio of buy bids to sell bids was 1.80 and 2.27 in IEX and PXIL respectively.

## VIII: Inferences:

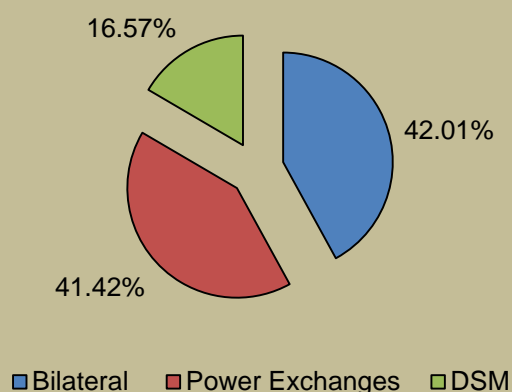
- The percentage of short-term transactions of electricity to total electricity generation was 10.60%.
- Of the total short-term transactions, bilateral constitutes 42.01% (18.73% through traders and term-ahead contracts on power exchanges and 23.29% directly between distribution companies) followed by 41.42% through day ahead collective transactions on power exchanges and 16.57% through DSM.
- Top 5 trading licensees had a share of 67.55% in the total volume traded by all the trading licensees.
- The Herfindahl Hirschman Index computed for the volume of electricity traded by trading licensees was 0.1318, indicating non-concentration of market power.
- The weighted average price of electricity transacted through trading licensees was ₹3.94/kWh. The weighted average price of electricity transacted through IEX and PXIL were ₹3.05/kWh and ₹2.93/kWh respectively.
- The average price of electricity transacted through DSM was ₹2.83/kWh.
- The weighted average trading margin charged by the trading licensees for bilateral transactions during the month was ₹0.040/kWh. The trading margin charged during the month was in line with the Trading Margin regulations.
- Top 5 electricity selling regional entities were GMR Chhattisgarh Energy Limited, Punjab, Thermal Powertech Corporation India Ltd., Sembcorp Gayatri Power Ltd. and KSK Mahanadi Power Ltd. Top 5 electricity purchasing regional entities were Andhra Pradesh, Telangana, Tamil Nadu, Madhya Pradesh and Maharashtra.
- During the month of December 2019, the volume of electricity that could not be cleared in IEX due to congestion was 0.28% of the unconstrained cleared volume. In terms of time, congestion occurred was 2.49% in IEX. PXIL did not witness any congestion.

- In January 2020, 78.33% of the bilateral contracts were executed for duration of up to one week, 21.67% of the contracts were executed for duration of more than a week and up to one month, while no contracts were executed for duration of more than one month and up to twelve months.
- The forward curves based on prices of bilateral contracts show that the prices are lower for the contracts executed in January 2020 compared to the contracts executed in December 2019, during the period from 1<sup>st</sup> February 2020 – 29<sup>th</sup> February 2020.
- The market clearing volume of solar RECs transacted on IEX and PXIL were 41204 and 20667 respectively and the weighted average market clearing price of these RECs was ₹2400/MWh in IEX and ₹2400/MWh in PXIL. Market clearing volume of non-solar RECs transacted on IEX and PXIL were 318785 and 123472 respectively and the weighted average market clearing price of these RECs was ₹2000/MWh in IEX and ₹1900/MWh in PXIL.

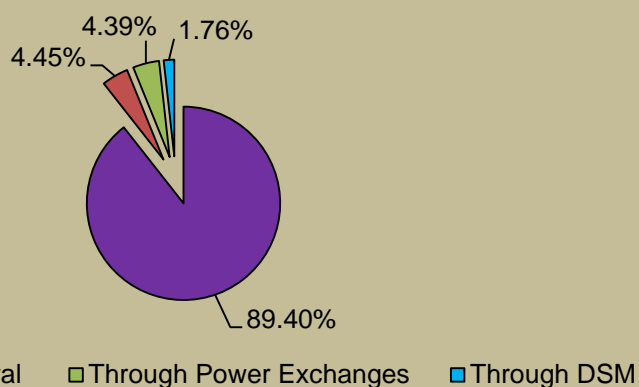
<b>Table-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (ALL INDIA), DECEMBER 2019</b>				
<b>Sr. No</b>	<b>Short-term transactions</b>	<b>Volume (MUs)</b>	<b>% to Volume of short-term transactions</b>	<b>% to Total Generation</b>
1	Bilateral	4396.42	42.01	4.45
	(i) Through Traders and PXs	1959.74	18.73	1.98
	(ii) Direct	2436.68	23.29	2.47
2	Through Power Exchanges	4333.78	41.42	4.39
	(i) IEX	4333.32	41.41	4.39
	(ii) PXIL	0.46	0.004	0.0005
3	Through DSM	1733.81	16.57	1.76
	<b>Total</b>	<b>10464.01</b>	<b>-</b>	<b>10.60</b>
	<b>Total Generation</b>	<b>98760.74</b>	<b>-</b>	<b>-</b>

