



Monthly Report on Short-term Transactions of Electricity in India

October, 2015



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Abbreviations

Abbreviation	Expanded Version
ACBIL	ACB (India) Limited
ACP	Area Clearing Price
ACV	Area Clearing Volume
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
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
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.
KARCHAM WANGTOO	Jaypee Karcham Hydro Corporation Limited
KORBA WEST POWER	Korba West Power Company Limited
KSK MAHANADI	KSK Mahanadi Power Ltd
LANKO BUDHIL	Lanco Budhil Hydro Power Private Limited
LANKO AMK	Lanco Amarkantak Power Private Limited
LANKO KONDAPALLY	Lanco Kondapally Power Private Limited
LOKTAK	Loktak Power Project
MALANA	Malana Hydroelectric Plant
MARUTI COAL	Maruti Clean Coal and Power Ltd
MB POWER	MB Power Ltd

MEENAKSHI	Meenakshi Energy Private Limited
MP	Madhya Pradesh
MUs	Million Units
NEEPCO STATIONS	North Eastern Electric Power Corporation Limited Stations
NHPC STATIONS	National Hydro Electric Power Corporation Ltd. Stations
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
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
SHREE CEMENT	Shree Cement Limited
SIMHAPURI	Simhapuri Energy Private Limited
SPECTRUM	Spectrum Power Generation Ltd
STERLITE	Sterlite Energy Limited
TEESTA HEP	Teesta Hydro Electric Power Project
THERMAL POWERTECH	Thermal Powertech Corporation India Limited
URI2	URI2 Hydro Power Project
UT	Union Territory
VANDANA VIDYUT	Vandana Vidyut Limited

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, 2015** are as under:

I: Volume of Short-term Transactions of Electricity

During October 2015, total electricity generation excluding generation from renewable and captive power plants in India was 98462.42 MUs (Table-1).

Of the total electricity generation, 9562.36 MUs (9.71%) was transacted through short-term, comprising of 4570.50 MUs (4.64%) through bilateral (through traders and term-ahead contracts on power exchanges and directly between distribution companies), followed by 3252.79 MUs (3.30%) through day ahead collective transactions on power exchanges (IEX and PXIL) and 1739.07 MUs (1.77%) through DSM (Table-1 & Figure-2).

Of the total short-term transactions, bilateral constitutes 47.80% (21.08% through traders and term-ahead contracts on power exchanges and 26.72% directly between distribution companies) followed by 34.02% through day ahead collective transactions on power exchanges and 18.19% 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 44 trading licensees as on October, 2015. In October 2015, 20 trading licensees were engaged in short term trading. Top 5 trading licensees had a share of 75.19% in the total volume traded by all the licensees. These are PTC India Ltd., JSW Power Trading Company Ltd., Tata Power Trading Company (P) Ltd., Manikaran Power Ltd. and Mittal Processors (P) Ltd.,

Herfindahl-Hirschman Index (HHI) has been used for measuring the competition among the trading licensees. Increase in the HHI generally indicates a decrease in competition and an increase of market concentration, and vice versa. The HHI below 0.15 indicates non-concentration, HHI between 0.15 to 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 0.1494 for the month of October 2015, which indicates non-concentration of market power (Table-2).

The volume of electricity transacted through IEX and PXIL in the day ahead market was 3245.87 MUs and 6.92 MUs respectively. The volume of total buy bids and sale bids was 4103.07 MUs and 4431.14 MUs respectively in IEX while the same was 34.47 MUs and 11.99 MUs respectively in PXIL. The variation in the volume of buy bids and sale 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 27.60 MUs and 92.09 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 ₹2.64/kWh, ₹7.99/kWh and ₹4.74/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 ₹4.92/kWh, ₹3.68/kWh and ₹3.81/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 separately. The minimum, maximum and weighted average prices were ₹0.70/kWh, ₹12.00/kWh and ₹3.04/kWh respectively in IEX and ₹0.72/kWh, ₹3.90/kWh and ₹3.03/kWh respectively in PXIL (Table-5).

The price of electricity transacted through IEX and PXIL in the term-ahead market was ₹3.53/kWh and ₹2.96/kWh respectively (Table-6 and Table-7).

(iii) Price of electricity transacted through DSM: The average deviation price was ₹2.05/kWh for all India grid. The minimum and maximum deviation prices were ₹0.00/kWh and ₹7.82/kWh respectively in the all India grid (Table-8).

The prices of electricity transacted through trading licensees, power exchanges and DSM and their comparison is shown in Table-18 & 19, Figure-5 & 6.

III: Volume of Short-term Transactions of Electricity (Regional Entity¹-Wise)

Of the total bilateral transactions, top 5 regional entities sold 48.60% of the volume, and these were Thermal Powertech Corporation India Limited, Simhapuri Energy Private Limited, Jindal India Thermal Power Limited, Haryana and GMR Kamalanga Energy Limited. Top 5 regional entities purchased 61.94% of the volume, and these were Telangana, West Bengal, Andhra Pradesh, Bihar and Gujarat (Table-9 & 10).

Of the total power exchange transactions, top 5 regional entities sold 38.42% of the volume, and these were Sterlite Energy Ltd, Jindal Power Limited, Gujarat, Korba West Power Company Limited and Jindal India Thermal Power Limited. Top 5 regional entities purchased 53.58% of the volume, and these were Rajasthan, Maharashtra, Gujarat, Bihar and West Bengal (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 37.41% of the volume, and these were Maharashtra, Haryana, NTPC Stations (Western Region), Gujarat and NHPC Stations (Table-13). Top 5 regional entities overdrew 34.27% of the volume, and these were Uttar Pradesh, Karnataka, NTPC Stations (Eastern Region), Kerala and NTPC Stations (Northern 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 Thermal Powertech Corporation India Ltd, Jindal India Thermal Power Ltd, GMR Kamalanga Energy Ltd, Simhapuri Energy Private Ltd and Sterlite Energy Ltd. Top 5 electricity purchasing regional entities were Telangana, West Bengal, Bihar, Maharashtra 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 2015, congestion occurred in both the power exchanges. 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

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.

difference between 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 and PXIL due to congestion was 4.80% and 8.22% of the unconstrained cleared volume respectively. In terms of time, congestion occurred was 79.77% in IEX and 48.92% in PXIL (Table-16).

