

Monthly Report on Short-term Transactions of Electricity in India

October, 2018



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Abbreviations

Abbreviation	Expanded Version
ACBIL	ACB (India) Limited
ACP	Area Clearing Price
ACV	Area Clearing Volume
Adani HVDC	Adani Power Limited (High Voltage Direct Line Current Line)
AD HYDRO	AD Hydro Power Limited
BALCO	Bharat Aluminum Company Limited
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CGPL	Coastal Gujarat Power Limited
CHUZACHEN HEP	Chuzachen Hydro Electric Power Project
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
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
GMR CHHATTISGARH	GMR Chhattisgarh Energy Limited
GMR KAMALANGA	GMR Kamalanga Energy Ltd.
IEX	Indian Energy Exchange Limited
ILF&S	Infrastructure Leasing & Financial Services Limited
J&K	Jammu & Kashmir
JAYPEE NIGRIE	Jaypee Nigrie Super 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
KARCHAM WANGTOO	Jaypee Karcham Hydro Corporation Limited
KORBA WEST POWER	Korba West Power Company Limited
KSK MAHANADI	KSK Mahanadi Power Ltd
LANCO BUDHIL	Lanco Budhil Hydro Power Private Limited
LANKOAMK	Lanco Amarkantak Power Private Limited
LANKOKONDAPALLY	Lanco Kondapally Power Private Limited
LOKTAK	Loktak Power Project
MALANA	Malana Hydroelectric Plant
Maruti Coal	Maruti Clean Coal and Power Limited
MB POWER	MB Power Ltd
MEENAKSHI	Meenakshi Energy Private Limited
MP	Madhya Pradesh
MUs	Million Units

NEEPCO	North Eastern Electric Power Corporation Limited
NHPC STATIONS	National Hydro Electric Power Corporation Ltd. Stations
NLC	Neyveli Lignite Corporation Limited
NTPC STATIONS	National Thermal Power Corporation Ltd. Stations
NJPC	Nathpa Jhakri Hydroelectric Power Station
NLDC	National Load Despatch Centre
NSPCL	NTPC - SAIL Power Company Private Limited
NVVN	NTPC Vidyut Vyapar Nigam Limited
NTECL Vallur	NTPC Tamilnadu Energy Company Limited Vallur
ONGC Platana	ONGC Tripura Power Company
OTC	Over The Counter
PX	Power Exchange
PXIL	Power Exchange India Limited
RANGIT HEP	Rangit Hydro electric power project
REC	Renewable Energy Certificate
RGPPL	Ratnagiri Gas and Power Private Limited
RLDC	Regional Load Despatch Centre
RTC	Round The Clock
Sasan UMPP	Sasan Ultra Mega Power Project
SEMBCORP	Sembcorp Gayatri Power Ltd
SHREE CEMENT	Shree Cement Limited
SIMHAPURI	Simhapuri Energy Private Limited
SKS Power	SKS Power Generation Chhatisgarh Limited
SPECTRUM	Spectrum Power Generation Ltd
TEESTA STG3	Teesta Stage 3 Hydro Power Project

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 & intra-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 **October, 2018** are as under:

I: Volume of Short-term Transactions of Electricity

During October 2018, total electricity generation excluding generation from renewable and captive power plants in India was 113366.45 MUs (Table-1).

Of the total electricity generation, 13134.77 MUs (11.59%) was transacted through short-term, comprising of 6509.02 MUs (5.74%) through day ahead collective transactions on power exchanges, followed by 4746.45 MUs (4.19%) through bilateral (through traders and term-ahead contracts on power exchanges and directly between distribution companies) and 1879.30 MUs (1.66%) through DSM (Table-1 & Figure-2).

Of the total short-term transactions, day ahead collective transactions on power exchanges constitute 49.56%, followed by 36.14% through bilateral (22.03% through traders and term-ahead contracts on power exchanges and 14.11% directly between distribution companies) and 14.31% 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 38 trading licensees as on October, 2018. In October, 2018, 22 trading licensees were engaged in short term trading. Top 5 trading licensees had a share of 75.60% in the total volume traded by all the licensees. These are PTC India Ltd., Mittal Processors (P) Ltd., Adani Enterprises Ltd., Tata Power Trading Company (P) Ltd. and JSW Power Trading Company 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 0.1936 for the month of October, 2018, which indicates moderate concentration of market power (Table-2).

The volume of electricity transacted through IEX and PXIL in the day ahead market was 6504.22 MUs and 4.80 MUs respectively. The volume of total buy bids and sell bids was 8543.29 MUs and 8141.12 MUs respectively in IEX while the same was 7.36 MUs and 40.49 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 619.66 MUs and 169.78 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, ₹7.35/kWh and ₹4.75/kWh respectively (Table-3). The weighted average sale prices were also computed for the transactions during

Round the Clock (RTC), Peak and Off-peak periods separately, and the sale prices were ₹4.82/kWh, ₹6.50/kWh and ₹4.49/kWh respectively (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 ₹2.68/kWh, ₹20.00/kWh and ₹6.13/kWh respectively in IEX and ₹6.50/kWh, ₹6.50/kWh and ₹6.50/kWh respectively in PXIL (Table-5).

The price of electricity transacted through IEX and PXIL in the term-ahead market was ₹6.54/kWh and ₹5.72/kWh respectively (Table-6 and Table-7).

(iii) Price of electricity transacted through DSM: The average deviation settlement price was ₹2.19/kWh. The minimum and maximum deviation settlement prices were ₹0.00/kWh and ₹6.36/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: Volume of Short-term Transactions of Electricity (Regional Entity¹-Wise)

Of the total bilateral transactions, top 5 regional entities sold 44.79% of the volume, and these were Sembcorp Gayatri Power Ltd., Andhra Pradesh, Punjab, Damodar Valley Corporation and Essar Power Limited. Top 5 regional entities purchased 57.41% of the volume, and these were Andhra Pradesh, Gujarat, Haryana, Bangladesh and Maharashtra (Table-9& 10).

Of the total power exchange transactions, top 5 regional entities sold 42.43% of the volume, and these were Rajasthan, Punjab, Karnataka, Delhi and Teesta Stage 3 Hydro Power Project. Top 5 regional entities purchased 74.25% of the volume, and these were Maharashtra, Gujarat, Telangana, Odisha and Bihar (Table-11 & 12).

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

Of the total DSM transactions, top 5 regional entities underdrew 31.36% of the volume, and these were NTPC Stations (Western region), Sasan Ultra Mega Power Project, Maharashtra, National Hydro Electric Power Corporation Ltd. Stations and Madhya Pradesh (Table-13). Top 5 regional entities overdrew 26.28% of the volume, and these were Gujarat, Bihar, NTPC Stations (Northern region), NTPC Stations (Western region) and Karnataka (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 Punjab, Sembcorp Gayatri Power Ltd., Karnataka, Rajasthan and Delhi. Top 5 electricity purchasing regional entities were Maharashtra, Gujarat, Telangana, Bihar and Andhra Pradesh.

IV: Congestion² 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 the flow (due to congestion) in the inter-State transmission system. In such a situation, power exchanges adopt a mechanism called “Market Splitting”³.

In the month of October 2018, congestion occurred only in IEX. The details of congestion are shown in Table-16. The volume of electricity that could not be cleared due to congestion and could not be transacted through power exchanges is the difference between

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

³ “Market Splitting” is a mechanism adopted by Power 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.

unconstrained cleared volume (volume of electricity that would have been scheduled, had there been no congestion) and actual cleared volume.

During the month, the volume of electricity that could not be cleared in IEX due to congestion was 2.54% of the unconstrained cleared volume. In terms of time, congestion occurred was 21.47% in IEX (Table-16). No congestion occurred in PXIL.

V: Bilateral Contracts executed by Traders

The above sections covered an analysis on short-term transactions of electricity in October, 2018. This section covers an analysis of bilateral contracts executed in November, 2018.

(i) Duration of bilateral contracts: During November 2018, a total of 62 bilateral contracts (excluding banking/swap contracts) have been executed by traders for the volume of 403.67 MUs. Figure-7 shows the percentage of contracts categorized according to the period of power supply. It can be observed from the figure that 79.03% of the bilateral contracts were executed for duration of up to one week, 20.97% 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.

During the month, 41 banking/swapping bilateral contracts were also executed for the volume of 1620.31 MUs.

(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 1st November, 2018 to 24th February, 2019 based on the bilateral contracts⁴ executed till

⁴Excluding Banking/Swapping contracts

November, 2018. Forward curves have been drawn for the contracts executed in October, 2018 and November, 2018 for the purpose of comparison. It is observed that forward contract prices are significantly higher for the contracts executed in November, 2018 compared to the contracts executed in October, 2018 during the period from 5th - 7th November 2018 and 1st December 2018 – 31st January 2019.

VI: 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 April, 2011.

The details of REC transactions for the month of October, 2018 are shown in Table-20. The market clearing volume of solar RECs transacted on IEX and PXIL were 130279 and 145672 respectively and the market clearing price of these RECs was ₹1001/MWh in IEX and ₹1000/MWh in PXIL. Market clearing volume of non-solar RECs transacted on IEX and PXIL were 295010 and 132295 respectively and the weighted average market clearing price of these RECs was ₹1251/MWh in IEX and ₹1201/MWh in PXIL.