Source: NLDC

**Figure-1: Volume of Short-term Transactions of Electricity,  
December 2019**

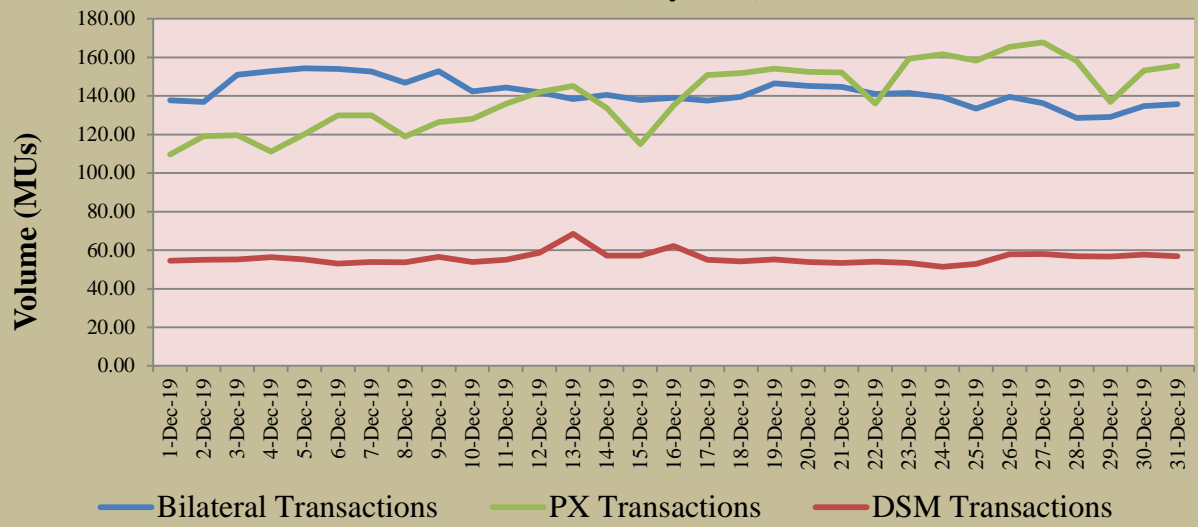


**Figure-2: Volume of Various Kinds of Electricity Transactions in Total Electricity Generation, December 2019**

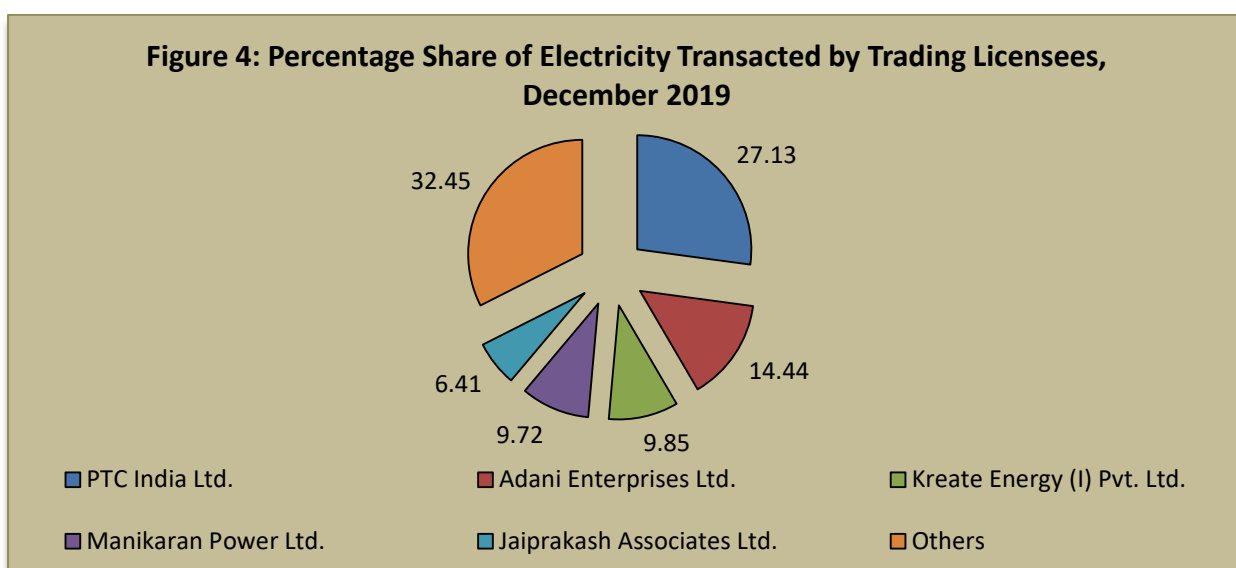




**Figure-3: Volume of Short-term Transactions of Electricity,  
December 2019 (Day-wise)**



<b>Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, DECEMBER 2019</b>			
<b>Sr. No</b>	<b>Name of the Trading Licensee</b>	<b>% Share in total Volume transacted by Trading Licensees</b>	<b>Herfindahl-Hirschman Index</b>
1	PTC India Ltd.	27.13	0.0736
2	Adani Enterprises Ltd.	14.44	0.0208
3	Kreate Energy (I) Pvt. Ltd.	9.85	0.0097
4	Manikaran Power Ltd.	9.72	0.0094
5	Jaiprakash Associates Ltd.	6.41	0.0041
6	Tata Power Trading Company (P) Ltd.	6.34	0.0040
7	Arunachal Pradesh Power Corporation (P) Ltd	5.76	0.0033
8	NHPC Limited	5.58	0.0031
9	GMR Energy Trading Ltd.	4.39	0.0019
10	NTPC Vidyut Vyapar Nigam Ltd.	2.95	0.0009
11	Knowledge Infrastructure Systems (P) Ltd	2.10	0.0004
12	Instinct Infra & Power Ltd.	1.02	0.0001
13	National Energy Trading & Services Ltd.	1.01	0.0001
14	JSW Power Trading Company Ltd	0.85	0.0001
15	Essar Electric Power Development Corp. Ltd.	0.77	0.0001
16	Statkraft Markets Pvt. Ltd.	0.54	0.0000
17	Gita Power & Infrastructure Private Limited	0.29	0.0000
18	RPG Power Trading Company Ltd.	0.28	0.0000
19	Shree Cement Ltd.	0.20	0.0000
20	Abja Power Private Limited	0.13	0.0000
21	IPCL Power Trading Pvt. Ltd.	0.10	0.0000
22	Customized Energy Solutions India (P) Ltd.	0.09	0.0000
23	Phillip Commodities India (P) Ltd.	0.06	0.0000
<b>TOTAL</b>		<b>100.00%</b>	<b>0.1318</b>
<b>Top 5 trading licensees</b>		<b>67.55%</b>	
<i>Note 1: Volume of electricity transacted by the trading licensees includes bilateral transactions (inter-state &amp; 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>			



<b>Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, DECEMBER 2019</b>		
<b>Sr.No</b>	<b>Item</b>	<b>Sale Price of Traders (₹/kWh)</b>
1	Minimum	3.01
2	Maximum	5.50
3	Weighted Average	3.94

Source: Information submitted by trading licensees

<b>Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), DECEMBER 2019</b>		
<b>Sr.No</b>	<b>Period of Trade</b>	<b>Sale Price of Traders (₹/kWh)</b>
1	RTC	3.83
2	PEAK	-
3	OFF PEAK	4.99

Source: Information submitted by trading licensees

<b>Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, DECEMBER 2019</b>			
<b>Sr.No</b>	<b>ACP</b>	<b>Price in IEX (₹/kWh)</b>	<b>Price in PXIL (₹/kWh)</b>
1	Minimum	1.70	2.89
2	Maximum	6.12	2.96
3	Weighted Average	3.05	2.93

Source: Information submitted by IEX and PXIL

<b>Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, DECEMBER 2019</b>			
<b>Sr.No</b>	<b>Term ahead contracts</b>	<b>Actual Scheduled Volume (MUs)</b>	<b>Weighted Average Price (₹/kWh)</b>
1	Intra-Day Contracts	45.95	3.80
2	Day Ahead Contingency Contracts	70.11	3.52
3	Daily Contracts	162.47	3.75
4	Weekly Contracts	155.84	3.00
	<b>Total</b>	<b>434.37</b>	<b>3.45</b>

Source: IEX

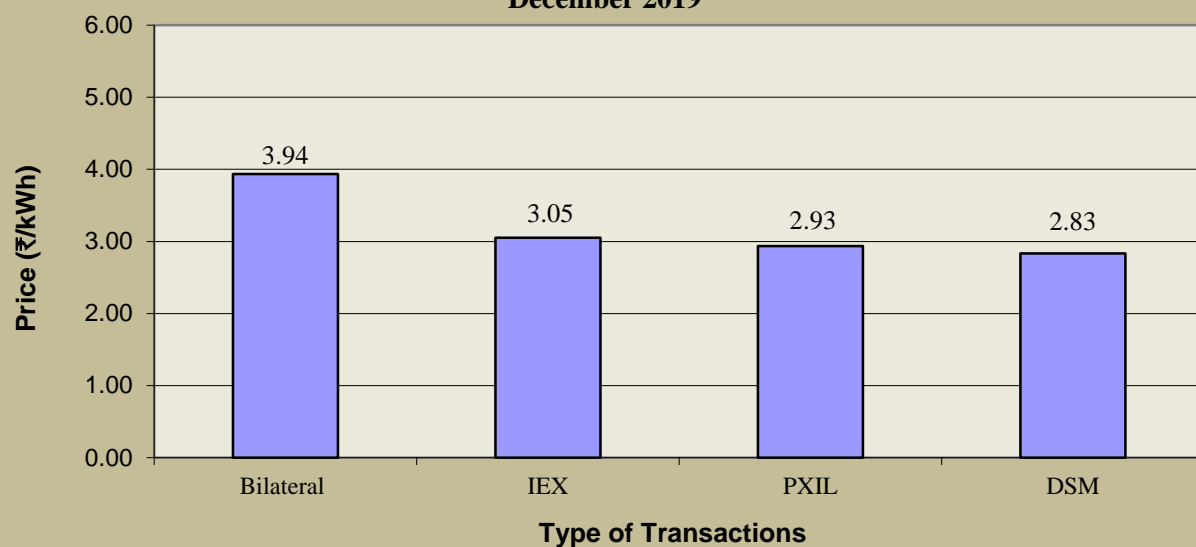
<b>Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, DECEMBER 2019</b>			
<b>Sr.No</b>	<b>Term ahead contracts</b>	<b>Actual Scheduled Volume (MUs)</b>	<b>Weighted Average Price (₹/kWh)</b>
1	Intra-Day Contracts	19.53	3.44
2	Any Day(s) Contracts	123.15	3.03
3	Weekly Contracts	0.20	3.60
	<b>Total</b>	<b>142.88</b>	<b>3.08</b>

Source: PXIL

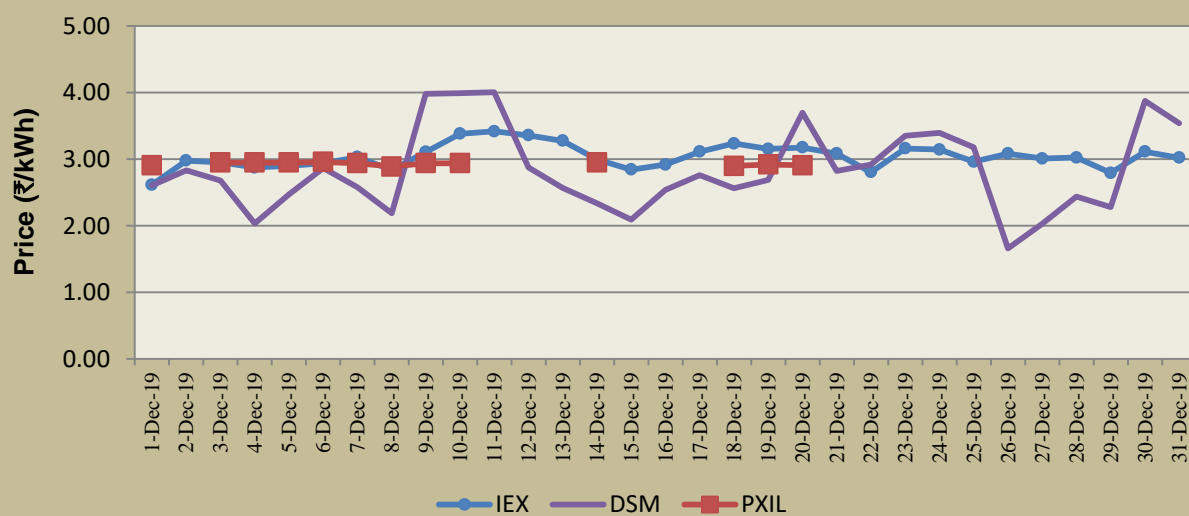
<b>Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH DSM, DECEMBER 2019</b>		
<b>Sr.No</b>	<b>Item</b>	<b>Price in All India Grid (₹/kWh)</b>
1	Minimum	0.00
2	Maximum	8.00
3	Average	2.83

Source: NLDC

**Figure-5: Price of Short-term Transactions of Electricity, December 2019**



**Figure-6: Price of Short-term Transactions of Electricity, December 2019 (Day-wise)**



**Note:** In PXIL, transactions were recorded only on 1<sup>st</sup>, 3<sup>rd</sup>–10<sup>th</sup>, 14<sup>th</sup> and 18<sup>th</sup> – 20<sup>th</sup> December 2019