V: Bilateral Contracts executed by Traders

In addition to the analysis on short-term transactions of electricity in October 2015, this section covers an analysis of bilateral contracts executed in November 2015.

(i) Duration of bilateral contracts: During November 2015, a total of 55 bilateral contracts (excluding banking/swap contracts) have been executed by traders for the volume of 3629.57 MUs. Figure-7 shows the percentage of contracts categorized according to the period of power supply. It can be observed from the figure that 33% of the bilateral contracts were executed for duration of up to one week, 65% of the contracts were executed for duration of more than a week and upto one month and the rest 2% of the contracts were executed for duration of more than one month.

During the month, 29 banking/swapping bilateral contracts were also executed for the volume of 1063.74 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 November, 2015 to May, 2016 based on bilateral contracts⁴ executed till November, 2015. Forward curves have been drawn for the contracts executed in November, 2015 and October,

⁴Excluding Banking/Swapping contracts

2015 for the purpose of comparison. It is observed that the forward prices from November, 2015 to May, 2016 were lower for the contracts executed in November, 2015 compared to the contracts executed in October, 2015.

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 session was held on power exchanges in March, 2011.

The details of REC transactions for the month of October, 2015 are shown in Table-20. The market clearing volume of solar RECs transacted on IEX and PXIL were 11945 and 1906 respectively and the market clearing price of these RECs was ₹3500/MWh on both the power exchanges. Market clearing volume of non-solar RECs transacted on IEX and PXIL were 68663 and 142779 respectively and the market clearing price of these RECs was ₹1500/MWh on both the power exchanges.

The gap between the volume of buy and sell bids of RECs placed through power exchanges shows that there was less demand for solar RECs and non-solar RECs. For Solar RECs, the ratio of buy bids to sell bids was 0.005 and 0.003 for IEX and PXIL respectively. For non-solar RECs, the ratio of buy bids to sell bids was 0.009 for IEX and 0.022 for PXIL.

VII: Inferences:

- The percentage of short-term transactions of electricity to total electricity generation was 9.71%.
- Of the total short-term transactions of electricity, 47.80% was transacted through bilateral (through traders and term ahead contracts on power exchanges and directly by distribution companies), followed by 34.02% through power exchanges and 18.19% through DSM.
- Top 5 trading licensees had a share of 75.19 % 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 0.1494, indicating non-concentration of market power.
- The weighted average price of electricity transacted through trading licensees was ₹4.74/kWh. The weighted average prices of electricity transacted through IEX and PXIL were ₹3.04/kWh and ₹3.03/kWh respectively.
- The average price of electricity transacted through DSM was ₹2.05/kWh
- Top 5 electricity selling regional entities were Thermal Powertech Corporation India Ltd, Jindal India Thermal Power Ltd, GMR Kamalanga Energy Ltd, Simhapuri Energy Private Ltd and Sterlite Energy Ltd. Top 5 electricity purchasing regional entities were Telangana, West Bengal, Bihar, Maharashtra and Andhra Pradesh.
- The volume of electricity that could not be cleared due to congestion was 4.80% and 8.22% of the unconstrained cleared volume for IEX and PXIL, respectively. In terms of time, congestion occurred for 79.77% of the time in IEX and 48.92% of the time in PXIL.
- In November 2015, 33% of the bilateral contracts were executed for a duration of up to one week, 65% of the contracts were executed for a duration of more than a week and upto one month and the rest 2% of the contracts were executed for a duration of more than one month.

- The forward prices from November, 2015 to May, 2016 were lower for the contracts executed in November, 2015 compared to the contracts executed in October, 2015.
- The market clearing volume of solar RECs transacted on IEX and PXIL were 11945 and 1906 respectively and the market clearing price of these RECs was ₹3500/MWh on both the power exchanges. Market clearing volume of non-solar RECs transacted on IEX and PXIL were 68663 and 142779 respectively and the market clearing price of these RECs was ₹1500/MWh on both the power exchanges.

Table-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (ALL INDIA), OCTOBER 2015				
Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	4570.50	47.80	4.64
	(i) Through Traders and PXs	2015.34	21.08	2.05
	(ii) Direct	2555.16	26.72	2.60
2	Through Power Exchanges	3252.79	34.02	3.30
	(i) IEX	3245.87	33.94	3.30
	(ii) PXIL	6.92	0.07	0.01
3	Through DSM	1739.07	18.19	1.77
	Total	9562.36	-	9.71
	Total Generation	98462.42	-	-