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 1.72 and 1.88 in IEX and PXIL respectively. For non-solar RECs, the ratio of buy bids to sell bids was 1.67 and 0.84 in IEX and PXIL respectively.

VII: Inferences:

- The percentage of short-term transactions of electricity to total electricity generation was 11.59%.
- Of the total short-term transactions, day ahead collective transactions on power exchanges constitute 49.56%, followed by 36.14% through bilateral (22.03% through traders and term-ahead contracts on power exchanges and 14.11% directly between distribution companies) and 14.31% through DSM.
- Top 5 trading licensees had a share of 75.60% 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 0.1936, indicating moderate concentration of market power.
- The weighted average price of electricity transacted through trading licensees was ₹4.75/kWh. The weighted average price of electricity transacted through IEX and PXIL was ₹6.13/kWh and ₹6.50/kWh respectively.
- The average price of electricity transacted through DSM was ₹2.19/kWh.
- Top 5 electricity selling regional entities were Punjab, Sembcorp Gayatri Power Ltd., Karnataka, Rajasthan and Delhi. Top 5 electricity purchasing regional entities were Maharashtra, Gujarat, Telangana, Bihar and Andhra Pradesh.
- During the month, the volume of electricity that could not be cleared in IEX due to congestion was 2.54% of the unconstrained cleared volume. In terms of time, congestion occurred was 21.47% in IEX. No congestion occurred in PXIL.
- In November 2018, 79.03% of the bilateral contracts were executed for duration of up to one week, 20.97% 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.

- The forward curve of electricity sale prices for the period from 1st November, 2018 to 24th February, 2019 based on the bilateral contracts⁵ executed till November, 2018 shows that forward contract prices are significantly higher for the contracts executed in November, 2018 compared to the contracts executed in October, 2018 during the period from 5th - 7th November 2018 and 1st December 2018 – 31st January 2019.
- The market clearing volume of solar RECs transacted on IEX and PXIL were 130279 and 145672 respectively and the market clearing price of these RECs was ₹1001/MWh in IEX and ₹1000/MWh in PXIL. Market clearing volume of non-solar RECs transacted on IEX and PXIL were 295010 and 132295 respectively and the weighted average market clearing price of these RECs was ₹1251/MWh in IEX and ₹1201/MWh in PXIL.

⁵*Excluding Banking/Swapping contracts*

Table-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (ALL INDIA), OCTOBER 2018				
Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	4746.45	36.14	4.19
	(i) Through Traders and PXs	2893.71	22.03	2.55
	(ii) Direct	1852.74	14.11	1.63
2	Through Power Exchanges	6509.02	49.56	5.74
	(i) IEX	6504.22	49.52	5.74
	(ii) PXIL	4.80	0.04	0.004
3	Through DSM	1879.30	14.31	1.66
	Total	13134.77	-	11.59
	Total Generation	113366.45	-	-

Source: NLDC

Figure-1: Volume of Short-term Transactions of Electricity, October 2018

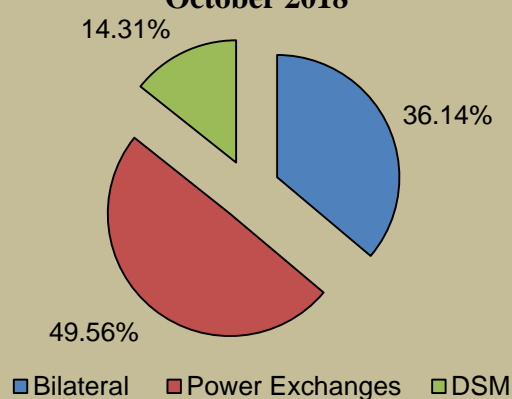
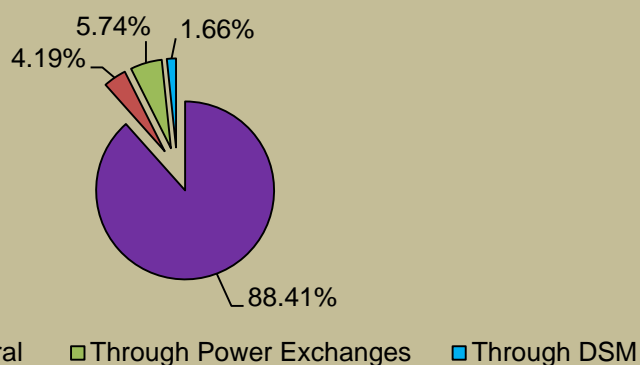


Figure-2: Volume of Various Kinds of Electricity Transactions in Total Electricity Generation, October 2018



**Figure-3: Volume of Short-term Transactions of Electricity,
October 2018 (Day-wise)**

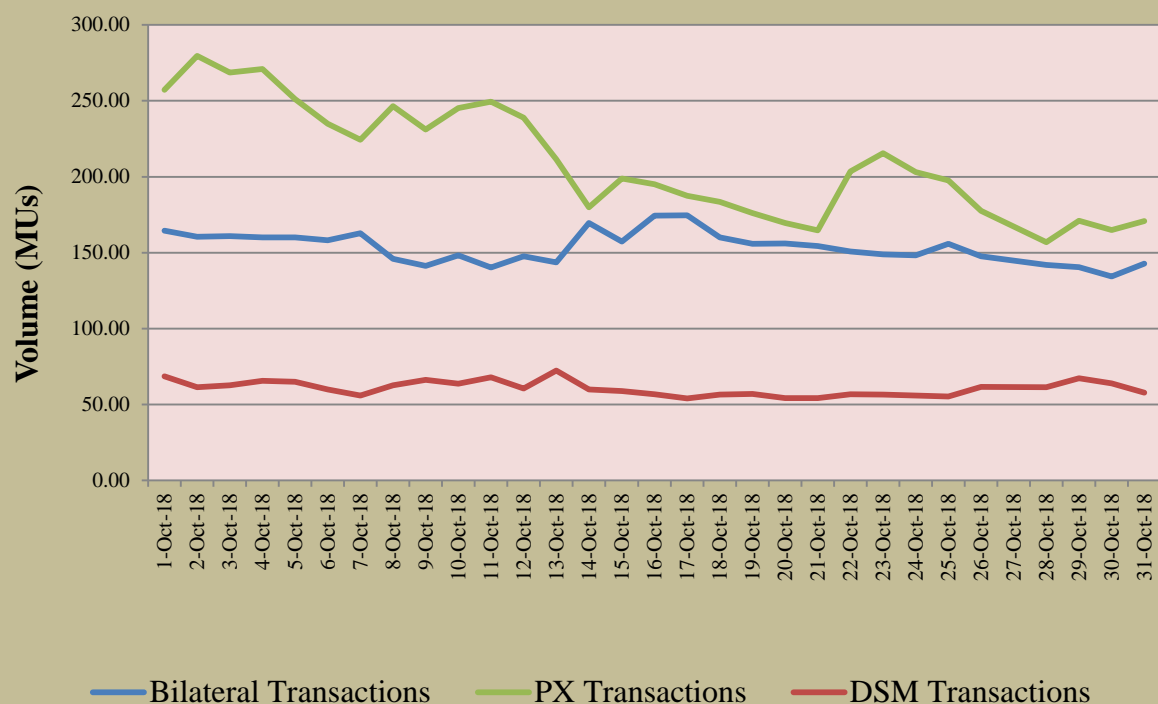


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, OCTOBER 2018			
Sr.No	Name of the Trading Licensee	% Share in total Volume transacted by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd.	37.40	0.1398
2	Mittal Processors (P) Ltd.	17.45	0.0304
3	Adani Enterprises Ltd.	7.52	0.0057
4	Tata Power Trading Company (P) Ltd.	7.27	0.0053
5	JSW Power Trading Company Ltd	5.97	0.0036
6	Arunachal Pradesh Power Corporation (P) ltd	5.37	0.0029
7	Jaiprakash Associates Ltd.	4.66	0.0022
8	Manikaran Power Ltd.	3.86	0.0015
9	GMR Energy Trading Ltd.	3.54	0.0013
10	NTPC Vidyut Vyapar Nigam Ltd.	2.33	0.0005
11	Essar Electric Power Development Corp. Ltd.	1.63	0.0003
12	Knowledge Infrastructure Systems (P) Ltd	1.01	0.0001
13	Statkraft Markets Pvt. Ltd.	0.71	0.0001
14	RPG Power Trading Company Ltd.	0.59	0.0000
15	Shree Cement Ltd.	0.19	0.0000
16	My Home Power Private Ltd.	0.17	0.0000
17	Instinct Infra & Power Ltd.	0.14	0.0000
18	Gita Power & Infrastructure Private Limited	0.12	0.0000
19	Customized Energy Solutions India (P) Ltd.	0.04	0.0000
20	Phillip Commodities India (P) Ltd.	0.01	0.0000
21	National Energy Trading & Services Ltd.	0.01	0.0000
22	IPCL Power Trading Pvt. Ltd.	0.00	0.0000
TOTAL		100.00%	0.1936
Top 5 trading licensees		75.60%	
<i>Note 1: Volume of electricity transacted by the trading licensees includes bilateral transactions (inter-state & intra-state) and the transactions undertaken through power exchanges.</i>			
<i>Note 2: Volume of electricity transacted by Global Energy is not included.</i>			
<i>Source: Information submitted by trading licensees</i>			