<b>Table-9: VOLUME OF ELECTRICITY SOLD THROUGH BILATERAL, DECEMBER 2019</b>		
<b>Name of the Entity</b>	<b>Volume of Sale (MUs)</b>	<b>% of Volume</b>
PUNJAB	539.78	12.16
GMR CHATTISGARH	500.75	11.28
DELHI	336.54	7.58
THERMAL POWERTECH	319.25	7.19
WEST BENGAL	308.10	6.94
UTTAR PRADESH	267.78	6.03
KSK MAHANADI	267.43	6.02
CHHATTISGARH	234.05	5.27
GUJARAT	201.02	4.53
ESSAR POWER	188.55	4.25
HARYANA	186.97	4.21
DVC	142.80	3.22
ADHUNIK POWER LTD	130.55	2.94
DB POWER	94.13	2.12
ODISHA	92.00	2.07
SHREE CEMENT	59.50	1.34
IL&FS	55.59	1.25
MP	48.75	1.10
JITPL	47.16	1.06
RAJASTHAN	43.74	0.99
BIHAR	41.91	0.94
KARNATAKA	40.98	0.92
HIMACHAL PRADESH	39.02	0.88
ONGC PALATANA	31.61	0.71
GMR KAMALANGA	29.82	0.67
SKS POWER	28.82	0.65
DAGACHU	25.92	0.58
TELANGANA	22.47	0.51
J & K	16.33	0.37
JINDAL POWER	15.14	0.34
TAMIL NADU	11.29	0.25
CHUZACHEN HEP	9.73	0.22
MAHARASHTRA	9.67	0.22
ANDHRA PRADESH	9.21	0.21
BALCO	8.77	0.20
MB POWER	8.57	0.19
GOA	6.01	0.14
LANKO_AMK	5.30	0.12
NTPC STATIONS-NER	3.86	0.09
TRN ENERGY	3.42	0.08
MEGHALAYA	2.60	0.06
JAYPEE NIGRIE	1.35	0.03
MANIPUR	1.04	0.02
ACBIL	0.76	0.02
NTPC STATIONS-SR	0.46	0.01
JHABUA POWER_MP	0.41	0.01
TEESTA STG3	0.41	0.01
JHARKHAND	0.33	0.01
DIKCHU HEP	0.20	0.005
NTPC STATIONS-ER	0.16	0.004
KORBA WEST POWER	0.10	0.002
<b>Total</b>	<b>4440.13</b>	<b>100.00</b>
<b>Volume Sold by top 5 Regional Entities</b>	<b>2004.42</b>	<b>45.14</b>

<b>Table-10: VOLUME OF ELECTRICITY PURCHASED THROUGH BILATERAL, DECEMBER 2019</b>		
<b>Name of the Entity</b>	<b>Volume of Purchase (MUs)</b>	<b>% of Volume</b>
MP	1107.72	25.20
ANDHRA PRADESH	592.16	13.47
HIMACHAL PRADESH	445.86	10.14
GUJARAT	410.13	9.33
WEST BENGAL	232.47	5.29
UTTARAKHAND	218.42	4.97
ESSAR STEEL	181.56	4.13
NEPAL(NVVN)	155.53	3.54
TAMIL NADU	141.24	3.21
JHARKHAND	133.46	3.04
RAJASTHAN	129.05	2.94
BIHAR	93.73	2.13
MAHARASHTRA	92.69	2.11
TELANGANA	81.54	1.85
UTTAR PRADESH	76.44	1.74
CHHATTISGARH	54.48	1.24
GOA	52.52	1.19
DELHI	39.42	0.90
MANIPUR	37.73	0.86
DADRA & NAGAR HAVELI	33.87	0.77
ASSAM	32.90	0.75
HARYANA	17.72	0.40
ODISHA	14.71	0.33
BANGLADESH	14.69	0.33
SIKKIM	3.57	0.08
KARNATAKA	1.37	0.03
DVC	0.82	0.02
KERALA	0.63	0.01
<b>TOTAL</b>	<b>4396.42</b>	<b>100.00</b>
<b>Volume Purchased by top 5 Regional Entities</b>	<b>2788.34</b>	<b>63.42</b>

Table-11: VOLUME OF ELECTRICITY SOLD THROUGH POWER EXCHANGES, DECEMBER 2019		
Name of the Entity	Volume of Sale (MUs)	% of Volume
MP	448.23	10.34
SEMBCORP	329.82	7.61
RAJASTHAN	251.16	5.80
JAYPEE NIGRIE	226.71	5.23
GUJARAT	226.13	5.22
ODISHA	202.91	4.68
ASSAM	202.50	4.67
GMR CHATTISGARH	176.36	4.07
BIHAR	170.93	3.94
CHHATTISGARH	159.71	3.69
TEESTA STG3	143.18	3.30
KARNATAKA	132.86	3.07
UTTAR PRADESH	126.62	2.92
NLC	111.99	2.58
THERMAL POWERTECH	100.53	2.32
HIMACHAL PRADESH	93.48	2.16
WEST BENGAL	88.67	2.05
MB POWER	74.39	1.72
DELHI	66.96	1.54
JHARKHAND	62.44	1.44
JINDAL STAGE-II	61.45	1.42
SKS POWER	56.24	1.30
TRIPURA	54.98	1.27
KORBA WEST POWER	54.09	1.25
DB POWER	52.11	1.20
MARUTI COAL	48.34	1.12
ESSAR POWER	44.52	1.03
JINDAL POWER	44.34	1.02
SIMHAPURI	41.55	0.96
NTPC STATIONS-SR	36.97	0.85
ACBIL	36.03	0.83
NTPC STATIONS-WR	35.32	0.82
JHABUA POWER_MP	33.58	0.77
MAHARASHTRA	21.07	0.49
TELANGANA	20.07	0.46
ANDHRA PRADESH	19.01	0.44
UTTARAKHAND	18.29	0.42
SIKKIM	17.72	0.41
JORETHANG	16.83	0.39
GOA	16.50	0.38
HARYANA	15.76	0.36
KARCHAM WANGTOO	15.53	0.36
MANIPUR	15.10	0.35
AD HYDRO	15.08	0.35
TASHIDENG HEP	14.85	0.34
SBG CLEANTECH_SLR	14.20	0.33
MIZORAM	14.03	0.32
SAINJ HEP	13.59	0.31

NTPC STATIONS-ER	10.84	0.25
CHANDIGARH	10.52	0.24
DIKCHU HEP	10.07	0.23
SPECTRUM	9.10	0.21
NTPC STATIONS-NER	8.13	0.19
NTPC STATIONS-NR	8.08	0.19
JITPL	7.80	0.18
IL&FS	7.23	0.17
SHREE CEMENT	6.00	0.14
ADHUNIK POWER LTD	2.46	0.06
GMR KAMALANGA	2.32	0.05
ARUNACHAL PRADESH	2.31	0.05
CHUZACHEN HEP	1.56	0.04
KERALA	1.07	0.02
ONGC PALATANA	1.04	0.02
LANCO BUDHIL	0.77	0.02
J & K	0.52	0.01
DVC	0.40	0.01
PUNJAB	0.40	0.01
DHARIWAL POWER	0.21	0.005
MALANA	0.11	0.003
BALCO	0.10	0.002
RGPPL (DABHOL)	0.03	0.001
NAGALAND	0.02	0.0004
<b>Total</b>	<b>4333.78</b>	<b>100.00</b>
<b>Volume sold by top 5 Regional Entities</b>	<b>1482.05</b>	<b>34.20</b>



<b>Table-12: VOLUME OF ELECTRICITY PURCHASED THROUGH POWER EXCHANGES, DECEMBER 2019</b>		
<b>Name of the Entity</b>	<b>Volume of Purchase (MUs)</b>	<b>% of Volume</b>
TELANGANA	683.78	15.78
MAHARASHTRA	483.65	11.16
TAMIL NADU	433.30	10.00
GUJARAT	417.50	9.63
J & K	361.88	8.35
DELHI	319.40	7.37
RAJASTHAN	254.45	5.87
ANDHRA PRADESH	147.53	3.40
HARYANA	143.29	3.31
DADRA & NAGAR HAVELI	104.54	2.41
KARNATAKA	103.95	2.40
UTTARAKHAND	103.45	2.39
CHHATTISGARH	102.18	2.36
KERALA	102.16	2.36
UTTAR PRADESH	96.96	2.24
PUNJAB	92.16	2.13
BIHAR	78.70	1.82
ODISHA	55.32	1.28
WEST BENGAL	47.04	1.09
DAMAN AND DIU	46.40	1.07
HIMACHAL PRADESH	44.19	1.02
ASSAM	27.43	0.63
MEGHALAYA	26.48	0.61
GOA	17.74	0.41
CHANDIGARH	10.01	0.23
ESSAR STEEL	6.77	0.16
MP	6.65	0.15
NAGALAND	6.56	0.15
JHARKHAND	6.32	0.15
DVC	1.64	0.04
MANIPUR	1.51	0.03
ARUNACHAL PRADESH	0.85	0.02
<b>TOTAL</b>	<b>4333.78</b>	<b>100.00</b>
<b>Volume purchased by top 5 Regional Entities</b>	<b>2380.11</b>	<b>54.92</b>

<b>Table-13: VOLUME OF ELECTRICITY UNDER DRAWAL (EXPORTED) THROUGH DSM, DECEMBER 2019</b>		
<b>Name of the Entity</b>	<b>Volume of Under drawal (MUs)</b>	<b>% of Volume</b>
MP	111.26	6.71
NTPC STATIONS-WR	105.40	6.36
GUJARAT	81.09	4.89
UTTAR PRADESH	74.40	4.49
RAJASTHAN	72.18	4.35
NTPC STATIONS-NR	65.30	3.94
MAHARASHTRA	64.77	3.91
BIHAR	62.58	3.77
NHPC STATIONS	62.23	3.75
SASAN UMPP	56.55	3.41
TELANGANA	52.66	3.18
NLC	45.25	2.73
PUNJAB	44.16	2.66
TAMIL NADU	37.44	2.26
CHUKHA HEP	36.09	2.18
KARNATAKA	34.31	2.07
HARYANA	30.64	1.85
ANDHRA PRADESH	30.06	1.81
NTPC STATIONS-ER	26.85	1.62
CHHATTISGARH	26.48	1.60
ODISHA	25.80	1.56
DVC	25.12	1.51
NTPC STATIONS-SR	24.74	1.49
J & K	23.11	1.39
DELHI	22.49	1.36
ESSAR STEEL	21.42	1.29
WEST BENGAL	20.18	1.22
HIMACHAL PRADESH	19.85	1.20
UTTARAKHAND	19.05	1.15
GIWEL_BHUJ	15.94	0.96
JHARKHAND	14.22	0.86
BBMB	11.50	0.69
PONDICHERRY	11.39	0.69
TRIPURA	11.38	0.69
OSTRO	11.29	0.68
GOA	9.87	0.60
BRBCL,NABINAGAR	8.79	0.53
NEPAL(NVVN)	8.77	0.53
RAP C	8.74	0.53
RENEW_BHACHAU	8.66	0.52
NEEPCO STATIONS	7.75	0.47
NTPC STATIONS-NER	7.50	0.45
RGPPL (DABHOL)	7.28	0.44
ASSAM	6.21	0.37
MAITHON POWER LTD	5.85	0.35
JAYPEE NIGRIE	5.59	0.34
BANGLADESH	5.53	0.33