Source: NLDC

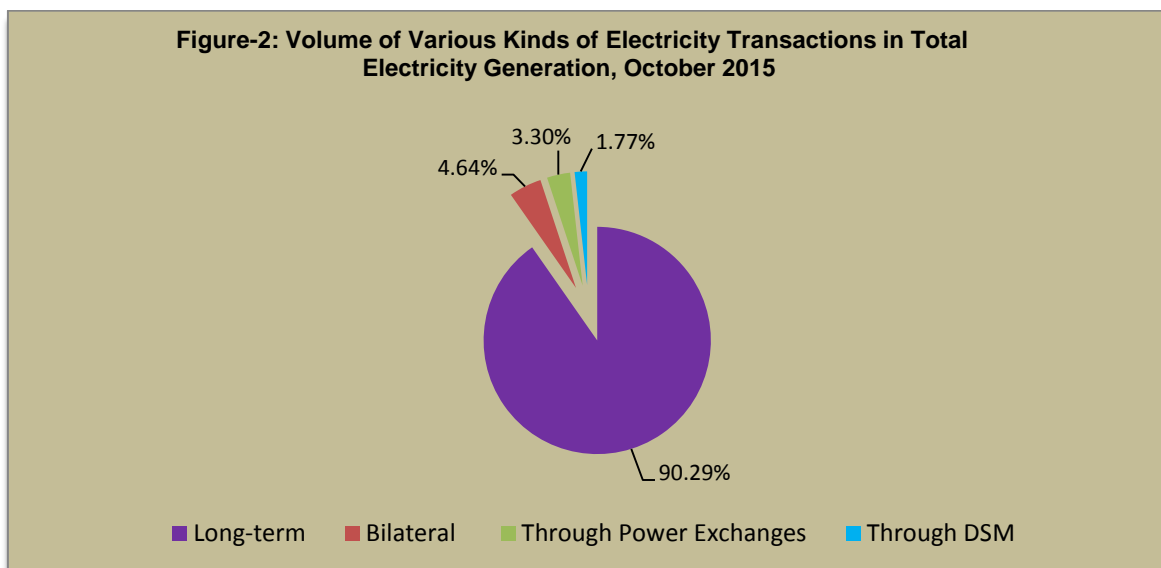
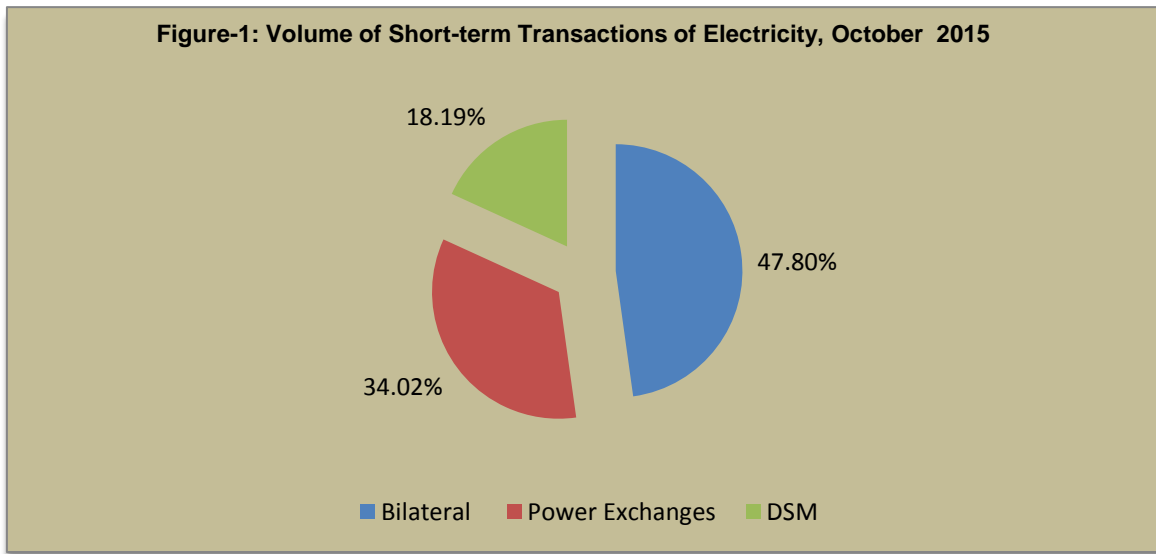


Figure-3: Volume of Short-term Transactions of Electricity, October 2015 (Day-wise)

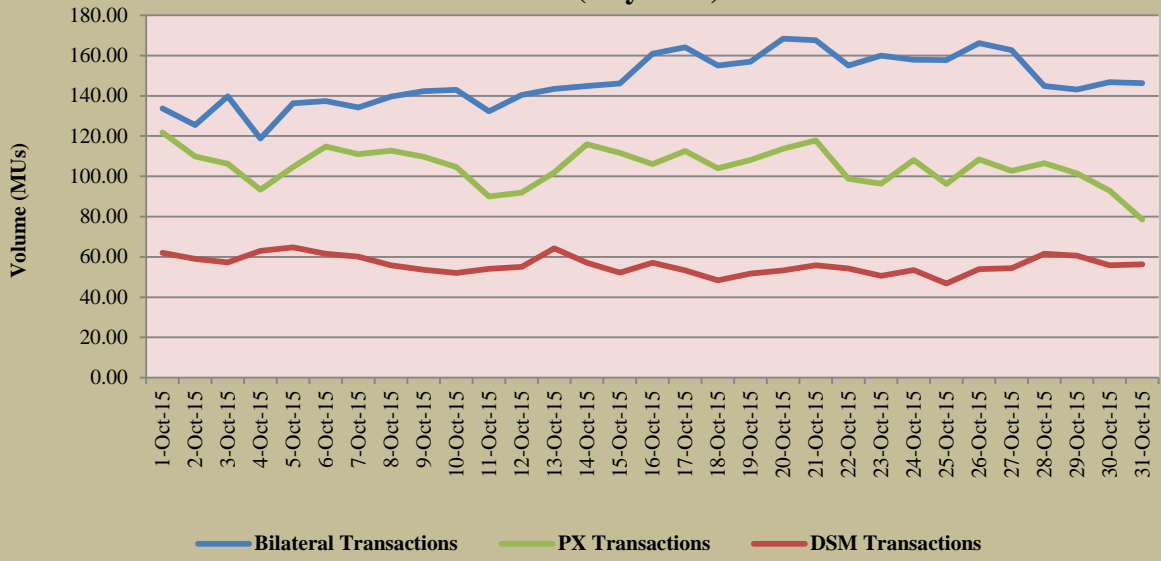


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, OCTOBER 2015			
Sr.No	Name of the Trading Licensee	% Share in total Volume transacted by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd.	29.07%	0.0845
2	JSW Power Trading Company Ltd	14.20%	0.0202
3	Tata Power Trading Company (P) Ltd.	13.01%	0.0169
4	Manikaran Power Ltd.	9.93%	0.0099
5	Mittal Processors (P) Ltd.	8.97%	0.0081
6	Adani Enterprises Ltd.	7.82%	0.0061
7	GMR Energy Trading Ltd.	3.76%	0.0014
8	Arunachal Pradesh Power Corporation (P) Ltd	3.23%	0.0010
9	Knowledge Infrastructure Systems (P) Ltd	2.02%	0.0004
10	NTPC Vidyut Vyapar Nigam Ltd.	1.66%	0.0003
11	Instinct Infra & Power Ltd.	1.35%	0.0002
12	RPG Power Trading Company Ltd.	1.21%	0.0001
13	Shree Cement Ltd.	1.17%	0.0001
14	Jaiprakash Associates Ltd.	0.65%	0.0000
15	Statkraft Markets Pvt. Ltd.	0.63%	0.0000
16	Essar Electric Power Development Corp. Ltd.	0.54%	0.0000
17	My Home Power Private Ltd.	0.31%	0.0000
18	National Energy Trading & Services Ltd.	0.27%	0.0000
19	Customized Energy Solutions India (P) Ltd.	0.09%	0.0000
20	Ambitious Power Trading Company Ltd.	0.09%	0.0000
TOTAL		100.00%	0.1494
Top 5 trading licensees		75.19%	
<i>Note 1: Volume of electricity transacted by the trading licensees includes bilateral transactions (inter-state & intra-state) and the transactions undertaken through power exchanges.</i>			
<i>Note 2: Volume of electricity transacted by Global Energy Ltd is not included.</i>			
<i>Source: Information submitted by trading licensees</i>			