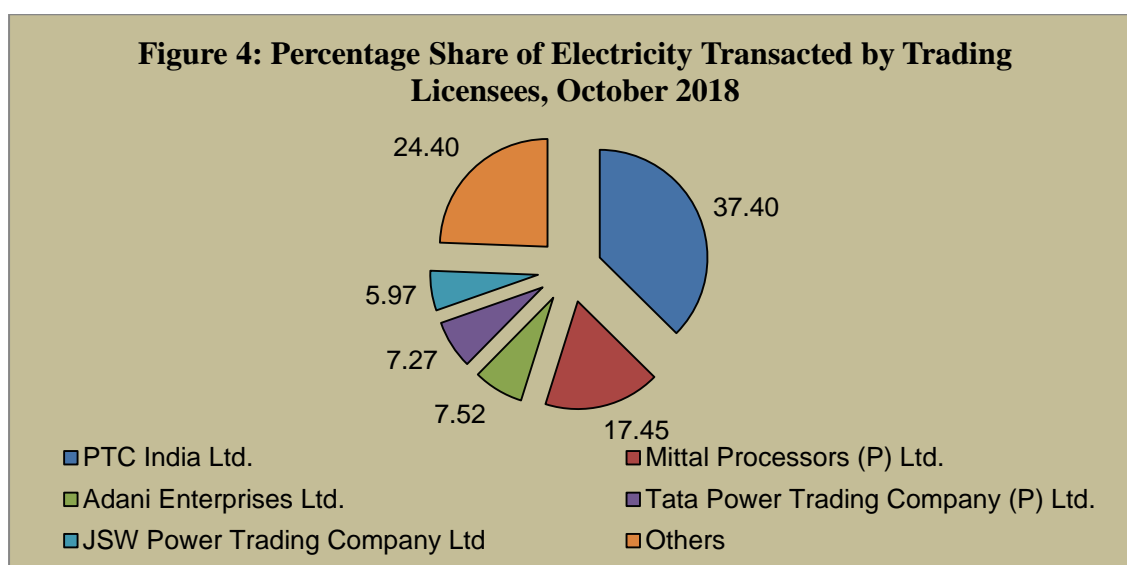


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, OCTOBER 2018		
Sr.No	Item	Sale Price of Traders (₹/kWh)
1	Minimum	3.01
2	Maximum	7.35
3	Weighted Average	4.75

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), OCTOBER 2018		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	4.82
2	PEAK	6.50
3	OFF PEAK	4.49

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, OCTOBER 2018			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	2.68	6.50
2	Maximum	20.00	6.50
3	Weighted Average	6.13	6.50

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, OCTOBER 2018			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	34.61	6.11
2	Day Ahead Contingency Contracts	349.01	6.51
3	Daily Contracts	164.04	6.71
4	Weekly Contracts	72.00	6.48
	Total	619.66	6.54

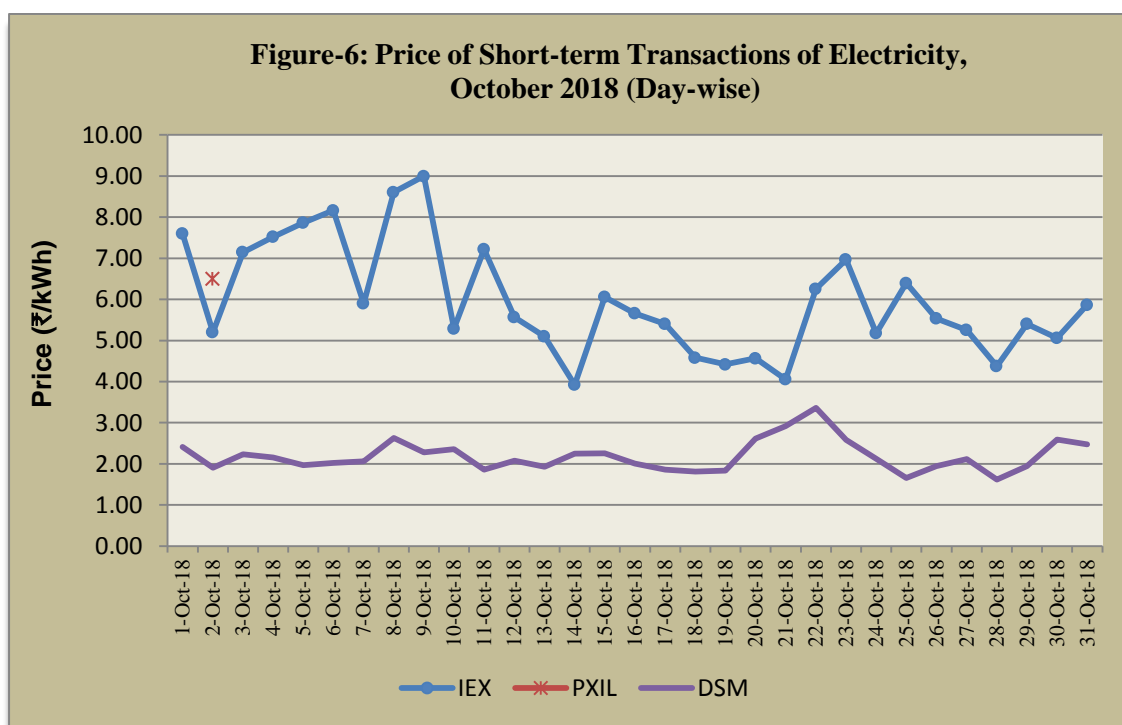
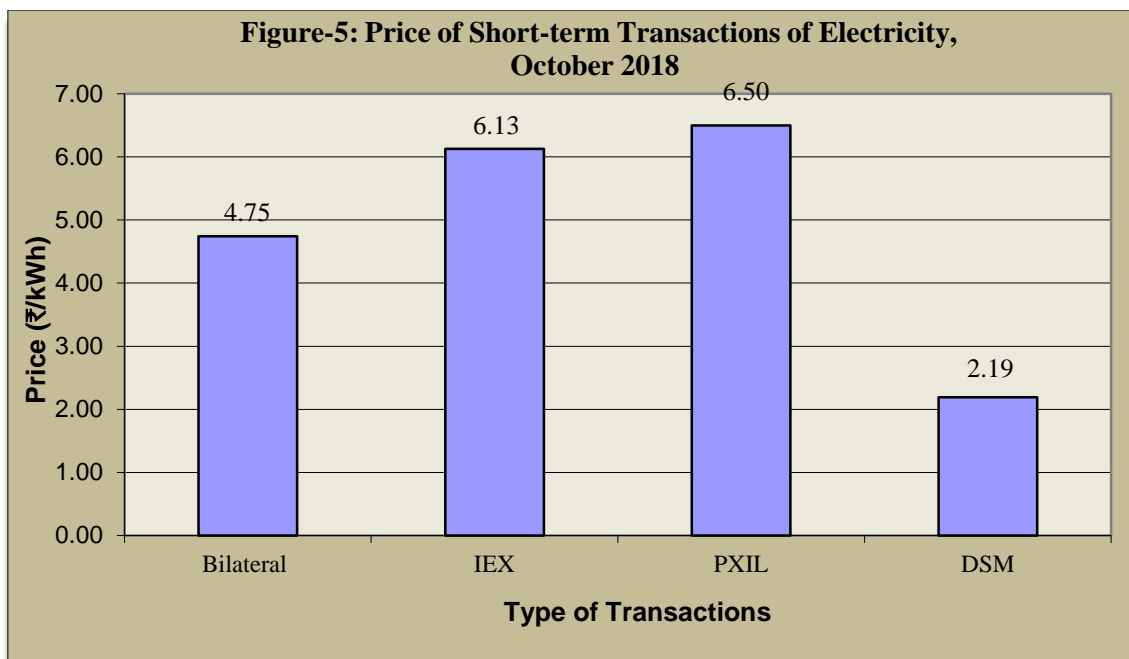
Source: IEX

Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, OCTOBER 2018			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	113.50	5.91
2	Any Day(s) Contracts	42.00	5.15
3	Weekly Contracts	14.28	5.88
	Total	169.78	5.72

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH DSM, OCTOBER 2018		
Sr.No	Item	Price in All India Grid (₹/kWh)
1	Minimum	0.00
2	Maximum	6.36
3	Average	2.19

Source: NLDC



Note: During the month, no transactions were recorded in PXIL except on 2nd October 2018.