NJPC	5.48	0.33
AZURE_SLR	5.24	0.32
RAIL	4.96	0.30
TEESTA HEP	4.81	0.29
CGPL	4.73	0.29
KARCHAM WANGTOO	3.94	0.24
DADRA & NAGAR HAVELI	3.86	0.23
RAMPUR HEP	3.82	0.23
ARINSUM_RUMS	3.79	0.23
TEHRI	3.69	0.22
MANGDECHU HEP	3.68	0.22
MB POWER	3.68	0.22
MAHOBIA_SLR	3.59	0.22
MAHINDRA_RUMS	3.56	0.21
ACBIL	3.55	0.21
SB_SLR	3.45	0.21
TATA_SLR	3.23	0.19
ACME_RUMS	3.21	0.19
RENEW_SLR_BKN	3.09	0.19
AZURE34_SLR	3.03	0.18
CHANDIGARH	3.01	0.18
KERALA	2.96	0.18
ACME_SLR	2.96	0.18
INOX_BHUJ	2.84	0.17
AGEMPL BHUJ	2.82	0.17
NPGC	2.77	0.17
LANKO_AMK	2.70	0.16
GMR CHATTISGARH	2.61	0.16
ADHUNIK POWER LTD	2.52	0.15
ARUNACHAL PRADESH	2.45	0.15
SEMBICORP	2.39	0.14
MANIPUR	2.33	0.14
MIZORAM	2.30	0.14
EMCO	2.22	0.13
NAGALAND	2.21	0.13
COASTGEN	2.10	0.13
KOTESHWAR	2.09	0.13
CLEAN_SLR	2.08	0.13
TRN ENERGY	1.99	0.12
JINDAL STAGE-II	1.90	0.11
KSK MAHANADI	1.85	0.11
SIKKIM	1.80	0.11
TEESTA STG3	1.69	0.10
JINDAL POWER	1.65	0.10
KISHANGANGA HEP	1.60	0.10
RANGANADI HEP	1.58	0.10
NTPL	1.55	0.09
THERMAL POWERTECH	1.54	0.09
LOKTAK	1.51	0.09
BALCO	1.48	0.09
RAP B	1.44	0.09
DHARIWAL POWER	1.40	0.08
IGSTPS	1.35	0.08

NSPCL	1.31	0.08
NETCL VALLUR	1.29	0.08
ESSAR POWER	1.25	0.08
JHABUA POWER_MP	1.23	0.07
RKM POWER	1.17	0.07
SKS POWER	1.15	0.07
MTPS II	1.12	0.07
RANGIT HEP	0.83	0.05
ONGC PALATANA	0.82	0.05
TASHIDENG HEP	0.78	0.05
SHREE CEMENT	0.77	0.05
DB POWER	0.76	0.05
KORBA WEST POWER	0.74	0.04
SAINJ HEP	0.73	0.04
DAMAN AND DIU	0.70	0.04
LANCO BUDHIL	0.69	0.04
AD HYDRO	0.60	0.04
MEGHALAYA	0.56	0.03
DIKCHU HEP	0.49	0.03
IL&FS	0.49	0.03
GMR KAMALANGA	0.48	0.03
JITPL	0.46	0.03
PARE HEP	0.45	0.03
CHUZACHEN HEP	0.45	0.03
DOYANG HEP	0.44	0.03
JORETHANG	0.41	0.02
NAPP	0.40	0.02
BARC	0.39	0.02
RENEW_SLR	0.38	0.02
BHADRAVATHI HVDC	0.18	0.01
NFF	0.18	0.01
VINDHYACHAL HVDC	0.15	0.01
HVDC ALPD	0.15	0.01
DCPP	0.12	0.01
HVDC PUS	0.11	0.007
HVDC CHAMPA	0.08	0.005
KURICHU HEP	0.02	0.001
MALANA	0.01	0.0004
<b>Total</b>	<b>1658.11</b>	<b>100.00</b>
<b>Volume Exported by top 5 Regional Entities</b>	<b>444.33</b>	<b>26.80</b>

<b>Table-14: VOLUME OF ELECTRICITY OVER DRAWAL (IMPORTED) THROUGH DSM, NOVEMBER 2019</b>		
<b>Name of the Entity</b>	<b>Volume of Over drawal (MUs)</b>	<b>% of Volume</b>
RAJASTHAN	97.83	5.41
TAMIL NADU	82.93	4.58
UTTAR PRADESH	80.52	4.45
KARNATAKA	79.72	4.41
NTPC STATIONS-WR	77.29	4.27
TALA HEP	76.16	4.21
NTPC STATIONS-NR	68.52	3.79
J & K	53.19	2.94
HARYANA	48.82	2.70
GUJARAT	46.23	2.56
NTPC STATIONS-ER	41.94	2.32
ANDHRA PRADESH	41.06	2.27
KERALA	38.74	2.14
TELANGANA	38.36	2.12
WEST BENGAL	35.58	1.97
MAHARASHTRA	35.01	1.93
BIHAR	34.76	1.92
DVC	34.17	1.89
NTPC STATIONS-SR	32.54	1.80
CHHATTISGARH	32.04	1.77
MP	28.40	1.57
CGPL	28.24	1.56
ODISHA	27.65	1.53
UTTARAKHAND	26.53	1.47
DB POWER	24.38	1.35
NLC	23.45	1.30
HIMACHAL PRADESH	22.35	1.24
ESSAR STEEL	20.91	1.16
RAP B	20.24	1.12
RGPPL (DABHOL)	18.93	1.05
JHARKHAND	18.54	1.02
PUNJAB	17.92	0.99
NHPC STATIONS	17.65	0.98
DAMAN AND DIU	17.54	0.97
MEENAKSHI	17.21	0.95
DELHI	16.63	0.92
KURICHU HEP	16.09	0.89
ASSAM	14.70	0.81
JHABUA POWER_MP	14.24	0.79
GMR CHATTISGARH	13.29	0.73
MARUTI COAL	12.37	0.68
GIWEL_BHUJ	11.88	0.66
CHANDIGARH	10.94	0.60
NETCL VALLUR	10.73	0.59
RAP C	9.32	0.52
BALCO	8.96	0.50
GOA	8.82	0.49
BANGLADESH	8.43	0.47
OSTRO	7.86	0.43

NTPC STATIONS-NER	7.76	0.43
DAGACHU	7.57	0.42
GMR KAMALANGA	6.87	0.38
JINDAL STAGE-II	6.78	0.37
IL&FS	6.52	0.36
ARUNACHAL PRADESH	6.23	0.34
RENEW_BHACHAU	6.11	0.34
SIKKIM	5.94	0.33
KAPP 3&4	5.86	0.32
KORBA WEST POWER	5.74	0.32
NEPAL(NVVN)	5.64	0.31
MAHINDRA_RUMS	5.57	0.31
JITPL	5.45	0.30
NPGC	5.25	0.29
NTPL	5.25	0.29
IGSTPS	5.20	0.29
EMCO	4.96	0.27
MANGDECHU HEP	4.91	0.27
KARCHAM WANGTOO	4.60	0.25
BRBCL,NABINAGAR	4.59	0.25
ESSAR POWER	4.04	0.22
DADRA & NAGAR HAVELI	3.86	0.21
THERMAL POWERTECH	3.79	0.21
MAHOBIA_SLR	3.71	0.20
RENEW_SLR_BKN	3.70	0.20
BBMB	3.64	0.20
MIZORAM	3.55	0.20
MEGHALAYA	3.54	0.20
ARINSUM_RUMS	3.28	0.18
ACME_RUMS	3.27	0.18
MANIPUR	3.24	0.18
NJPC	3.21	0.18
SB_SLR	3.18	0.18
MAITHON POWER LTD	3.17	0.18
TEESTA STG3	3.07	0.17
RAIL	3.02	0.17
AGEMPL BHUJ	2.91	0.16
AZURE_SLR	2.72	0.15
INOX_BHUJ	2.66	0.15
ADHUNIK POWER LTD	2.65	0.15
TRIPURA	2.62	0.14
SEMBCORP	2.56	0.14
AZURE34_SLR	2.43	0.13
COASTGEN	2.35	0.13
NAPP	2.11	0.12
ACME_SLR	2.09	0.12
PONDICHERY	2.06	0.11
HVDC CHAMPA	2.01	0.11
KSK MAHANADI	1.99	0.11
TATA_SLR	1.90	0.10
TEHRI	1.86	0.10
ACBIL	1.84	0.10
SHREE CEMENT	1.81	0.10