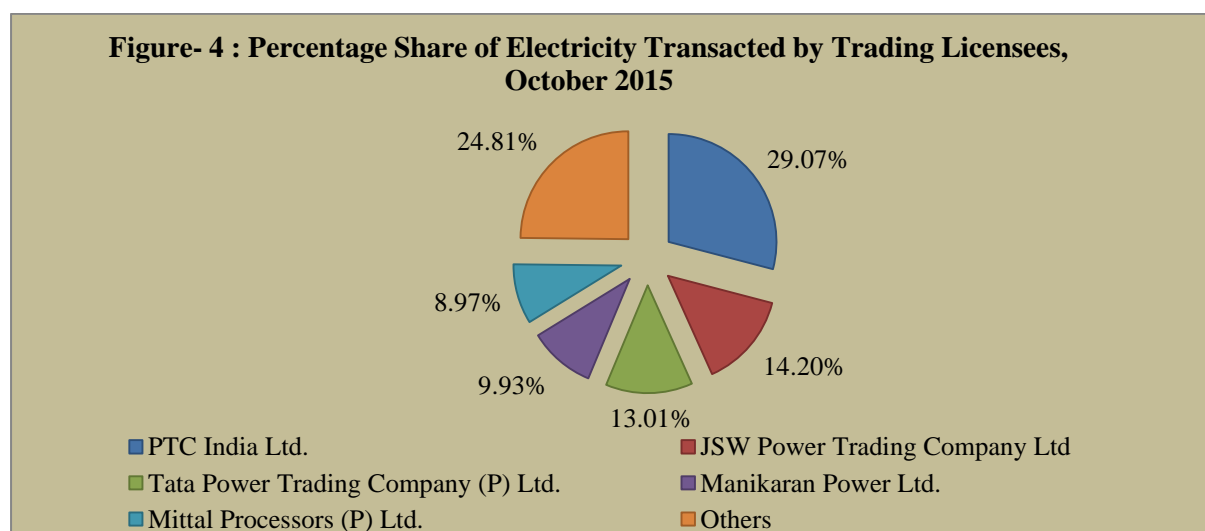


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, OCTOBER 2015		
Sr.No		Sale Price of Traders (₹/kWh)
1	Minimum	2.64
2	Maximum	7.99
3	Weighted Average	4.74

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), OCTOBER 2015		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	4.92
2	PEAK	3.68
3	OFF PEAK	3.81

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, OCTOBER 2015			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	0.70	0.72
2	Maximum	12.00	3.90
3	Weighted Average	3.04	3.03

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, OCTOBER 2015			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	20.88	3.60
2	Day Ahead Contingency Contracts	6.72	3.29
	Total	27.60	3.53

Source: IEX

Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, OCTOBER 2015			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	60.47	2.96
2	Daily Contracts	31.62	2.98
	Total	92.09	2.96

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH DSM, OCTOBER 2015		
Sr.No		Price in All India Grid (₹/kWh)
1	Minimum	0.00
2	Maximum	7.82
3	Average	2.05

Source: NLDC

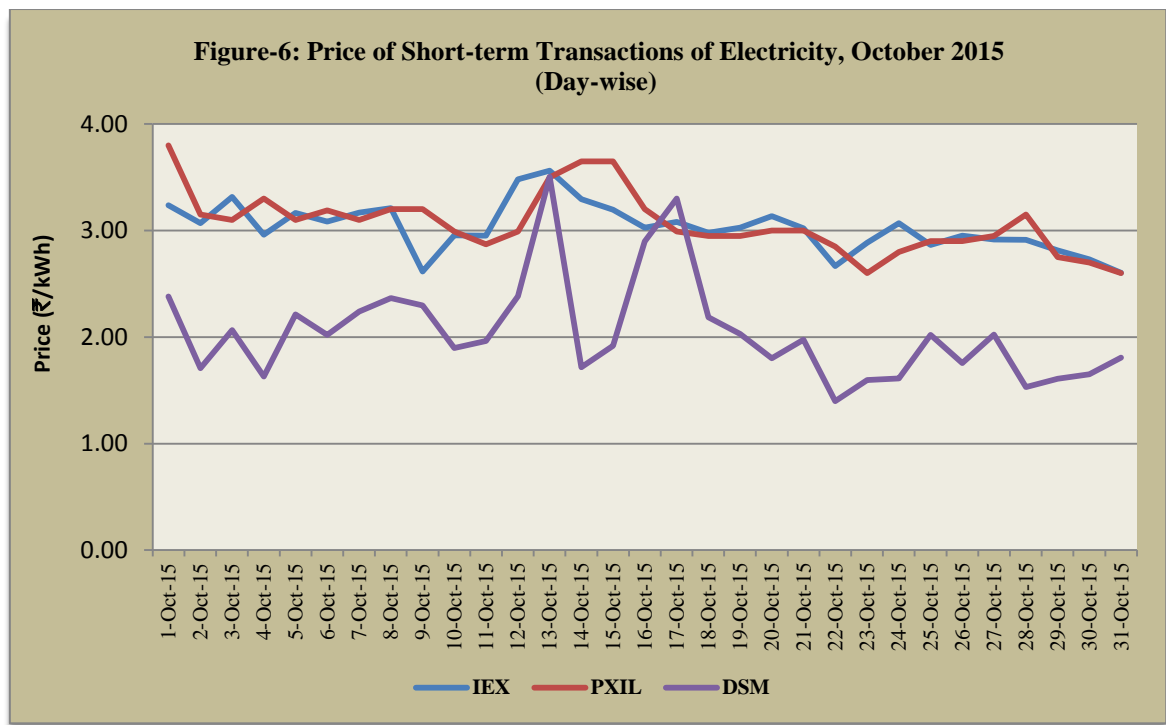
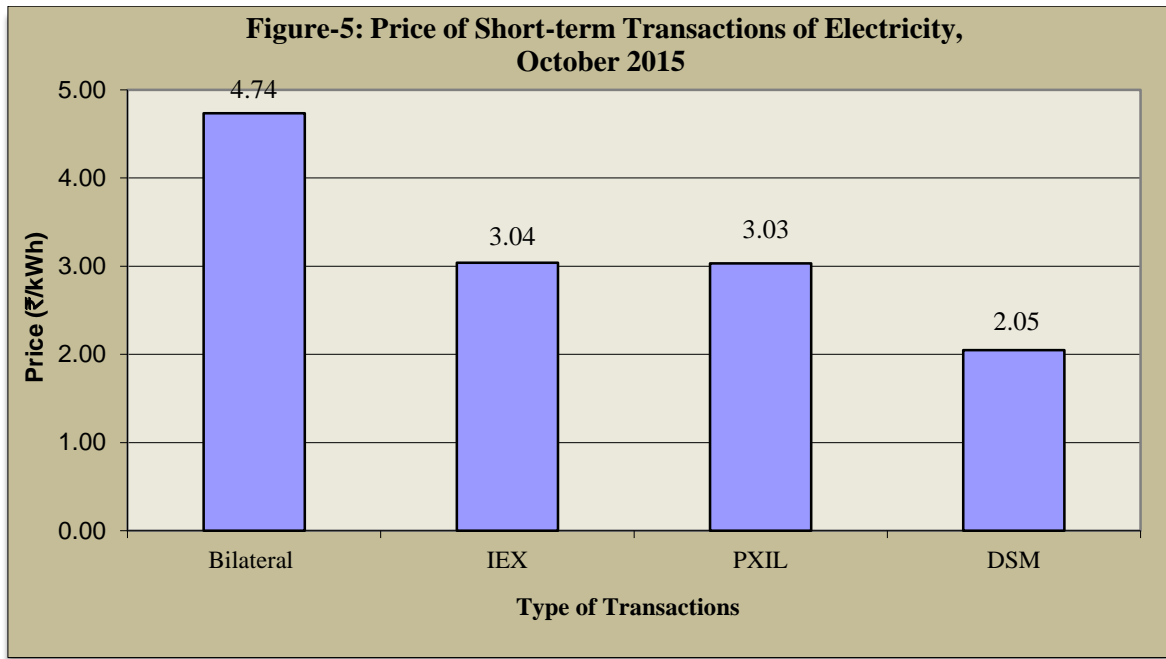