Table-9: VOLUME OF ELECTRICITY SOLD THROUGH BILATERAL, OCTOBER 2018		
Name of the Entity	Volume of Sale (MUs)	% of Volume
SEMBCORP	836.24	17.63
ANDHRA PRADESH	375.59	7.92
PUNJAB	343.98	7.25
DVC	307.92	6.49
ESSAR POWER	261.42	5.51
GMR CHATTISGARH	245.61	5.18
HARYANA	238.00	5.02
KARNATAKA	200.02	4.22
WEST BENGAL	180.92	3.81
DELHI	164.81	3.47
SHREE CEMENT	135.91	2.86
ILF&S	120.81	2.55
JAYPEE NIGRIE	116.02	2.45
ADHUNIK POWER LTD	113.07	2.38
DB POWER	111.47	2.35
HIMACHAL PRADESH	84.65	1.78
J & K	76.69	1.62
JITPL	65.61	1.38
ODISHA	63.86	1.35
KERALA	58.40	1.23
DAGACHU	57.87	1.22
GUJARAT	49.15	1.04
ONGC PALATANA	48.27	1.02
JORETHANG	44.53	0.94
TELANGANA	43.53	0.92
TASHIDENG HEP	41.35	0.87
ACBIL	33.59	0.71
SPECTRUM	32.83	0.69
CHUZACHEN HEP	29.50	0.62
UTTAR PRADESH	28.73	0.61
MANIPUR	27.06	0.57
RAJASTHAN	24.65	0.52
JINDAL STAGE-II	23.85	0.50
SIKKIM	18.60	0.39
MP	16.53	0.35
MB POWER	15.95	0.34
UTTARAKHAND	15.17	0.32
MIZORAM	14.84	0.31
BRBCL,NABINAGAR	12.60	0.27
GMR KAMALANGA	10.14	0.21
TRN ENERGY	9.11	0.19
LANKO_AMK	8.80	0.19
DIKCHU HEP	8.40	0.18
JHABUA POWER_MP	5.73	0.12
JINDAL POWER	5.49	0.12
MAHARASHTRA	4.39	0.09
MEGHALAYA	3.80	0.08
NAGALAND	3.48	0.07
BIHAR	2.28	0.05
TAMIL NADU	1.53	0.03
JHARKHAND	1.04	0.02
DADRA & NAGAR HAVELI	0.43	0.01
TOTAL	4744.20	100.00
Volume Sold by top 5 Regional Entities	2125.15	44.79

Table-10: VOLUME OF ELECTRICITY PURCHASED THROUGH BILATERAL, OCTOBER 2018		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
ANDHRA PRADESH	885.01	18.65
GUJARAT	715.65	15.08
HARYANA	442.54	9.32
BANGLADESH	372.59	7.85
MAHARASHTRA	309.35	6.52
WEST BENGAL	269.44	5.68
UTTAR PRADESH	191.59	4.04
MP	175.25	3.69
BIHAR	167.88	3.54
CHHATTISGARH	167.29	3.52
ESSAR STEEL	165.10	3.48
TAMIL NADU	133.75	2.82
TELANGANA	130.44	2.75
JHARKHAND	112.22	2.36
J & K	92.99	1.96
UTTARAKHAND	71.59	1.51
HIMACHAL PRADESH	69.39	1.46
ASSAM	53.65	1.13
NEPAL(NVVN)	50.34	1.06
PUNJAB	42.58	0.90
DELHI	37.38	0.79
GOA	31.99	0.67
ODISHA	27.83	0.59
DADRA & NAGAR HAVELI	13.79	0.29
MEGHALAYA	9.49	0.20
DVC	4.21	0.09
BALCO	1.49	0.03
KARNATAKA	0.70	0.01
TRIPURA	0.48	0.01
MANIPUR	0.45	0.01
TOTAL	4746.45	100.00
Volume Purchased by top 5 Regional Entities	2725.15	57.41

Table-11: VOLUME OF ELECTRICITY SOLD THROUGH POWER EXCHANGES, OCTOBER 2018		
Name of the Entity	Volume of Sale (MUs)	% of Volume
RAJASTHAN	716.86	11.01
PUNJAB	643.96	9.89
KARNATAKA	581.34	8.93
DELHI	430.63	6.62
TEESTA STG3	388.87	5.97
JAYPEE NIGRIE	351.85	5.41
HIMACHAL PRADESH	246.11	3.78
GUJARAT	223.06	3.43
WEST BENGAL	222.58	3.42
HARYANA	216.01	3.32
JINDAL POWER	206.64	3.17
DB POWER	159.50	2.45
ESSAR POWER	131.45	2.02
ILF&S	122.75	1.89
ODISHA	120.38	1.85
MP	103.69	1.59
KERALA	94.02	1.44
TRN ENERGY	85.43	1.31
JITPL	84.61	1.30
JINDAL STAGE-II	84.53	1.30
GMR CHATTISGARH	80.43	1.24
SHREE CEMENT	79.63	1.22
ANDHRA PRADESH	69.94	1.07
TRIPURA	65.08	1.00
MB POWER	63.06	0.97
SEMBICORP	57.44	0.88
MEGHALAYA	52.01	0.80
MARUTI COAL	48.74	0.75
ASSAM	47.89	0.74
MAHARASHTRA	47.03	0.72
AD HYDRO	46.20	0.71
SIKKIM	41.88	0.64
DIKCHU HEP	36.80	0.57
SAINJ HEP	35.85	0.55
JHARKHAND	35.58	0.55
UTTAR PRADESH	35.46	0.54
THERMAL POWERTECH	34.92	0.54
GMR KAMALANGA	34.74	0.53
TAMIL NADU	34.71	0.53
UTTARAKHAND	33.72	0.52
SPECTRUM	31.08	0.48
TELANGANA	30.89	0.47
KARCHAM WANGTOO	28.22	0.43
CHANDIGARH	23.40	0.36
ACBIL	22.02	0.34
NTPC STATIONS-NER	19.16	0.29
CHHATTISGARH	18.07	0.28

NLC	17.26	0.27
MIZORAM	16.11	0.25
GOA	11.79	0.18
NTPC STATIONS-NR	11.77	0.18
DADRA & NAGAR HAVELI	10.61	0.16
JHABUA POWER_MP	7.92	0.12
MANIPUR	7.92	0.12
ONGC PALATANA	7.87	0.12
BRBCL,NABINAGAR	7.86	0.12
BIHAR	6.31	0.10
TASHIDENG HEP	6.16	0.09
JORETHANG	6.00	0.09
CHUZACHEN HEP	3.23	0.05
ADHUNIK POWER LTD	3.16	0.05
NTPC STATIONS-WR	2.73	0.04
LANCO BUDHIL	2.69	0.04
DVC	2.43	0.04
MALANA	2.42	0.04
ARUNACHAL PRADESH	2.20	0.03
DHARIWAL POWER	1.53	0.02
NAGALAND	1.00	0.02
J & K	0.81	0.01
EMCO	0.73	0.01
BALCO	0.20	0.00
NTPC STATIONS-ER	0.13	0.00
TOTAL	6509.02	100.00
Volume sold by top 5 Regional Entities	2761.66	42.43

Table-12: VOLUME OF ELECTRICITY PURCHASED THROUGH POWER EXCHANGES, OCTOBER 2018		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
MAHARASHTRA	1725.78	26.51
GUJARAT	1088.03	16.72
TELANGANA	906.93	13.93
ODISHA	581.57	8.93
BIHAR	530.48	8.15
WEST BENGAL	336.84	5.17
TAMIL NADU	306.49	4.71
J & K	276.17	4.24
ANDHRA PRADESH	202.24	3.11
CHHATTISGARH	106.42	1.63
DVC	81.20	1.25
ASSAM	75.28	1.16
ESSAR STEEL	61.80	0.95
UTTAR PRADESH	54.95	0.84
UTTARAKHAND	39.05	0.60
BALCO	31.36	0.48
MP	23.91	0.37
KARNATAKA	16.88	0.26
DADRA & NAGAR HAVELI	13.32	0.20
GOA	12.72	0.20
DAMAN AND DIU	8.91	0.14
MEGHALAYA	7.68	0.12
KERALA	7.26	0.11
RAJASTHAN	5.57	0.09
HIMACHAL PRADESH	3.22	0.05
DELHI	2.38	0.04
MANIPUR	1.56	0.02
HARYANA	0.71	0.01
TRIPURA	0.29	0.00
CHANDIGARH	0.03	0.00
TOTAL	6509.02	100.00
Volume purchased by top 5 Regional Entities	4832.78	74.25