JORETHANG	1.66	0.09
NSPCL	1.66	0.09
KOTESHWAR	1.65	0.09
NEEPCO STATIONS	1.63	0.09
SASAN UMPP	1.50	0.08
JINDAL POWER	1.37	0.08
JAYPEE NIGRIE	1.25	0.07
DGEN MEGA POWER	1.22	0.07
NAGALAND	1.19	0.07
RANGANADI HEP	1.17	0.06
CLEAN_SLR	1.16	0.06
TASHIDENG HEP	1.15	0.06
NEP	1.10	0.06
RENEW_SLR	0.96	0.05
TRN ENERGY	0.93	0.05
KISHANGANGA HEP	0.82	0.05
ONGC PALATANA	0.82	0.05
RKM POWER	0.81	0.04
DHARIWAL POWER	0.66	0.04
MB POWER	0.61	0.03
RAMPUR HEP	0.60	0.03
LANKO_AMK	0.60	0.03
LANKO KONDAPALLI	0.58	0.03
AD HYDRO	0.46	0.03
SIMHAPURI	0.43	0.02
DIKCHU HEP	0.41	0.02
RANGIT HEP	0.39	0.02
LANCO BUDHIL	0.32	0.02
TEESTA HEP	0.28	0.02
DOYANG HEP	0.28	0.02
SAINJ HEP	0.23	0.01
SKS POWER	0.22	0.01
DCPP	0.20	0.01
NFF	0.19	0.01
LOKTAK	0.15	0.01
PARE HEP	0.15	0.01
CHUZACHEN HEP	0.12	0.01
CHUKHA HEP	0.11	0.01
BARC	0.03	0.002
MALANA	0.02	0.001
HVDC ALPD	0.02	0.001
BHADRAVATHI HVDC	0.02	0.001
HVDC PUS	0.02	0.001
VINDHYACHAL HVDC	0.002	0.0001
<b>TOTAL</b>	<b>1809.33</b>	<b>100.00</b>
<b>Volume Imported by top 5 Regional Entities</b>	<b>418.30</b>	<b>23.12</b>

<b>Table-15: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY-WISE), DECEMBER 2019</b>		
<b>S. No.</b>	<b>Name of the Entity</b>	<b>Total volume of net short-term transactions of electricity*</b>
1	ANDHRA PRADESH	722.46
2	TELANGANA	708.48
3	TAMIL NADU	599.65
4	MP	534.52
5	MAHARASHTRA	515.85
6	J & K	375.10
7	GUJARAT	365.62
8	HIMACHAL PRADESH	360.05
9	UTTARAKHAND	311.07
10	ESSAR STEEL	187.82
11	NEPAL(NVVN)	152.40
12	DADRA & NAGAR HAVELI	138.41
13	KERALA	137.49
14	RAJASTHAN	114.25
15	JHARKHAND	81.34
16	TALA HEP	76.16
17	DAMAN AND DIU	63.24
18	GOA	46.70
19	MEGHALAYA	40.53
20	MANIPUR	24.01
21	CGPL	23.51
22	RAP B	18.80
23	BANGLADESH	17.59
24	KURICHU HEP	16.07
25	RGPL (DABHOL)	11.61
26	NETCL VALLUR	9.45
27	CHANDIGARH	7.42
28	KAPP 3&4	5.86
29	NAGALAND	5.52
30	NTPC STATIONS-ER	4.10
31	IGSTPS	3.85
32	NTPL	3.70
33	EMCO	2.74
34	NPGC	2.48
35	MTPS II	2.43
36	ARUNACHAL PRADESH	2.32
37	MAHINDRA_RUMS	2.01
38	HVDC CHAMPA	1.93
39	NAPP	1.71
40	MANGDECHU HEP	1.23
41	DGEN MEGA POWER	1.22
42	NEP	1.10
43	MEENAKSHI	0.61
44	RENEW_SLR_BKN	0.61
45	RAP C	0.59
46	LANKO KONDAPALLI	0.58
47	RENEW_SLR	0.58
48	SIMHAPURI	0.43



49	NSPCL	0.35
50	COASTGEN	0.26
51	MAHOBA_SLR	0.11
52	AGEMPL BHUJ	0.08
53	DCPP	0.08
54	ACME_RUMS	0.05
55	NFF	0.01
56	HVDC PUS	-0.09
57	MALANA	-0.10
58	HVDC ALPD	-0.13
59	VINDHYACHAL HVDC	-0.15
60	DOYANG HEP	-0.16
61	BHADRAVATHI HVDC	-0.16
62	INOX_BHUJ	-0.18
63	SB_SLR	-0.27
64	PARE HEP	-0.31
65	BARC	-0.36
66	RKM POWER	-0.37
67	RANGANADI HEP	-0.41
68	RANGIT HEP	-0.45
69	KOTESHWAR	-0.45
70	ARINSUM_RUMS	-0.50
71	AZURE34_SLR	-0.60
72	KISHANGANGA HEP	-0.78
73	ACME_SLR	-0.87
74	CLEAN_SLR	-0.92
75	DHARIWAL POWER	-0.95
76	LANCO BUDHIL	-1.14
77	TATA_SLR	-1.33
78	LOKTAK	-1.35
79	BALCO	-1.39
80	TEHRI	-1.83
81	RAIL	-1.94
82	NJPC	-2.26
83	AZURE_SLR	-2.52
84	RENEW_BHACHAU	-2.55
85	MAITHON POWER LTD	-2.68
86	RAMPUR HEP	-3.22
87	OSTRO	-3.43
88	GIWEL_BHUJ	-4.06
89	BRBCL,NABINAGAR	-4.20
90	TRN ENERGY	-4.48
91	TEESTA HEP	-4.52
92	NTPC STATIONS-NR	-4.86
93	NEEPCO STATIONS	-6.13
94	LANKO_AMK	-7.40
95	BBMB	-7.86
96	PONDICHERRY	-9.34
97	SIKKIM	-10.01
98	DIKCHU HEP	-10.35
99	CHUZACHEN HEP	-11.62
100	NTPC STATIONS-NER	-11.73

101	MIZORAM	-12.78
102	SAINJ HEP	-14.09
103	SBG CLEANTECH_SLR	-14.20
104	TASHIDENG HEP	-14.48
105	KARCHAM WANGTOO	-14.87
106	AD HYDRO	-15.22
107	JORETHANG	-15.58
108	DAGACHU	-18.35
109	JHABUA POWER_MP	-20.98
110	KARNATAKA	-23.12
111	HARYANA	-23.54
112	GMR KAMALANGA	-25.75
113	NTPC STATIONS-SR	-29.64
114	ONGC PALATANA	-32.67
115	CHUKHA HEP	-35.98
116	ACBIL	-38.49
117	NHPC STATIONS	-44.58
118	MARUTI COAL	-48.34
119	KORBA WEST POWER	-49.18
120	JITPL	-49.97
121	DELHI	-50.54
122	SASAN UMPP	-55.05
123	SPECTRUM	-56.24
124	JINDAL STAGE-II	-56.57
125	IL&FS	-56.80
126	JINDAL POWER	-59.77
127	NTPC STATIONS-WR	-63.43
128	TRIPURA	-63.74
129	SHREE CEMENT	-64.46
130	BIHAR	-68.23
131	SKS POWER	-71.30
132	MB POWER	-74.26
133	WEST BENGAL	-101.86
134	DB POWER	-122.62
135	DVC	-131.69
136	ADHUNIK POWER LTD	-132.89
137	ASSAM	-133.68
138	NLC	-133.79
139	TEESTA STG3	-142.21
140	UTTAR PRADESH	-214.88
141	ODISHA	-223.04
142	ESSAR POWER	-230.28
143	CHHATTISGARH	-231.54
144	JAYPEE NIGRIE	-232.40
145	KSK MAHANADI	-267.29
146	SEMBCORP	-329.65
147	THERMAL POWERTECH	-417.53
148	PUNJAB	-474.25
149	GMR CHATTISGARH	-666.43
* Total volume of net short-term transactions of electricity includes net of transactions of electricity through bilateral, power exchange and UI		
(-) indicates sale and (+) indicates purchase		

<b>Table-16: DETAILS OF CONGESTION IN POWER EXCHANGES, DECEMBER 2019</b>			
	<b>Details of Congestion</b>	<b>IEX</b>	<b>PXIL</b>
A	Unconstrained Cleared Volume (MUs)	4345.36	0.46
B	Actual Cleared Volume and hence scheduled (MUs)	4333.32	0.46
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs)*	12.04	0.00
D	Volume of electricity that could not be cleared and hence not scheduled because of reasons other than congestion (MUs)	0.00	0.00
E	Volume of electricity that could not be cleared as % to Unconstrained Cleared Volume	0.28%	0.00%
F	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	2.49%	0.00%
G	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	1.35%	0.00%
	6.00 - 12.00 hours	71.62%	0.00%
	12.00 - 18.00 hours	0.00%	0.00%
	18.00 - 24.00 hours	27.03%	0.00%
<i>*This power would have been scheduled had there been no congestion</i>			
<i>Source: IEX &amp; PXIL &amp; NLDC</i>			