Table-9: VOLUME OF ELECTRICITY SOLD THROUGH BILATERAL, OCTOBER 2015		
Name of the State/UT/Other Regional Entity	Volume of Sale (MUs)	% of Volume
THERMAL POWERTECH	714.10	17.68
SIMHAPURI	357.35	8.85
JITPL	314.02	7.78
HARYANA	311.71	7.72
GMR KAMALANGA	265.06	6.56
PUNJAB	216.00	5.35
GUJARAT	192.38	4.76
KARNATAKA	144.89	3.59
MEENAKSHI	143.53	3.55
RAJASTHAN	138.32	3.43
SHREE CEMENT	133.77	3.31
LANKO KONDAPALLI	119.31	2.95
DELHI	102.54	2.54
ANDHRA PRADESH	93.97	2.33
ADHUNIK POWER LTD	90.83	2.25
DB POWER	88.21	2.18
DVC	73.69	1.82
JINDAL STAGE-II	56.59	1.40
STERLITE	55.30	1.37
KORBA WEST POWER	51.00	1.26
DAGACHU	50.81	1.26
JINDAL POWER	50.08	1.24
HIMACHAL PRADESH	38.11	0.94
UTTAR PRADESH	33.60	0.83
J & K	30.86	0.76
MEGHALAYA	29.43	0.73
MP	26.40	0.65
ODISHA	24.53	0.61
NSPCL	19.90	0.49
TELANGANA	17.60	0.44
EMCO	11.61	0.29
MANIPUR	9.47	0.23
ACBIL	7.61	0.19
MAITHON POWER LTD	5.98	0.15
WEST BENGAL	5.59	0.14
ASSAM	5.23	0.13
TRIPURA	4.75	0.12
UTTARAKHAND	1.82	0.05
KARCHAM WANGTOO	0.96	0.02
AD HYDRO	0.95	0.02
LANCO BUDHIL	0.07	0.00
Total	4037.93	100.00
Volume of Sale by top 5 States	1962.25	48.60

Table-10: VOLUME OF ELECTRICITY PURCHASED THROUGH BILATERAL, OCTOBER 2015		
Name of the State/UT/Other Regional Entity	Volume of Purchase (MUs)	% of Volume
TELANGANA	1164.56	25.48
WEST BENGAL	503.33	11.01
ANDHRA PRADESH	421.02	9.21
BIHAR	403.52	8.83
GUJARAT	338.75	7.41
MAHARASHTRA	278.19	6.09
CHHATTISGARH	230.92	5.05
UTTAR PRADESH	195.71	4.28
MP	141.60	3.10
HARYANA	138.31	3.03
UTTARAKHAND	129.60	2.84
ODISHA	124.93	2.73
JHARKHAND	95.54	2.09
ASSAM	88.22	1.93
J & K	85.58	1.87
KERALA	67.00	1.47
RAJASTHAN	42.74	0.94
HIMACHAL PRADESH	40.94	0.90
DELHI	34.66	0.76
ESSAR STEEL	20.06	0.44
MEGHALAYA	9.60	0.21
PUNJAB	7.68	0.17
GOA	3.72	0.08
TAMIL NADU	2.93	0.06
TRIPURA	1.40	0.03
Total	4570.50	100.00
Volume of Purchase by top 5 States	2831.18	61.94