Table-13: VOLUME OF ELECTRICITY UNDER DRAWAL (EXPORTED) THROUGH DSM, OCTOBER 2018		
Name of the Entity	Volume of Underdrawal (MUs)	% of Volume
NTPC STATIONS-WR	139.10	10.07
SASAN UMPP	81.67	5.91
MAHARASHTRA	77.19	5.59
NHPC STATIONS	76.31	5.52
MP	58.96	4.27
UTTAR PRADESH	56.00	4.05
NEPAL(NVVN)	53.48	3.87
J & K	50.90	3.68
WEST BENGAL	50.86	3.68
KERALA	43.41	3.14
NTPC STATIONS-ER	42.31	3.06
RAJASTHAN	40.09	2.90
ANDHRA PRADESH	38.08	2.76
PONDICHERRY	37.11	2.69
UTTARAKHAND	35.48	2.57
HARYANA	30.99	2.24
PUNJAB	27.27	1.97
DELHI	26.40	1.91
CHHATTISGARH	24.87	1.80
NTPC STATIONS-NR	24.27	1.76
NLC	23.70	1.72
KARNATAKA	21.94	1.59
ESSAR STEEL	20.22	1.46
NTPC STATIONS-SR	20.14	1.46
SIKKIM	18.97	1.37
GOA	12.44	0.90
NJPC	12.37	0.90
BANGLADESH	12.35	0.89
ASSAM	12.14	0.88
JINDAL STAGE-II	11.22	0.81
TEESTA HEP	10.82	0.78
JAYPEE NIGRIE	9.41	0.68
ARUNACHAL PRADESH	9.16	0.66
GUJARAT	9.03	0.65
NEEPCO STATIONS	8.82	0.64
JHARKHAND	8.02	0.58
ODISHA	7.86	0.57
TAMIL NADU	7.47	0.54
TRIPURA	7.40	0.54
KARCHAM WANGTOO	6.30	0.46
MANIPUR	6.26	0.45
MEGHALAYA	5.55	0.40
GMR KAMALANGA	5.25	0.38
EMCO	4.66	0.34
LANKO_AMK	4.49	0.33
MAITHON POWER LTD	4.24	0.31

RANGANADI HEP	4.16	0.30
MB POWER	4.16	0.30
HIMACHAL PRADESH	4.13	0.30
JINDAL POWER	4.06	0.29
BRBCL,NABINAGAR	3.93	0.28
URI-2	3.74	0.27
CHANDIGARH	3.68	0.27
BIHAR	3.41	0.25
MIZORAM	3.39	0.25
ESSAR POWER	3.17	0.23
KSK MAHANADI	3.03	0.22
CGPL	2.80	0.20
TRN ENERGY	2.74	0.20
NAGALAND	2.74	0.20
DVC	2.72	0.20
JHABUA POWER_MP	2.35	0.17
NETCL VALLUR	2.25	0.16
NSPCL	1.99	0.14
JITPL	1.94	0.14
BALCO	1.94	0.14
DADRA & NAGAR HAVELI	1.77	0.13
GMR CHATTISGARH	1.75	0.13
RKM POWER	1.71	0.12
CHUZACHEN HEP	1.59	0.11
AD HYDRO	1.44	0.10
RANGIT HEP	1.33	0.10
DCPP	1.32	0.10
SEMBCORP	1.23	0.09
COASTGEN	1.19	0.09
ILF&S	1.18	0.09
DB POWER	1.11	0.08
ACBIL	1.09	0.08
THERMAL POWERTECH	1.00	0.07
LANCO BUDHIL	0.97	0.07
ADHUNIK POWER LTD	0.95	0.07
TELANGANA	0.90	0.07
RGPPL (DABHOL)	0.62	0.05
DAGACHU	0.59	0.04
LOKTAK	0.50	0.04
JORETHANG	0.50	0.04
DOYANG HEP	0.39	0.03
DAMAN AND DIU	0.38	0.03
MALANA	0.21	0.01
SHREE CEMENT	0.17	0.01
DHARIWAL POWER	0.15	0.01
SKS POWER	0.01	0.00
TOTAL	1381.33	100.00
Volume Exported by top 5 Regional Entities	433.22	31.36

Table-14: VOLUME OF ELECTRICITY OVER DRAWAL (IMPORTED) THROUGH DSM, OCTOBER 2018		
Name of the Entity	Volume of Overdrawal (MUs)	% of Volume
GUJARAT	151.68	6.40
BIHAR	123.26	5.20
NTPC STATIONS-NR	118.55	5.00
NTPC STATIONS-WR	116.76	4.92
KARNATAKA	112.89	4.76
RAJASTHAN	109.65	4.62
JHARKHAND	106.84	4.51
UTTAR PRADESH	86.92	3.67
ANDHRA PRADESH	85.87	3.62
PONDICHERRY	85.65	3.61
MAHARASHTRA	83.81	3.53
SIKKIM	83.77	3.53
SASAN UMPP	81.67	3.44
KERALA	63.61	2.68
HARYANA	56.78	2.39
NTPC STATIONS-ER	55.80	2.35
NTPC STATIONS-SR	51.72	2.18
MP	48.78	2.06
HIMACHAL PRADESH	47.02	1.98
PUNJAB	45.96	1.94
ODISHA	37.26	1.57
CGPL	34.24	1.44
NEPAL(NVVN)	29.67	1.25
WEST BENGAL	29.44	1.24
CHHATTISGARH	29.05	1.22
DADRA & NAGAR HAVELI	26.71	1.13
ESSAR STEEL	25.31	1.07
DAMAN AND DIU	25.13	1.06
TAMIL NADU	24.42	1.03
J & K	24.41	1.03
NETCL VALLUR	23.32	0.98
ASSAM	22.40	0.94
DB POWER	16.89	0.71
UTTARAKHAND	16.49	0.70
ESSAR POWER	16.23	0.68
NLC	16.11	0.68
DELHI	15.31	0.65
GOA	14.58	0.61
ILF&S	11.99	0.51
EMCO	11.76	0.50
GMR CHATTISGARH	10.53	0.44
TRIPURA	10.32	0.44
JINDAL STAGE-II	9.81	0.41
RGPL (DABHOL)	9.38	0.40
NHPC STATIONS	9.25	0.39
JORETHANG	9.23	0.39
CHANDIGARH	9.06	0.38
BALCO	7.71	0.33
DAGACHU	7.50	0.32

SEMBICORP	6.65	0.28
TELANGANA	6.60	0.28
NAGALAND	6.51	0.27
NJPC	6.11	0.26
THERMAL POWERTECH	5.74	0.24
MEGHALAYA	5.46	0.23
JHABUA POWER_MP	5.20	0.22
DVC	5.10	0.22
MB POWER	4.68	0.20
GMR KAMALANGA	4.35	0.18
JINDAL POWER	4.02	0.17
KARCHAM WANGTOO	3.90	0.16
ARUNACHAL PRADESH	3.79	0.16
JITPL	3.77	0.16
MAITHON POWER LTD	3.43	0.14
SHREE CEMENT	3.28	0.14
JAYPEE NIGRIE	3.27	0.14
LANCO BUDHIL	3.13	0.13
ACBIL	3.08	0.13
NSPCL	2.87	0.12
KSK MAHANADI	2.78	0.12
MANIPUR	2.62	0.11
ADHUNIK POWER LTD	2.51	0.11
MIZORAM	2.26	0.10
COASTGEN	2.26	0.10
AD HYDRO	1.90	0.08
NEEPCO STATIONS	1.58	0.07
CHUZACHEN HEP	1.46	0.06
BRBCL,NABINAGAR	1.37	0.06
BANGLADESH	1.30	0.05
SKS POWER	1.13	0.05
DGEN MEGA POWER	1.04	0.04
LANKO_AMK	1.02	0.04
TRN ENERGY	0.93	0.04
SIMHAPURI	0.74	0.03
KORBA WEST POWER	0.68	0.03
RKM POWER	0.63	0.03
LANKO KONDAPALLI	0.57	0.02
DCPP	0.53	0.02
LOKTAK	0.48	0.02
RANGIT HEP	0.47	0.02
RANGANADI HEP	0.41	0.02
URI-2	0.38	0.02
MALANA	0.30	0.01
MEENAKSHI	0.29	0.01
DOYANG HEP	0.26	0.01
DHARIWAL POWER	0.19	0.01
TEESTA HEP	0.07	0.00
TOTAL	2371.54	100.00
Volume Imported by top 5 Regional Entities	623.14	26.28

Table-15: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY-WISE), OCTOBER 2018		
Sr.No.	Name of the Entity	Total volume of net short-term transactions of electricity*
1	MAHARASHTRA	1990.33
2	GUJARAT	1674.13
3	TELANGANA	968.65
4	BIHAR	809.61
5	ANDHRA PRADESH	689.51
6	ODISHA	454.56
7	TAMIL NADU	420.95
8	BANGLADESH	361.53
9	J & K	265.17
10	CHHATTISGARH	259.81
11	ESSAR STEEL	232.00
12	UTTAR PRADESH	213.26
13	WEST BENGAL	181.37
14	JHARKHAND	174.41
15	ASSAM	91.29
16	NTPC STATIONS-NR	82.52
17	MP	68.77
18	PONDICHERRY	48.54
19	UTTARAKHAND	42.77
20	DADRA & NAGAR HAVELI	41.02
21	BALCO	38.42
22	GOA	35.06
23	DAMAN AND DIU	33.66
24	NTPC STATIONS-SR	31.57
25	CGPL	31.43
26	NEPAL(NVVN)	26.53
27	NETCL VALLUR	21.06
28	HARYANA	15.02
29	NTPC STATIONS-ER	13.36
30	RGPL (DABHOL)	8.75
31	EMCO	6.37
32	SIKKIM	4.32
33	SKS POWER	1.13
34	COASTGEN	1.07
35	DGEN MEGA POWER	1.04
36	RKM POWER	-1.08
37	DHARIWAL POWER	-1.49
38	MALANA	-2.32
39	URI-2	-3.36
40	RANGANADI HEP	-3.75
41	NJPC	-6.26
42	NEEPCO STATIONS	-7.25
43	ARUNACHAL PRADESH	-7.58
44	TEESTA HEP	-10.75
45	JHABUA POWER_MP	-10.79
46	LANKO_AMK	-12.27
47	CHANDIGARH	-17.99
48	NTPC STATIONS-NER	-19.16
49	BRBCL,NABINAGAR	-23.01
50	NLC	-24.85