<b>Table-17: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA (DAY-WISE) (MUs), DECEMBER 2019</b>						
<b>Date</b>	<b>Bilateral</b>		<b>Power Exchange (Area Clearing Volume<sup>#</sup> of Day Ahead Market)</b>		<b>Deviation Settlement (Over Drawl+Under Generation)</b>	<b>Total Electricity Generation (MU) as given at CEA Website*</b>
	<b>Through Traders and PXs**</b>	<b>Direct</b>	<b>IEX</b>	<b>PXIL</b>		
1-Dec-19	65.66	72.02	109.72	0.03	54.58	2985.96
2-Dec-19	62.94	73.93	119.19	0.00	55.09	3039.97
3-Dec-19	77.31	73.70	119.52	0.03	55.13	3041.64
4-Dec-19	73.35	79.45	111.10	0.03	56.37	3054.92
5-Dec-19	71.80	82.51	120.05	0.03	55.24	3104.88
6-Dec-19	70.36	83.57	129.83	0.05	53.11	3129.88
7-Dec-19	69.88	82.80	129.87	0.05	53.90	3070.92
8-Dec-19	68.03	78.81	119.00	0.05	53.69	2981.86
9-Dec-19	72.16	80.65	126.35	0.04	56.46	3175.35
10-Dec-19	65.09	77.30	128.02	0.04	53.89	3256.30
11-Dec-19	66.45	77.87	135.98	0.00	55.09	3331.55
12-Dec-19	62.39	79.45	142.03	0.00	58.70	3252.51
13-Dec-19	59.71	78.65	145.17	0.00	68.57	3064.40
14-Dec-19	62.66	77.97	133.65	0.04	57.25	3111.28
15-Dec-19	60.49	77.45	114.96	0.00	57.12	2939.68
16-Dec-19	61.24	77.83	135.05	0.00	62.17	3022.56
17-Dec-19	58.54	79.07	150.78	0.00	55.04	3071.58
18-Dec-19	60.56	78.93	151.89	0.02	54.28	3185.11
19-Dec-19	61.97	84.55	154.11	0.03	55.25	3249.99
20-Dec-19	60.27	84.88	152.49	0.02	53.87	3362.08
21-Dec-19	59.62	85.13	152.14	0.00	53.31	3267.52
22-Dec-19	61.06	80.07	136.09	0.00	54.08	3119.43
23-Dec-19	56.14	85.34	159.25	0.00	53.39	3286.52
24-Dec-19	56.32	83.10	161.62	0.00	51.37	3353.04
25-Dec-19	56.32	77.12	158.35	0.00	52.86	3320.51
26-Dec-19	60.86	78.72	165.46	0.00	57.82	3377.52
27-Dec-19	61.85	74.41	167.76	0.00	58.08	3359.92
28-Dec-19	57.04	71.52	158.10	0.00	56.92	3295.44
29-Dec-19	55.92	73.23	136.94	0.00	56.63	3215.49
30-Dec-19	60.53	74.20	153.17	0.00	57.77	3333.91
31-Dec-19	63.23	72.46	155.69	0.00	56.79	3399.02
<b>Total</b>	<b>1959.74</b>	<b>2436.68</b>	<b>4333.32</b>	<b>0.46</b>	<b>1733.81</b>	<b>98760.74</b>
Source: NLDC						
* Gross Electricity Generation excluding electricity generation from renewables and captive power plants.						
** The volume of bilateral through PXs represents the volume through term-ahead contracts.						
# Area Clearing Volume represents the scheduled volume of all the bid areas.						

<b>Table-18: PRICE OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (DAY-WISE) (₹/kWh), DECEMBER 2019</b>									
<b>Market Segment</b>	<b>Day ahead market of IEX</b>			<b>Day ahead market of PXIL</b>			<b>Under Drawl/Over Drawl from the Grid (DSM)</b>		
<b>Date</b>	<b>Mini mum ACP</b>	<b>Maxi mum ACP</b>	<b>Weighted Average Price*</b>	<b>Mini mum ACP</b>	<b>Maxi mum ACP</b>	<b>Weighted Average Price*</b>	<b>All India Grid</b>		
							<b>Minim um Price</b>	<b>Maxi mum Price</b>	<b>Average Price**</b>
1-Dec-19	1.99	3.15	2.62	2.91	2.91	2.91	0.00	6.99	2.61
2-Dec-19	2.00	4.26	2.98	-	-	-	0.00	6.72	2.83
3-Dec-19	2.00	4.27	2.95	2.95	2.95	2.95	0.00	6.71	2.68
4-Dec-19	2.00	3.86	2.88	2.95	2.95	2.95	0.00	5.41	2.04
5-Dec-19	2.03	3.90	2.90	2.95	2.95	2.95	0.00	7.03	2.47
6-Dec-19	2.00	4.20	2.94	2.96	2.96	2.96	0.00	6.71	2.87
7-Dec-19	2.00	4.25	3.03	2.94	2.94	2.94	0.00	7.05	2.58
8-Dec-19	2.00	3.67	2.84	2.89	2.89	2.89	0.00	8.00	2.19
9-Dec-19	1.94	4.25	3.11	2.94	2.94	2.94	0.00	8.00	3.98
10-Dec-19	2.00	5.01	3.38	2.94	2.94	2.94	0.00	8.00	3.99
11-Dec-19	2.20	5.04	3.42	-	-	-	0.00	8.00	4.00
12-Dec-19	2.00	4.70	3.36	-	-	-	0.00	8.00	2.88
13-Dec-19	2.10	4.80	3.28	-	-	-	0.00	7.39	2.57
14-Dec-19	2.00	4.22	3.00	2.95	2.95	2.95	0.00	5.46	2.34
15-Dec-19	2.08	3.55	2.84	-	-	-	0.00	8.00	2.09
16-Dec-19	1.85	3.55	2.92	-	-	-	0.00	8.00	2.54
17-Dec-19	2.00	5.31	3.11	-	-	-	0.00	6.48	2.76
18-Dec-19	2.00	6.12	3.24	2.90	2.90	2.90	0.00	8.00	2.56
19-Dec-19	2.00	4.71	3.15	2.92	2.92	2.92	0.00	7.38	2.69
20-Dec-19	2.00	5.00	3.17	2.91	2.91	2.91	0.00	8.00	3.70
21-Dec-19	2.00	4.28	3.09	-	-	-	0.00	5.81	2.82
22-Dec-19	1.84	3.94	2.80	-	-	-	0.00	6.68	2.92
23-Dec-19	1.70	4.50	3.16	-	-	-	0.00	8.00	3.35
24-Dec-19	2.00	4.50	3.14	-	-	-	0.00	8.00	3.39
25-Dec-19	1.94	4.50	2.96	-	-	-	0.00	8.00	3.18
26-Dec-19	2.00	5.51	3.08	-	-	-	0.00	8.00	1.66
27-Dec-19	2.01	3.75	3.01	-	-	-	0.00	7.36	2.03
28-Dec-19	2.00	3.75	3.03	-	-	-	0.00	6.41	2.44
29-Dec-19	2.00	3.60	2.79	-	-	-	0.00	8.00	2.28
30-Dec-19	1.92	4.15	3.11	-	-	-	0.00	8.00	3.88
31-Dec-19	2.00	4.08	3.02	-	-	-	0.00	8.00	3.54
	<b>1.70<sup>#</sup></b>	<b>6.12<sup>#</sup></b>	<b>3.05</b>	<b>2.89<sup>#</sup></b>	<b>2.96<sup>#</sup></b>	<b>2.93</b>	<b>0.00<sup>#</sup></b>	<b>8.00<sup>#</sup></b>	<b>2.83</b>
<i>Source: Data on price of PX transactions from IEX and PXIL and data on DSM Price from NLDC.</i>									
<i>* 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.</i>									
<i>** Simple average price of DSM of 96 time blocks of 15 minutes each in a day. DSM price includes Ceiling DSM Rate +40% additional DSM charge.</i>									
<i># Maximum/Minimum in the month</i>									