**Table-11: VOLUME OF ELECTRICITY SOLD THROUGH POWER EXCHANGES,
OCTOBER 2015**

Name of the State/UT/Other Regional Entity	Volume of Sale (MUs)	% of Volume
STERLITE	295.42	9.08
JINDAL POWER	263.18	8.09
GUJARAT	253.03	7.78
KORBA WEST POWER	226.82	6.97
JITPL	211.41	6.50
HIMACHAL PRADESH	144.34	4.44
KARCHAM WANGTOO	127.38	3.92
ADHUNIK POWER LTD	109.22	3.36
GMR KAMALANGA	108.33	3.33
ODISHA	104.28	3.21
DCPP(DONGA MAHUA CAPTIVE POWER PLANT)	89.72	2.76
JINDAL STAGE-II	83.15	2.56
DB POWER	82.04	2.52
THERMAL POWERTECH	81.76	2.51
MARUTI COAL	75.83	2.33
CHHATTISGARH	69.16	2.13
TRIPURA	65.59	2.02
MAITHON POWER LTD	63.17	1.94
SIKKIM	58.36	1.79
MP	52.41	1.61
HARYANA	52.19	1.60
SHREE CEMENT	52.08	1.60
RAJASTHAN	51.32	1.58
WEST BENGAL	47.22	1.45
TELANGANA	41.64	1.28
ACBIL	40.83	1.26
CHUZACHEN HEP	38.76	1.19
ASSAM	37.48	1.15
AD HYDRO	29.30	0.90
EMCO	26.06	0.80
JORETHANG	26.00	0.80
SPECTRUM	24.04	0.74
NHPC STATIONS	22.75	0.70
DELHI	22.25	0.68
MAHARASHTRA	19.92	0.61
MEENAKSHI	19.84	0.61
J & K	19.22	0.59
LANCO BUDHIL	13.70	0.42
MANIPUR	13.50	0.42
MEGHALAYA	12.09	0.37
SIMHAPURI	10.79	0.33
UTTARAKHAND	10.52	0.32
NJPC	9.73	0.30
DVC	8.91	0.27
MIZORAM	8.33	0.26
BALCO	6.33	0.19
ANDHRA PRADESH	5.12	0.16
GOA	5.08	0.16

CHANDIGARH	4.88	0.15
KERALA	2.94	0.09
JAYPEE NIGRIE	2.26	0.07
MALANA	1.78	0.05
NAGALAND	1.00	0.03
DHARIWAL POWER	0.34	0.01
Total	3252.79	100.00
Volume of sale by top 5 Sellers	1249.85	38.42

Table-12: VOLUME OF ELECTRICITY PURCHASED THROUGH POWER EXCHANGES, OCTOBER 2015		
Name of the State/UT/Other Regional Entity	Volume of Purchase (MUs)	% of Volume
RAJASTHAN	492.14	15.13
MAHARASHTRA	437.54	13.45
GUJARAT	275.03	8.46
BIHAR	272.41	8.37
WEST BENGAL	265.87	8.17
DELHI	244.80	7.53
HARYANA	164.74	5.06
KERALA	134.83	4.15
PUNJAB	122.07	3.75
DADRA & NAGAR HAVELI	106.87	3.29
ESSAR STEEL	89.69	2.76
UTTAR PRADESH	88.03	2.71
CHHATTISGARH	82.78	2.54
HIMACHAL PRADESH	74.17	2.28
UTTARAKHAND	67.43	2.07
KARNATAKA	48.42	1.49
ANDHRA PRADESH	45.64	1.40
J & K	37.81	1.16
DAMAN AND DIU	37.75	1.16
TELANGANA	37.05	1.14
ASSAM	36.91	1.13
GOA	26.20	0.81
MP	22.39	0.69
MEGHALAYA	16.76	0.52
ODISHA	7.84	0.24
CHANDIGARH	7.81	0.24
TAMIL NADU	6.07	0.19
JHARKHAND	2.35	0.07
MANIPUR	1.04	0.03
TRIPURA	0.20	0.01
MIZORAM	0.15	0.004
Total	3252.79	100.00
Volume of purchase by top 5 Buyers	1742.99	53.58

Table-13: VOLUME OF ELECTRICITY UNDER DRAW (EXPORTED) THROUGH DSM, OCTOBER 2015		
Name of the State/UT/Other Regional Entity	Volume of Under Draw (MUs)	% of Volume
MAHARASHTRA	169.45	10.11
HARYANA	142.99	8.53
NTPC STATIONS (WR)	128.21	7.65
GUJARAT	102.02	6.09
NHPC STATIONS	84.32	5.03
NTPC STATIONS (ER)	73.40	4.38
TAMIL NADU	71.00	4.24
PUNJAB	66.23	3.95
MP	59.84	3.57
BIHAR	58.53	3.49
RAJASTHAN	54.01	3.22
TELANGANA	51.37	3.06
DELHI	45.59	2.72
WEST BENGAL	44.41	2.65
NTPC STATIONS (NR)	40.89	2.44
J & K	40.66	2.43
UTTAR PRADESH	40.47	2.41
ODISHA	25.60	1.53
DVC	23.11	1.38
ANDHRA PRADESH	23.02	1.37
JHARKHAND	19.23	1.15
NTPC STATIONS (SR)	17.36	1.04
ESSAR STEEL	16.92	1.01
KARNATAKA	16.12	0.96
CHHATTISGARH	16.07	0.96
ASSAM	14.25	0.85
NEEPCO STATIONS	13.51	0.81
JITPL	11.34	0.68
UTTARAKHAND	10.50	0.63
CGPL(COASTAL GUJARAT POWER LTD)	10.46	0.62
TEESTA HEP	10.05	0.60
JINDAL POWER	10.01	0.60
NJPC	9.05	0.54
MAITHON POWER LTD	8.22	0.49
HIMACHAL PRADESH	7.57	0.45
STERLITE	7.52	0.45
MEGHALAYA	7.27	0.43
JAYPEE NIGRIE	7.10	0.42
DADRA & NAGAR HAVELI	6.82	0.41
NSPCL	6.67	0.40
TRIPURA	5.61	0.33
GOA	5.39	0.32
KORBA WEST POWER	5.12	0.31
DCPP(DONGA MAHUA CAPTIVE POWER PLANT)	4.91	0.29
KARCHAM WANGTOO	4.69	0.28