51	NTPC STATIONS-WR	-25.08
52	THERMAL POWERTECH	-30.18
53	KARCHAM WANGTOO	-30.62
54	MIZORAM	-32.08
55	CHUZACHEN HEP	-32.86
56	SAINJ HEP	-35.85
57	MANIPUR	-36.60
58	MEGHALAYA	-38.73
59	JORETHANG	-41.79
60	DIKCHU HEP	-45.20
61	AD HYDRO	-45.75
62	GMR KAMALANGA	-45.78
63	TASHIDENG HEP	-47.51
64	MARUTI COAL	-48.74
65	DAGACHU	-50.95
66	ACBIL	-53.63
67	ONGC PALATANA	-56.14
68	TRIPURA	-61.38
69	SPECTRUM	-63.91
70	NHPC STATIONS	-67.06
71	MB POWER	-78.50
72	TRN ENERGY	-96.35
73	JINDAL STAGE-II	-109.79
74	ADHUNIK POWER LTD	-114.67
75	KERALA	-124.95
76	JITPL	-148.39
77	JINDAL POWER	-212.17
78	SHREE CEMENT	-212.44
79	HIMACHAL PRADESH	-215.26
80	DVC	-222.56
81	ILF&S	-232.75
82	DB POWER	-255.19
83	GMR CHATTISGARH	-317.26
84	ESSAR POWER	-379.80
85	TEESTA STG3	-388.87
86	JAYPEE NIGRIE	-474.01
87	DELHI	-566.75
88	RAJASTHAN	-666.38
89	KARNATAKA	-672.83
90	SEMBICORP	-888.25
91	PUNJAB	-926.68
<i>* Total volume of net short-term transactions of electricity includes net of transactions of electricity through bilateral, power exchange and UI</i> <i>(-) indicates sale and (+) indicates purchase</i>		

Table-16: DETAILS OF CONGESTION IN POWER EXCHANGES, OCTOBER 2018			
	Details of Congestion	IEX	PXIL
A	Unconstrained Cleared Volume* (MUs)	6674.86	4.80
B	Actual Cleared Volume and hence scheduled (MUs)	6505.17	4.80
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	169.69	0.00
D	Volume of electricity that could not be cleared as % to Unconstrained Cleared Volume	2.54%	0.00%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	21.47%	0.00%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	20.34%	0.00%
	6.00 - 12.00 hours	20.19%	0.00%
	12.00 - 18.00 hours	18.94%	0.00%
	18.00 - 24.00 hours	40.53%	0.00%
<i>* This power would have been scheduled had there been no congestion.</i>			
<i>Source: IEX & PXIL & NLDC</i>			

Table-17: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA (DAY-WISE) (MUs), OCTOBER 2018						
Date	Bilateral		Power Exchange (Area Clearing Volume# of Day Ahead Market)		Deviation Settlement (Over Drawl+Under Generation)	Total Electricity Generation (MU) as given at CEA Website*
	Through Traders and PXs**	Direct	IEX	PXIL		
1-Oct-18	100.47	64.11	257.17	0.00	68.57	3721.08
2-Oct-18	96.28	64.10	274.71	4.80	61.28	3669.19
3-Oct-18	95.38	65.52	268.69	0.00	62.71	3810.52
4-Oct-18	98.10	62.00	270.86	0.00	65.49	3815.47
5-Oct-18	95.60	64.55	251.12	0.00	64.86	3782.25
6-Oct-18	93.92	64.30	234.98	0.00	59.89	3755.15
7-Oct-18	98.78	63.96	224.46	0.00	55.94	3689.80
8-Oct-18	83.33	62.64	246.49	0.00	62.69	3813.94
9-Oct-18	78.11	63.20	231.07	0.00	66.24	3798.39
10-Oct-18	85.35	62.99	245.19	0.00	63.66	3823.61
11-Oct-18	77.45	62.72	249.48	0.00	68.01	3711.49
12-Oct-18	87.53	60.00	238.92	0.00	60.46	3704.98
13-Oct-18	83.92	59.75	211.54	0.00	72.27	3687.26
14-Oct-18	108.93	60.58	179.79	0.00	60.00	3605.26
15-Oct-18	96.02	61.29	198.75	0.00	58.85	3695.96
16-Oct-18	116.76	57.67	195.02	0.00	56.73	3705.32
17-Oct-18	116.65	57.91	187.54	0.00	54.09	3660.79
18-Oct-18	102.65	57.46	183.40	0.00	56.62	3522.60
19-Oct-18	96.44	59.41	176.11	0.00	56.95	3489.15
20-Oct-18	96.59	59.36	169.50	0.00	54.26	3552.82
21-Oct-18	94.90	59.51	164.62	0.00	54.27	3523.93
22-Oct-18	92.11	58.69	203.41	0.00	56.70	3614.58
23-Oct-18	91.95	56.94	215.54	0.00	56.46	3666.52
24-Oct-18	95.59	52.72	203.07	0.00	55.86	3661.84
25-Oct-18	95.16	60.63	197.52	0.00	55.36	3648.55
26-Oct-18	87.65	59.92	177.47	0.00	61.52	3581.13
27-Oct-18	81.15	58.17	184.31	0.00	59.10	3558.82
28-Oct-18	84.27	57.69	156.83	0.00	61.31	3421.41
29-Oct-18	87.44	53.08	171.02	0.00	67.28	3523.36
30-Oct-18	83.26	51.03	164.82	0.00	63.94	3568.22
31-Oct-18	91.95	50.85	170.81	0.00	57.90	3583.06
Total	2893.71	1852.74	6504.22	4.80	1879.30	113366.45
<i>Source: NLDC</i>						
<i>* Gross Electricity Generation excluding electricity generation from renewable and captive power plants.</i>						
<i>** The volume of bilateral through PXs represents the volume through term-ahead contracts.</i>						
<i># Area Clearing Volume represents the scheduled volume of all the bid areas.</i>						

Table-18: PRICE OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (DAY-WISE)(₹/kWh), OCTOBER 2018									
Market Segment	Day ahead market of IEX			Day ahead market of PXIL			Under Drawl/Over Drawl from the Grid (DSM)		
Date	Minimum ACP	Maximum ACP	Weighted Average Price*	Minimum ACP	Maximum ACP	Weighted Average Price*	All India Grid		
							Minimum Price	Maximum Price	Average Price**
1-Oct-18	4.25	17.61	7.60	-	-	-	0.00	5.32	2.41
2-Oct-18	3.50	10.70	5.20	6.50	6.50	6.50	0.00	4.91	1.91
3-Oct-18	4.35	18.00	7.15	-	-	-	0.00	3.45	2.23
4-Oct-18	5.00	18.20	7.52	-	-	-	0.36	3.45	2.15
5-Oct-18	4.74	14.55	7.86	-	-	-	0.00	4.91	1.96
6-Oct-18	4.50	17.55	8.16	-	-	-	0.00	5.74	2.02
7-Oct-18	3.50	9.50	5.90	-	-	-	0.00	3.45	2.06
8-Oct-18	5.50	18.00	8.61	-	-	-	0.00	6.36	2.63
9-Oct-18	5.89	14.55	9.00	-	-	-	0.00	4.91	2.28
10-Oct-18	3.74	9.50	5.29	-	-	-	0.36	5.32	2.36
11-Oct-18	4.16	10.03	7.22	-	-	-	0.00	5.95	1.86
12-Oct-18	3.99	10.24	5.57	-	-	-	0.00	5.32	2.08
13-Oct-18	2.87	18.81	5.10	-	-	-	0.00	3.45	1.93
14-Oct-18	2.88	5.27	3.92	-	-	-	0.00	5.32	2.25
15-Oct-18	2.75	17.09	6.06	-	-	-	0.00	6.16	2.26
16-Oct-18	3.03	19.35	5.66	-	-	-	0.00	3.45	2.00
17-Oct-18	2.98	19.88	5.40	-	-	-	0.00	3.45	1.86
18-Oct-18	2.83	17.14	4.58	-	-	-	0.00	3.45	1.82
19-Oct-18	2.68	13.95	4.42	-	-	-	0.00	3.45	1.83
20-Oct-18	3.02	20.00	4.57	-	-	-	0.00	5.74	2.61
21-Oct-18	3.03	5.13	4.06	-	-	-	0.71	6.36	2.91
22-Oct-18	3.59	19.99	6.25	-	-	-	0.36	6.16	3.36
23-Oct-18	3.57	16.00	6.97	-	-	-	0.00	6.36	2.59
24-Oct-18	3.55	17.00	5.18	-	-	-	0.00	3.45	2.13
25-Oct-18	3.56	17.53	6.39	-	-	-	0.00	5.32	1.66
26-Oct-18	3.22	18.29	5.54	-	-	-	0.00	5.32	1.94
27-Oct-18	3.38	12.01	5.26	-	-	-	0.00	5.32	2.12
28-Oct-18	3.21	19.04	4.38	-	-	-	0.00	3.45	1.62
29-Oct-18	3.03	20.00	5.40	-	-	-	0.00	4.91	1.94
30-Oct-18	3.14	14.93	5.06	-	-	-	0.00	4.91	2.59
31-Oct-18	3.06	16.00	5.86	-	-	-	0.00	5.32	2.48
	2.68#	20.00#	6.13	6.50#	6.50#	6.50	0.00#	6.36#	2.19
Source: Data on price of PX transactions from IEX and PXIL and data on DSM Price from NLDC.									
* 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.									
** 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.									
# Maximum/Minimum in the month									