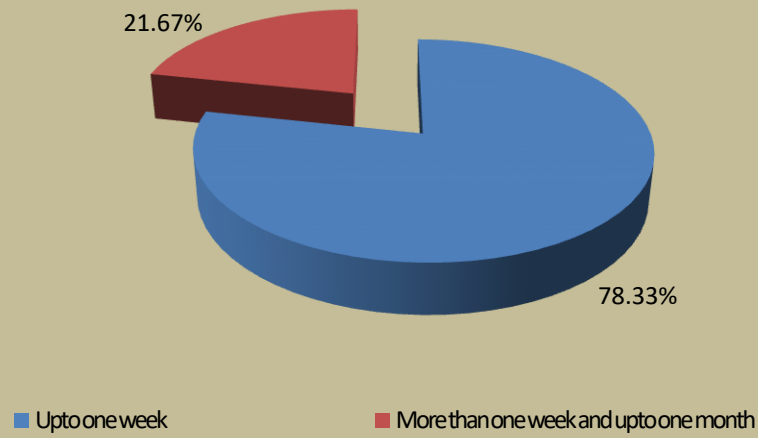
<b>Table-19: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY*-WISE) (MUs), DECEMBER 2019</b>										
<b>Name of the Entity</b>	<b>Through Bilateral</b>			<b>Through Power Exchange</b>			<b>Through DSM with Regional Grid</b>			<b>Total Net***</b>
	<b>Sale</b>	<b>Purchase</b>	<b>Net**</b>	<b>Sale</b>	<b>Purchase</b>	<b>Net**</b>	<b>Import (Over Drawl)</b>	<b>Export (Under Drawl)</b>	<b>Net**</b>	
PUNJAB	539.78	0.00	-539.78	0.40	92.16	91.76	17.92	44.16	-26.23	-474.25
HARYANA	186.97	17.72	-169.25	15.76	143.29	127.53	48.82	30.64	18.18	-23.54
RAJASTHAN	43.74	129.05	85.31	251.16	254.45	3.29	97.83	72.18	25.65	114.25
DELHI	336.54	39.42	-297.13	66.96	319.40	252.44	16.63	22.49	-5.86	-50.54
U P	267.78	76.44	-191.34	126.62	96.96	-29.65	80.52	74.40	6.12	-214.88
UTTARAKHAND	0.00	218.42	218.42	18.29	103.45	85.16	26.53	19.05	7.48	311.07
H PRADESH	39.02	445.86	406.84	93.48	44.19	-49.29	22.35	19.85	2.50	360.05
J & K	16.33	0.00	-16.33	0.52	361.88	361.36	53.19	23.11	30.08	375.10
CHANDIGARH	0.00	0.00	0.00	10.52	10.01	-0.51	10.94	3.01	7.93	7.42
MP	48.75	1107.72	1058.97	448.23	6.65	-441.58	28.40	111.26	-82.86	534.52
MAHARASHTRA	9.67	92.69	83.02	21.07	483.65	462.58	35.01	64.77	-29.76	515.85
GUJARAT	201.02	410.13	209.11	226.13	417.50	191.37	46.23	81.09	-34.86	365.62
CHHATTISGARH	234.05	54.48	-179.57	159.71	102.18	-57.53	32.04	26.48	5.56	-231.54
GOA	6.01	52.52	46.50	16.50	17.74	1.25	8.82	9.87	-1.05	46.70
DAMAN AND DIU	0.00	0.00	0.00	0.00	46.40	46.40	17.54	0.70	16.84	63.24
DADRA & NAGAR H	0.00	33.87	33.87	0.00	104.54	104.54	3.86	3.86	-0.01	138.41
ANDHRA P	9.21	592.16	582.95	19.01	147.53	128.52	41.06	30.06	11.00	722.46
KARNATAKA	40.98	1.37	-39.61	132.86	103.95	-28.91	79.72	34.31	45.40	-23.12
KERALA	0.00	0.63	0.63	1.07	102.16	101.09	38.74	2.96	35.77	137.49
TAMIL NADU	11.29	141.24	129.95	9.10	433.30	424.20	82.93	37.44	45.50	599.65
PONDICHERRY	0.00	0.00	0.00	0.00	0.00	0.00	2.06	11.39	-9.34	-9.34
TELANGANA	22.47	81.54	59.07	20.07	683.78	663.71	38.36	52.66	-14.30	708.48
WEST BENGAL	308.10	232.47	-75.63	88.67	47.04	-41.63	35.58	20.18	15.41	-101.86
ODISHA	92.00	14.71	-77.30	202.91	55.32	-147.60	27.65	25.80	1.85	-223.04
BIHAR	41.91	93.73	51.82	170.93	78.70	-92.23	34.76	62.58	-27.82	-68.23
JHARKHAND	0.33	133.46	133.14	62.44	6.32	-56.12	18.54	14.22	4.33	81.34
SIKKIM	0.00	3.57	3.57	17.72	0.00	-17.72	5.94	1.80	4.14	-10.01
DVC	142.80	0.82	-141.98	0.40	1.64	1.24	34.17	25.12	9.05	-131.69
ARUNACHAL P	0.00	0.00	0.00	2.31	0.85	-1.46	6.23	2.45	3.78	2.32
ASSAM	0.00	32.90	32.90	202.50	27.43	-175.07	14.70	6.21	8.48	-133.68
MANIPUR	1.04	37.73	36.69	15.10	1.51	-13.59	3.24	2.33	0.91	24.01
MEGHALAYA	2.60	0.00	-2.60	0.00	26.48	26.48	17.21	0.56	16.65	40.53
MIZORAM	0.00	0.00	0.00	14.03	0.00	-14.03	3.54	2.30	1.24	-12.78
NAGALAND	0.00	0.00	0.00	0.02	6.56	6.54	1.19	2.21	-1.02	5.52
TRIPURA	0.00	0.00	0.00	54.98	0.00	-54.98	2.62	11.38	-8.77	-63.74
NTPC STNS-NR	0.00	0.00	0.00	8.08	0.00	-8.08	68.52	65.30	3.21	-4.86
NHPC STNS	0.00	0.00	0.00	0.00	0.00	0.00	17.65	62.23	-44.58	-44.58
NFF	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.18	0.01	0.01
RAIL	0.00	0.00	0.00	0.00	0.00	0.00	3.02	4.96	-1.94	-1.94
NEP	0.00	0.00	0.00	0.00	0.00	0.00	1.10	0.00	1.10	1.10
NAPP	0.00	0.00	0.00	0.00	0.00	0.00	2.11	0.40	1.71	1.71
RAP B	0.00	0.00	0.00	0.00	0.00	0.00	20.24	1.44	18.80	18.80
NJPC	0.00	0.00	0.00	0.00	0.00	0.00	3.21	5.48	-2.26	-2.26
TEHRI	0.00	0.00	0.00	0.00	0.00	0.00	1.86	3.69	-1.83	-1.83
BBMB	0.00	0.00	0.00	0.00	0.00	0.00	3.64	11.50	-7.86	-7.86
RAP C	0.00	0.00	0.00	0.00	0.00	0.00	9.32	8.74	0.59	0.59
AD HYDRO	0.00	0.00	0.00	15.08	0.00	-15.08	0.46	0.60	-0.14	-15.22
IGSTPS	0.00	0.00	0.00	0.00	0.00	0.00	5.20	1.35	3.85	3.85

KOTESHWAR	0.00	0.00	0.00	0.00	0.00	0.00	1.65	2.09	-0.45	-0.45
KARCHAM WANGT	0.00	0.00	0.00	15.53	0.00	-15.53	4.60	3.94	0.66	-14.87
SHREE CEMENT	59.50	0.00	-59.50	6.00	0.00	-6.00	1.81	0.77	1.04	-64.46
LANCO BUDHIL	0.00	0.00	0.00	0.77	0.00	-0.77	0.32	0.69	-0.37	-1.14
RAMPUR HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.60	3.82	-3.22	-3.22
MALANA	0.00	0.00	0.00	0.11	0.00	-0.11	0.02	0.01	0.01	-0.10
SAINJ HEP	0.00	0.00	0.00	13.59	0.00	-13.59	0.23	0.73	-0.50	-14.09
KISHANGANGA HE	0.00	0.00	0.00	0.00	0.00	0.00	0.82	1.60	-0.78	-0.78
RENEW_SLR	0.00	0.00	0.00	0.00	0.00	0.00	0.96	0.38	0.58	0.58
AZURE_SLR	0.00	0.00	0.00	0.00	0.00	0.00	2.72	5.24	-2.52	-2.52
SB_SLR	0.00	0.00	0.00	0.00	0.00	0.00	3.18	3.45	-0.27	-0.27
MAHOBA_SLR	0.00	0.00	0.00	0.00	0.00	0.00	3.71	3.59	0.11	0.11
ACME_SLR	0.00	0.00	0.00	0.00	0.00	0.00	2.09	2.96	-0.87	-0.87
AZURE34_SLR	0.00	0.00	0.00	0.00	0.00	0.00	2.43	3.03	-0.60	-0.60
TATA_SLR	0.00	0.00	0.00	0.00	0.00	0.00	1.90	3.23	-1.33	-1.33
RENEW_SLR_BKN	0.00	0.00	0.00	0.00	0.00	0.00	3.70	3.09	0.61	0.61
CLEAN_SLR	0.00	0.00	0.00	0.00	0.00	0.00	1.16	2.08	-0.92	-0.92
NTPC STNS-WR	0.00	0.00	0.00	35.32	0.00	-35.32	77.29	105.40	-28.11	-63.43
BHADRAVATHI HV	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.18	-0.16	-0.16
VINDHYACHAL HV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	-0.15	-0.15
JINDAL POWER	15.14	0.00	-15.14	44.34	0.00	-44.34	1.37	1.65	-0.28	-59.77
LANCO_AMK	5.30	0.00	-5.30	0.00	0.00	0.00	0.60	2.70	-2.10	-7.40
NSPCL	0.00	0.00	0.00	0.00	0.00	0.00	1.66	1.31	0.35	0.35
ACBIL	0.76	0.00	-0.76	36.03	0.00	-36.03	1.84	3.55	-1.71	-38.49
BALCO	8.77	0.00	-8.77	0.10	0.00	-0.10	8.96	1.48	7.48	-1.39
RGPL (DABHOL)	0.00	0.00	0.00	0.03	0.00	-0.03	18.93	7.28	11.65	11.61
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	28.24	4.73	23.51	23.51
DCPP	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.12	0.08	0.08
EMCO	0.00	0.00	0.00	0.00	0.00	0.00	4.96	2.22	2.74	2.74
ESSAR STEEL	0.00	181.56	181.56	0.00	6.77	6.77	20.91	21.42	-0.51	187.82
KSK MAHANADI	267.43	0.00	-267.43	0.00	0.00	0.00	1.99	1.85	0.14	-267.29
ESSAR POWER	188.55	0.00	-188.55	44.52	0.00	-44.52	4.04	1.25	2.79	-230.28
JINDAL STAGE-II	0.00	0.00	0.00	61.45	0.00	-61.45	6.78	1.90	4.88	-56.57
DB POWER	94.13	0.00	-94.13	52.11	0.00	-52.11	24.38	0.76	23.63	-122.62
DHARIWAL POWER	0.00	0.00	0.00	0.21	0.00	-0.21	0.66	1.40	-0.74	-0.95
JAYPEE NIGRIE	1.35	0.00	-1.35	226.71	0.00	-226.71	1.25	5.59	-4.34	-232.40
DGEN MEGA POWE	0.00	0.00	0.00	0.00	0.00	0.00	1.22	0.00	1.22	1.22
GMR CHATTISGAR	500.75	0.00	-500.75	176.36	0.00	-176.36	13.29	2.61	10.68	-666.43
KORBA WEST POW	0.10	0.00	-0.10	54.09	0.00	-54.09	5.74	0.74	5.01	-49.18
MB POWER	8.57	0.00	-8.57	74.39	0.00	-74.39	12.37	3.68	8.70	-74.26
MARUTI COAL	0.00	0.00	0.00	48.34	0.00	-48.34	0.00	0.00	0.00	-48.34
SPECTRUM	0.00	0.00	0.00	56.24	0.00	-56.24	0.00	0.00	0.00	-56.24
JHABUA POWER_M	0.41	0.00	-0.41	33.58	0.00	-33.58	14.24	1.23	13.01	-20.98
SASAN UMPP	0.00	0.00	0.00	0.00	0.00	0.00	1.50	56.55	-55.05	-55.05
TRN ENERGY	3.42	0.00	-3.42	0.00	0.00	0.00	0.93	1.99	-1.06	-4.48
RKM POWER	0.00	0.00	0.00	0.00	0.00	0.00	0.81	1.17	-0.37	-0.37
SKS POWER	28.82	0.00	-28.82	41.55	0.00	-41.55	0.22	1.15	-0.93	-71.30
BARC	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.39	-0.36	-0.36
KAPP 3&4	0.00	0.00	0.00	0.00	0.00	0.00	5.86	0.00	5.86	5.86
HVDC CHAMPA	0.00	0.00	0.00	0.00	0.00	0.00	2.01	0.08	1.93	1.93
MAHINDRA_RUMS	0.00	0.00	0.00	0.00	0.00	0.00	5.57	3.56	2.01	2.01
ARINSUM_RUMS	0.00	0.00	0.00	0.00	0.00	0.00	3.28	3.79	-0.50	-0.50
OSTRO	0.00	0.00	0.00	0.00	0.00	0.00	7.86	11.29	-3.43	-3.43
ACME_RUMS	0.00	0.00	0.00	0.00	0.00	0.00	3.27	3.21	0.05	0.05