URI-2	4.11	0.24
BALCO	4.06	0.24
MB POWER	4.03	0.24
DAMAN AND DIU	4.03	0.24
ADHUNIK POWER LTD	3.92	0.23
CHANDIGARH	3.87	0.23
KSK MAHANADI	3.63	0.22
ACBIL	3.45	0.21
KERALA	3.39	0.20
SIKKIM	3.23	0.19
GMR KAMALANGA	2.94	0.18
COASTGEN	2.85	0.17
THERMAL POWERTECH	2.84	0.17
EMCO	2.77	0.16
DB POWER	2.73	0.16
ARUNACHAL PRADESH	2.64	0.16
NAGALAND	2.61	0.16
PONDICHERRY	2.48	0.15
CHUZACHEN HEP	2.37	0.14
LANKO_AMK	2.05	0.12
MANIPUR	2.00	0.12
MIZORAM	1.94	0.12
SIMHAPURI	1.89	0.11
RANGIT HEP	1.87	0.11
AD HYDRO	1.59	0.10
DAGACHU	1.47	0.09
SHREE CEMENT	1.11	0.07
DGEN MEGA POWER	1.08	0.06
MEENAKSHI	0.80	0.05
LOKTAK	0.58	0.03
LANCO BUDHIL	0.27	0.02
MALANA	0.24	0.01
VANDANA VIDYUT	0.19	0.01
GMR CHHATTISGARH	0.04	0.00
DHARIWAL POWER	0.02	0.00
RGPPL(DABHOL)	0.0043	0.00
ESSAR POWER	0.0001	0.00
Total	1675.97	100.00
Volume of Export by top 5 States	626.99	37.41

Table-14: VOLUME OF ELECTRICITY OVER DRAW (IMPORTED) THROUGH DSM, OCTOBER 2015		
Name of the State/UT/Other Regional Entity	Volume of Over Draw (MUs)	% of Volume
UTTAR PRADESH	179.23	11.58
KARNATAKA	126.19	8.15
NTPC STATIONS (ER)	77.18	4.99
KERALA	73.97	4.78
NTPC STATIONS (NR)	73.93	4.78
ANDHRA PRADESH	59.71	3.86
NTPC STATIONS (WR)	58.71	3.79
RAJASTHAN	55.99	3.62
CHHATTISGARH	52.38	3.38
PUNJAB	51.83	3.35
TAMIL NADU	46.63	3.01
UTTARAKHAND	42.62	2.75
NTPC STATIONS (SR)	39.34	2.54
HIMACHAL PRADESH	38.28	2.47
ASSAM	31.86	2.06
TELANGANA	30.01	1.94
MP	29.89	1.93
WEST BENGAL	26.37	1.70
HARYANA	25.99	1.68
GOA	25.70	1.66
J & K	25.30	1.63
ODISHA	23.26	1.50
GUJARAT	22.82	1.47
STERLITE	20.39	1.32
DVC	19.27	1.25
BIHAR	19.02	1.23
KORBA WEST POWER	18.52	1.20
DELHI	17.91	1.16
ACBIL	16.06	1.04
JHARKHAND	11.33	0.73
MAHARASHTRA	11.29	0.73
ARUNACHAL PRADESH	10.97	0.71
DCPP(DONGA MAHUA CAPTIVE POWER PLANT)	10.48	0.68
CHANDIGARH	10.47	0.68
THERMAL POWERTECH	9.75	0.63
TRIPURA	9.57	0.62
ESSAR STEEL	9.50	0.61
RGPPL(DABHOL)	7.70	0.50
PONDICHERRY	7.15	0.46
GMR CHHATTISGARH	6.89	0.44
NEEPCO STATIONS	6.62	0.43
SHREE CEMENT	6.56	0.42
NHPC STATIONS	6.46	0.42
NAGALAND	6.26	0.40
DAMAN AND DIU	6.12	0.40
CGPL(COASTAL GUJARAT POWER LTD)	5.77	0.37
JINDAL POWER	5.72	0.37

MANIPUR	5.64	0.36
SIKKIM	4.34	0.28
MAITHON POWER LTD	4.08	0.26
COASTGEN	3.96	0.26
GMR KAMALANGA	3.89	0.25
ADHUNIK POWER LTD	3.81	0.25
NJPC	3.66	0.24
MB POWER	3.62	0.23
MEGHALAYA	3.50	0.23
BALCO	3.47	0.22
NSPCL	3.34	0.22
KARCHAM WANGTOO	3.25	0.21
JITPL	2.99	0.19
DADRA & NAGAR HAVELI	2.49	0.16
MIZORAM	2.16	0.14
JAYPEE NIGRIE	2.09	0.13
DB POWER	1.91	0.12
DAGACHU	1.52	0.10
DGEN MEGA POWER	1.41	0.09
EMCO	1.30	0.08
CHUZACHEN HEP	1.28	0.08
ESSAR POWER	1.17	0.08
SIMHAPURI	1.11	0.07
DHARIWAL POWER	1.09	0.07
MEENAKSHI	1.03	0.07
URI-2	0.62	0.04
MALANA	0.49	0.03
RANGIT HEP	0.41	0.03
LOKTAK	0.36	0.02
KSK MAHANADI	0.31	0.02
AD HYDRO	0.23	0.01
LANCO BUDHIL	0.18	0.01
LANKO_AMK	0.13	0.01
TEESTA HEP	0.08	0.01
Total	1547.93	100.00
Volume of Import by top 5 States	530.50	34.27

Table-15: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY-WISE), OCTOBER 2015		
Sr.No.	Name of the State/UT/Other Regional Entity	Total volume of net short-term transactions of electricity*
1	TELANGANA	1121.01
2	WEST BENGAL	698.35
3	BIHAR	636.43
4	MAHARASHTRA	537.65
5	ANDHRA PRADESH	404.27
6	UTTAR PRADESH	388.92
7	RAJASTHAN	347.22
8	CHHATTISGARH	280.85
9	KERALA	269.47
10	UTTARAKHAND	216.81
11	DELHI	126.99
12	DADRA & NAGAR HAVELI	102.54
13	ESSAR STEEL	102.32
14	ASSAM	100.03
15	JHARKHAND	89.99
16	GUJARAT	89.17
17	J & K	57.96
18	MP	55.23
19	GOA	45.15
20	DAMAN AND DIU	39.84
21	NTPC STATIONS (NR)	33.04
22	NTPC STATIONS (SR)	21.98
23	KARNATAKA	13.59
24	CHANDIGARH	9.53
25	ARUNACHAL PRADESH	8.34
26	RGPPL(DABHOL)	7.70
27	GMR CHHATTISGARH	6.85
28	PONDICHERRY	4.68
29	NTPC STATIONS (ER)	3.78
30	NAGALAND	2.65
31	ODISHA	1.61
32	ESSAR POWER	1.17
33	COASTGEN	1.11
34	DHARIWAL POWER	0.73
35	DGEN MEGA POWER	0.33
36	VANDANA VIDYUT	-0.19
37	LOKTAK	-0.22
38	MB POWER	-0.41
39	RANGIT HEP	-1.46
40	MALANA	-1.53
41	LANKO_AMK	-1.92
42	KSK MAHANADI	-3.33
43	URI-2	-3.48
44	CGPL(COASTAL GUJARAT POWER LTD)	-4.69
45	NEEPCO STATIONS	-6.89
46	BALCO	-6.93