Table-19: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY*-WISE) (MUs), OCTOBER 2018										
Name of the Entity	Through Bilateral			Through Power Exchange			Through DSM with Regional Grid			Total Net***
	Sale	Purchase	Net**	Sale	Purchase	Net**	Import (Over Drawl)	Export (Under Drawl)	Net**	
PUNJAB	343.98	42.58	-301.40	643.96	0.00	-643.96	45.96	27.27	18.68	-926.68
HARYANA	238.00	442.54	204.54	216.01	0.71	-215.31	56.78	30.99	25.79	15.02
RAJASTHAN	24.65	0.00	-24.65	716.86	5.57	-711.29	109.65	40.09	69.56	-666.38
DELHI	164.81	37.38	-127.43	430.63	2.38	-428.24	15.31	26.40	-11.08	-566.75
UTTAR PRADESH	28.73	191.59	162.86	35.46	54.95	19.49	86.92	56.00	30.91	213.26
UTTARAKHAND	15.17	71.59	56.42	33.72	39.05	5.33	16.49	35.48	-18.99	42.77
HP	84.65	69.39	-15.26	246.11	3.22	-242.89	47.02	4.13	42.89	-215.26
J & K	76.69	92.99	16.30	0.81	276.17	275.36	24.41	50.90	-26.49	265.17
CHANDIGARH	0.00	0.00	0.00	23.40	0.03	-23.37	9.06	3.68	5.38	-17.99
MP	16.53	175.25	158.72	103.69	23.91	-79.77	48.78	58.96	-10.18	68.77
MAHARASHTRA	4.39	309.35	304.96	47.03	1725.78	1678.75	83.81	77.19	6.62	1990.33
GUJARAT	49.15	715.65	666.51	223.06	1088.03	864.97	151.68	9.03	142.65	1674.13
CHHATTISGARH	0.00	167.29	167.29	18.07	106.42	88.35	29.05	24.87	4.18	259.81
GOA	0.00	31.99	31.99	11.79	12.72	0.93	14.58	12.44	2.13	35.06
DAMAN AND DIU	0.00	0.00	0.00	0.00	8.91	8.91	25.13	0.38	24.75	33.66
D&N HAVELI	0.43	13.79	13.36	10.61	13.32	2.72	26.71	1.77	24.94	41.02
ANDHRA P	375.59	885.01	509.42	69.94	202.24	132.30	85.87	38.08	47.79	689.51
KARNATAKA	200.02	0.70	-199.32	581.34	16.88	-564.46	112.89	21.94	90.95	-672.83
KERALA	58.40	0.00	-58.40	94.02	7.26	-86.76	63.61	43.41	20.20	-124.95
TAMIL NADU	1.53	133.75	132.22	34.71	306.49	271.78	24.42	7.47	16.95	420.95
PONDICHERRY	0.00	0.00	0.00	0.00	0.00	0.00	85.65	37.11	48.54	48.54
TELANGANA	43.53	130.44	86.91	30.89	906.93	876.04	6.60	0.90	5.70	968.65
WEST BENGAL	180.92	269.44	88.52	222.58	336.84	114.26	29.44	50.86	-21.42	181.37
ODISHA	63.86	27.83	-36.02	120.38	581.57	461.19	37.26	7.86	29.40	454.56
BIHAR	2.28	167.88	165.60	6.31	530.48	524.17	123.26	3.41	119.85	809.61
JHARKHAND	1.04	112.22	111.17	35.58	0.00	-35.58	106.84	8.02	98.82	174.41
SIKKIM	18.60	0.00	-18.60	41.88	0.00	-41.88	83.77	18.97	64.79	4.32
DVC	307.92	4.21	-303.71	2.43	81.20	78.77	5.10	2.72	2.38	-222.56
ARUNACHAL P	0.00	0.00	0.00	2.20	0.00	-2.20	3.79	9.16	-5.38	-7.58
ASSAM	0.00	53.65	53.65	47.89	75.28	27.39	22.40	12.14	10.26	91.29
MANIPUR	27.06	0.45	-26.60	7.92	1.56	-6.35	2.62	6.26	-3.64	-36.60
MEGHALAYA	3.80	9.49	5.69	52.01	7.68	-44.33	5.46	5.55	-0.09	-38.73
MIZORAM	14.84	0.00	-14.84	16.11	0.00	-16.11	2.26	3.39	-1.13	-32.08
NAGALAND	3.48	0.00	-3.48	1.00	0.00	-1.00	6.51	2.74	3.77	-0.71
TRIPURA	0.00	0.48	0.48	65.08	0.29	-64.79	10.32	7.40	2.92	-61.38
NTPC -NR	0.00	0.00	0.00	11.77	0.00	-11.77	118.55	24.27	94.29	82.52
NHPC STATIONS	0.00	0.00	0.00	0.00	0.00	0.00	9.25	76.31	-67.06	-67.06
NJPC	0.00	0.00	0.00	0.00	0.00	0.00	6.11	12.37	-6.26	-6.26
AD HYDRO	0.00	0.00	0.00	46.20	0.00	-46.20	1.90	1.44	0.45	-45.75
KARCHAM WANGT	0.00	0.00	0.00	28.22	0.00	-28.22	3.90	6.30	-2.40	-30.62
SHREE CEMENT	135.91	0.00	-135.91	79.63	0.00	-79.63	3.28	0.17	3.11	-212.44
LANCO BUDHIL	0.00	0.00	0.00	2.69	0.00	-2.69	3.13	0.97	2.16	-0.53
MALANA	0.00	0.00	0.00	2.42	0.00	-2.42	0.30	0.21	0.09	-2.32
URI-2	0.00	0.00	0.00	0.00	0.00	0.00	0.38	3.74	-3.36	-3.36
SAINJ HEP	0.00	0.00	0.00	35.85	0.00	-35.85	0.00	0.00	0.00	-35.85
NTPC -WR	0.00	0.00	0.00	2.73	0.00	-2.73	116.76	139.10	-22.34	-25.08
JINDAL POWER	5.49	0.00	-5.49	206.64	0.00	-206.64	4.02	4.06	-0.04	-212.17
LANKO_AMK	8.80	0.00	-8.80	0.00	0.00	0.00	1.02	4.49	-3.47	-12.27
NSPCL	0.00	0.00	0.00	0.00	0.00	0.00	2.87	1.99	0.88	0.88
ACBIL	33.59	0.00	-33.59	22.02	0.00	-22.02	3.08	1.09	1.99	-53.63
BALCO	0.00	1.49	1.49	0.20	31.36	31.16	7.71	1.94	5.78	38.42
RGPL (DABHOL)	0.00	0.00	0.00	0.00	0.00	0.00	9.38	0.62	8.75	8.75
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	34.24	2.80	31.43	31.43
DCPP	0.00	0.00	0.00	0.00	0.00	0.00	0.53	1.32	-0.79	-0.79
EMCO	0.00	0.00	0.00	0.73	0.00	-0.73	11.76	4.66	7.10	6.37