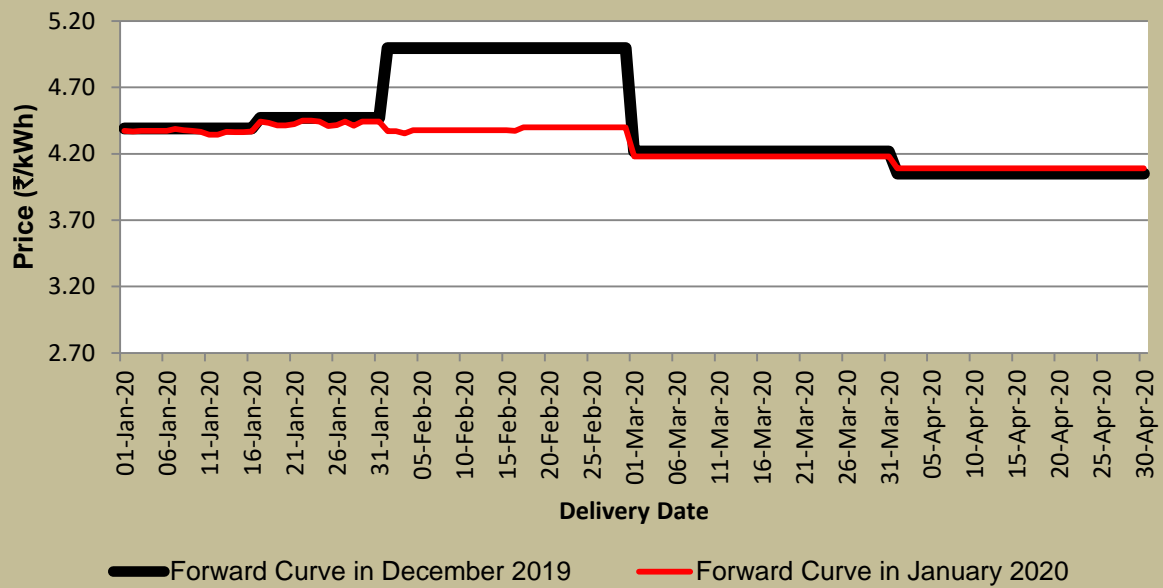
RENEW_BHACHAU	0.00	0.00	0.00	0.00	0.00	0.00	6.11	8.66	-2.55	-2.55
GIWEL_BHUJ	0.00	0.00	0.00	0.00	0.00	0.00	11.88	15.94	-4.06	-4.06
INOX_BHUJ	0.00	0.00	0.00	0.00	0.00	0.00	2.66	2.84	-0.18	-0.18
AGEMPL BHUJ	0.00	0.00	0.00	0.00	0.00	0.00	2.91	2.82	0.08	0.08
NTPC STNS-SR	0.46	0.00	-0.46	36.97	0.00	-36.97	32.54	24.74	7.79	-29.64
LANKO KONDAPAI	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.58	0.58
SIMHAPURI	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.00	0.43	0.43
MEENAKSHI	0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.00	0.61	0.61
COASTGEN	0.00	0.00	0.00	0.00	0.00	0.00	2.35	2.10	0.26	0.26
THERMAL POWER T	319.25	0.00	-319.25	100.53	0.00	-100.53	3.79	1.54	2.24	-417.53
IL&FS	55.59	0.00	-55.59	7.23	0.00	-7.23	6.52	0.49	6.03	-56.80
NLC	0.00	0.00	0.00	111.99	0.00	-111.99	23.45	45.25	-21.80	-133.79
SEMBCORP	0.00	0.00	0.00	329.82	0.00	-329.82	2.56	2.39	0.17	-329.65
NETCL VALLUR	0.00	0.00	0.00	0.00	0.00	0.00	10.73	1.29	9.45	9.45
NTPL	0.00	0.00	0.00	0.00	0.00	0.00	5.25	1.55	3.70	3.70
SBG CLENTECH_SL	0.00	0.00	0.00	14.20	0.00	-14.20	0.00	0.00	0.00	-14.20
NTPC STNS-ER	0.16	0.00	-0.16	10.84	0.00	-10.84	41.94	26.85	15.10	4.10
MAITHON POWER I	0.00	0.00	0.00	0.00	0.00	0.00	3.17	5.85	-2.68	-2.68
NPGC	0.00	0.00	0.00	0.00	0.00	0.00	5.25	2.77	2.48	2.48
ADHUNIK POWER I	130.55	0.00	-130.55	2.46	0.00	-2.46	2.65	2.52	0.13	-132.89
CHUZACHEN HEP	9.73	0.00	-9.73	1.56	0.00	-1.56	0.12	0.45	-0.34	-11.62
RANGIT HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.83	-0.45	-0.45
GMR KAMALANGA	29.82	0.00	-29.82	2.32	0.00	-2.32	6.87	0.48	6.39	-25.75
JITPL	47.16	0.00	-47.16	7.80	0.00	-7.80	5.45	0.46	4.99	-49.97
TEESTA HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.28	4.81	-4.52	-4.52
DAGACHU	25.92	0.00	-25.92	0.00	0.00	0.00	7.57	0.00	7.57	-18.35
JORETHANG	0.00	0.00	0.00	16.83	0.00	-16.83	1.66	0.41	1.25	-15.58
NEPAL(NVVN)	0.00	155.53	155.53	0.00	0.00	0.00	5.64	8.77	-3.13	152.40
BANGLADESH	0.00	14.69	14.69	0.00	0.00	0.00	8.43	5.53	2.90	17.59
HVDC PUS	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.11	-0.09	-0.09
TEESTA STG3	0.41	0.00	-0.41	143.18	0.00	-143.18	3.07	1.69	1.38	-142.21
DIKCHU HEP	0.20	0.00	-0.20	10.07	0.00	-10.07	0.41	0.49	-0.08	-10.35
HVDC ALPD	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.15	-0.13	-0.13
TASHIDENG HEP	0.00	0.00	0.00	14.85	0.00	-14.85	1.15	0.78	0.37	-14.48
BRBCL,NABINAGA	0.00	0.00	0.00	0.00	0.00	0.00	4.59	8.79	-4.20	-4.20
MTPS II	0.00	0.00	0.00	0.00	0.00	0.00	3.55	1.12	2.43	2.43
TALA HEP	0.00	0.00	0.00	0.00	0.00	0.00	76.16	0.00	76.16	76.16
CHUKHA HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.11	36.09	-35.98	-35.98
KURICHU HEP	0.00	0.00	0.00	0.00	0.00	0.00	16.09	0.02	16.07	16.07
MANGDECHU HEP	0.00	0.00	0.00	0.00	0.00	0.00	4.91	3.68	1.23	1.23
NTPC STNS-NER	3.86	0.00	-3.86	8.13	0.00	-8.13	7.76	7.50	0.26	-11.73
NEEPCO STNS	0.00	0.00	0.00	0.00	0.00	0.00	1.63	7.75	-6.13	-6.13
RANGANADI HEP	0.00	0.00	0.00	0.00	0.00	0.00	1.17	1.58	-0.41	-0.41
DOYANG HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.44	-0.16	-0.16
ONGC PALATANA	31.61	0.00	-31.61	1.04	0.00	-1.04	0.82	0.82	-0.01	-32.67
LOKTAK	0.00	0.00	0.00	0.00	0.00	0.00	0.15	1.51	-1.35	-1.35
PARE HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.45	-0.31	-0.31
Source: NLDC										
* in case of a state, the entities which are "selling" also include generators connected to state grid and the entities which are "buying" also include open access consumers.										
** (-) indicates sale and (+) indicates purchase,										
*** Total net includes net of transactions through bilateral, power exchange and DSM										



**Figure 7: Bilateral Contracts executed by Traders in December, 2019**



**Figure-8: Forward Curve based on Prices of Bilateral Contracts**



<b>Table-20 : VOLUME AND PRICE OF RENEWABLE ENERGY CERTIFICATES (RECs) TRANSACTED THROUGH POWER EXCHANGES, DECEMBER 2019</b>						
<b>Sr. No.</b>	<b>Details of REC Transactions</b>	<b>IEX</b>			<b>PXIL</b>	
		<b>Solar</b>	<b>Non-Solar</b>	<b>Non-Solar</b> (issued before 1st April 2017)	<b>Solar</b>	<b>Non Solar</b>
A	Volume of Buy Bid	672090	666124	5000	283340	291370
B	Volume of Sell Bid	41204	370458	480	21513	128385
C	Ratio of Buy Bid to Sell Bid Volume	16.31	1.80	10.42	13.17	2.27
D	Market Clearing Volume (MWh)	41204	318785	480	20667	123472
E	Weighted average Market Clearing Price (₹/MWh)	2400	2000	3000	2400	1900

Source: IEX and PXIL

Note 1: 1 REC = 1 MWh

Note 2:

<i>Forbearance and Floor Price w.e.f 1<sup>st</sup> April 2017</i>		
Type of REC	Floor Price (₹/MWh)	Forbearance Price (₹/MWh)
<i>Solar</i>	<i>1000.00</i>	<i>2400.00</i>
<i>Non-Solar</i>	<i>1000.00</i>	<i>3000.00</i>