ESSAR STEEL	0.00	165.10	165.10	0.00	61.80	61.80	25.31	20.22	5.09	232.00
KSK MAHANADI	0.00	0.00	0.00	0.00	0.00	0.00	2.78	3.03	-0.25	-0.25
ESSAR POWER	261.42	0.00	-261.42	131.45	0.00	-131.45	16.23	3.17	13.07	-379.80
JINDAL STAGE-II	23.85	0.00	-23.85	84.53	0.00	-84.53	9.81	11.22	-1.42	-109.79
DB POWER	111.47	0.00	-111.47	159.50	0.00	-159.50	16.89	1.11	15.78	-255.19
DHARIWAL POWER	0.00	0.00	0.00	1.53	0.00	-1.53	0.19	0.15	0.04	-1.49
JAYPEE NIGRIE	116.02	0.00	-116.02	351.85	0.00	-351.85	3.27	9.41	-6.14	-474.01
DGEN MEGA POWI	0.00	0.00	0.00	0.00	0.00	0.00	1.04	0.00	1.04	1.04
GMR CHATTISGAR	245.61	0.00	-245.61	80.43	0.00	-80.43	10.53	1.75	8.78	-317.26
KORBA WEST POW	0.00	0.00	0.00	0.00	0.00	0.00	0.68	0.00	0.68	0.68
MB POWER	15.95	0.00	-15.95	63.06	0.00	-63.06	4.68	4.16	0.52	-78.50
MARUTI COAL	0.00	0.00	0.00	48.74	0.00	-48.74	0.00	0.00	0.00	-48.74
SPECTRUM	32.83	0.00	-32.83	31.08	0.00	-31.08	0.00	0.00	0.00	-63.91
JHABUA POWER_N	5.73	0.00	-5.73	7.92	0.00	-7.92	5.20	2.35	2.85	-10.79
TRN ENERGY	9.11	0.00	-9.11	85.43	0.00	-85.43	0.93	2.74	-1.81	-96.35
RKM POWER	0.00	0.00	0.00	0.00	0.00	0.00	0.63	1.71	-1.08	-1.08
SKS POWER	0.00	0.00	0.00	0.00	0.00	0.00	1.13	0.01	1.13	1.13
NTPC -SR	0.00	0.00	0.00	0.00	0.00	0.00	51.72	20.14	31.57	31.57
LANKO KONDAPAL	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.57	0.57
SIMHAPURI	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.00	0.74	0.74
MEENAKSHI	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.29	0.29
COASTGEN	0.00	0.00	0.00	0.00	0.00	0.00	2.26	1.19	1.07	1.07
THERMAL POWER	0.00	0.00	0.00	34.92	0.00	-34.92	5.74	1.00	4.74	-30.18
ILF&S	120.81	0.00	-120.81	122.75	0.00	-122.75	11.99	1.18	10.81	-232.75
NLC	0.00	0.00	0.00	17.26	0.00	-17.26	16.11	23.70	-7.58	-24.85
SEBPCORP	836.24	0.00	-836.24	57.44	0.00	-57.44	6.65	1.23	5.42	-888.25
NETCL VALLUR	0.00	0.00	0.00	0.00	0.00	0.00	23.32	2.25	21.06	21.06
NTPC -ER	0.00	0.00	0.00	0.13	0.00	-0.13	55.80	42.31	13.49	13.36
MAITHON POWER	0.00	0.00	0.00	0.00	0.00	0.00	3.43	4.24	-0.81	-0.81
ADHUNIK POWER	113.07	0.00	-113.07	3.16	0.00	-3.16	2.51	0.95	1.56	-114.67
CHUZACHEN HEP	29.50	0.00	-29.50	3.23	0.00	-3.23	1.46	1.59	-0.13	-32.86
RANGIT HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.47	1.33	-0.87	-0.87
GMR KAMALANGA	10.14	0.00	-10.14	34.74	0.00	-34.74	4.35	5.25	-0.90	-45.78
JITPL	65.61	0.00	-65.61	84.61	0.00	-84.61	3.77	1.94	1.83	-148.39
TEESTA HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.07	10.82	-10.75	-10.75
DAGACHU	57.87	0.00	-57.87	0.00	0.00	0.00	7.50	0.59	6.92	-50.95
JORETHANG	44.53	0.00	-44.53	6.00	0.00	-6.00	9.23	0.50	8.73	-41.79
NEPAL(NVVN)	0.00	50.34	50.34	0.00	0.00	0.00	29.67	53.48	-23.81	26.53
BANGLADESH	0.00	372.59	372.59	0.00	0.00	0.00	1.30	12.35	-11.06	361.53
TEESTA STG3	0.00	0.00	0.00	388.87	0.00	-388.87	0.00	0.00	0.00	-388.87
DIKCHU HEP	8.40	0.00	-8.40	36.80	0.00	-36.80	0.00	0.00	0.00	-45.20
TASHIDENG HEP	41.35	0.00	-41.35	6.16	0.00	-6.16	0.00	0.00	0.00	-47.51
BRBCL,NABINAGA	12.60	0.00	-12.60	7.86	0.00	-7.86	1.37	3.93	-2.56	-23.01
NTPC -NER	0.00	0.00	0.00	19.16	0.00	-19.16	0.00	0.00	0.00	-19.16
NEEPCO STNS	0.00	0.00	0.00	0.00	0.00	0.00	1.58	8.82	-7.25	-7.25
RANGANADI HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.41	4.16	-3.75	-3.75
ONGC PALATANA	48.27	0.00	-48.27	7.87	0.00	-7.87	0.00	0.00	0.00	-56.14
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 November, 2018

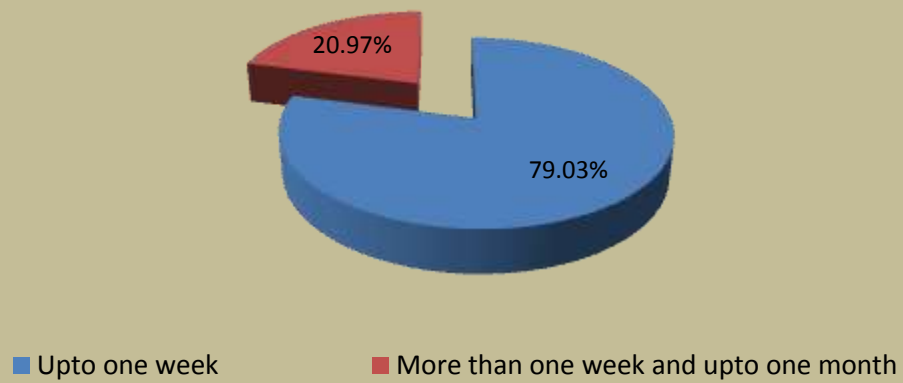


Figure-8: Forward Curve based on Prices of Bilateral Contracts

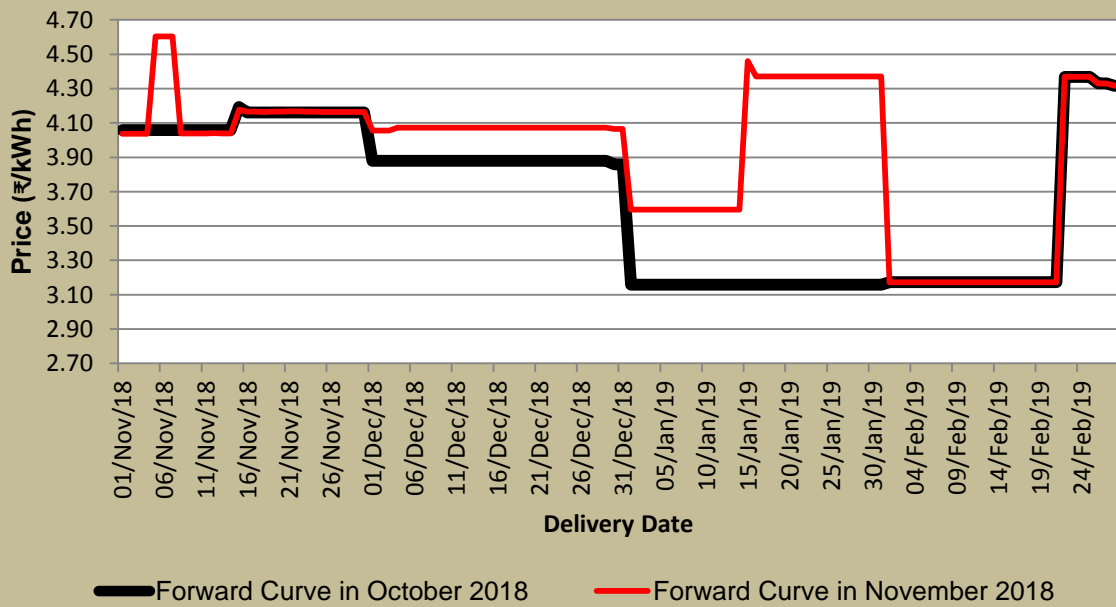


Table-20 : VOLUME AND PRICE OF RENEWABLE ENERGY CERTIFICATES (RECs) TRANSACTED THROUGH POWER EXCHANGES, OCTOBER 2018					
Sr.No.	Details of REC Transactions	IEX		PXIL	
		Solar	Non-Solar	Solar	Non Solar
A	Volume of Buy Bid	576535	724461	451791	171295
B	Volume of Sell Bid	335003	434675	239904	203868
C	Ratio of Buy Bid to Sell Bid Volume	1.72	1.67	1.88	0.84
D	Market Clearing Volume (MWh)	130279	295010	145672	132295
E	Weighted average Market Clearing Price (₹/MWh)	1001	1251	1000	1201

Source: IEX and PXIL

Note 1: 1 REC = 1 MWh

Note 2:	<i>Forbearance and Floor Price w.e.f 1st April 2017</i>		
	Type of REC	<i>Floor Price (₹/MWh)</i>	<i>Forbearance Price (₹/MWh)</i>
	<i>Solar</i>	<i>1000.00</i>	<i>2500.00</i>
	<i>Non-Solar</i>	<i>1000.00</i>	<i>2900.00</i>