47	JAYPEE NIGRIE	-7.27
48	MIZORAM	-7.96
49	TEESTA HEP	-9.97
50	LANCO BUDHIL	-13.85
51	NJPC	-15.12
52	TAMIL NADU	-15.37
53	MANIPUR	-18.29
54	MEGHALAYA	-18.92
55	NSPCL	-23.23
56	SPECTRUM	-24.04
57	JORETHANG	-26.00
58	AD HYDRO	-31.62
59	ACBIL	-35.83
60	HIMACHAL PRADESH	-36.63
61	EMCO	-39.14
62	CHUZACHEN HEP	-39.85
63	DAGACHU	-50.76
64	SIKKIM	-57.25
65	TRIPURA	-64.77
66	NTPC STATIONS (WR)	-69.50
67	MAITHON POWER LTD	-73.30
68	MARUTI COAL	-75.83
69	DCPP(DONGA MAHUA CAPTIVE POWER PLANT)	-84.15
70	DVC	-86.44
71	NHPC STATIONS	-100.61
72	PUNJAB	-100.66
73	LANKO KONDAPALLI	-119.31
74	KARCHAM WANGTOO	-129.78
75	JINDAL STAGE-II	-139.74
76	MEENAKSHI	-163.14
77	DB POWER	-171.06
78	HARYANA	-177.86
79	SHREE CEMENT	-180.41
80	ADHUNIK POWER LTD	-200.16
81	KORBA WEST POWER	-264.41
82	JINDAL POWER	-317.55
83	STERLITE	-337.85
84	SIMHAPURI	-368.92
85	GMR KAMALANGA	-372.45
86	JITPL	-533.78
87	THERMAL POWERTECH	-788.95
* 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		

Table-16: DETAILS OF CONGESTION IN POWER EXCHANGES, OCTOBER 2015			
	Details of Congestion	IEX	PXIL
A	Unconstrained Cleared Volume* (MUs)	3409.69	7.54
B	Actual Cleared Volume and hence scheduled (MUs)	3245.87	6.92
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	163.82	0.62
D	Volume of electricity that could not be cleared as % to Unconstrained Cleared Volume	4.80%	8.22%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	79.77%	48.92%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	12.09%	0.00%
	6.00 - 12.00 hours	30.67%	35.16%
	12.00 - 18.00 hours	29.78%	33.52%
	18.00 - 24.00 hours	27.46%	31.32%
<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 (MUs) (DAY-WISE), OCTOBER 2015						
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-15	52.00	81.75	121.77	0.08	62.10	3219.35
2-Oct-15	53.38	72.04	109.61	0.23	58.98	3155.00
3-Oct-15	58.15	81.67	105.89	0.27	57.19	3129.48
4-Oct-15	54.28	64.58	93.17	0.25	63.06	3059.60
5-Oct-15	58.77	77.46	104.38	0.26	64.75	3165.90
6-Oct-15	60.37	77.00	114.63	0.25	61.56	3219.50
7-Oct-15	58.43	75.72	110.76	0.20	60.12	3266.90
8-Oct-15	58.19	81.41	112.52	0.26	55.83	3291.00
9-Oct-15	55.35	86.89	109.53	0.27	53.62	3290.00
10-Oct-15	57.96	84.92	104.30	0.27	52.09	3261.80
11-Oct-15	49.96	82.31	89.81	0.25	54.15	3180.77
12-Oct-15	54.74	85.65	91.58	0.27	55.09	3236.52
13-Oct-15	54.14	89.27	101.77	0.09	64.24	3288.00
14-Oct-15	54.61	90.32	115.82	0.08	57.04	3273.34
15-Oct-15	56.75	89.34	111.52	0.08	52.15	3263.29
16-Oct-15	69.11	91.86	105.79	0.22	57.06	3276.70
17-Oct-15	72.37	91.77	112.37	0.24	53.24	3286.37
18-Oct-15	77.07	77.98	103.76	0.22	48.37	3212.10
19-Oct-15	76.45	80.43	107.96	0.24	51.66	3291.00
20-Oct-15	78.35	90.02	113.50	0.22	53.23	3317.80
21-Oct-15	75.88	91.75	117.72	0.17	55.90	3288.50
22-Oct-15	72.69	82.29	98.64	0.16	54.20	3140.70
23-Oct-15	71.05	88.89	96.13	0.21	50.54	3138.80
24-Oct-15	71.90	85.95	107.97	0.20	53.47	3133.20
25-Oct-15	74.52	83.16	96.01	0.21	46.74	3077.00
26-Oct-15	78.23	87.86	108.15	0.24	53.97	3079.87
27-Oct-15	77.69	84.95	102.58	0.22	54.34	3130.80
28-Oct-15	71.03	73.76	105.97	0.63	61.62	3009.07
29-Oct-15	70.34	72.78	101.26	0.23	60.67	2936.70
30-Oct-15	70.74	76.01	92.65	0.17	55.80	2926.36
31-Oct-15	70.83	75.39	78.33	0.23	56.27	2917.00
Total	2015.34	2555.16	3245.87	6.92	1739.07	98462.42

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.

Table-18: PRICE OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (₹/kWh), OCTOBER 2015 (DAY-WISE)									
Market Segment	Day ahead market of IEX			Day ahead market of PXIL			Under Drawl/Over Draw from the Grid (DSM)		
Date	Minimum ACP	Maximum ACP	Weighted Average Price*	Minimum ACP	Maximum ACP	Weighted Average Price*	All India Grid		
							Mini-mum Price	Maximum Price	Average Price**
1-Oct-15	1.19	9.01	3.24	3.80	3.80	3.80	0.00	5.95	2.38
2-Oct-15	2.20	5.01	3.07	3.15	3.15	3.15	0.00	4.91	1.71
3-Oct-15	2.45	7.01	3.32	2.40	3.63	3.10	0.00	5.32	2.07
4-Oct-15	1.97	6.01	2.96	2.65	3.86	3.30	0.00	3.45	1.63
5-Oct-15	2.00	7.01	3.16	2.44	3.63	3.10	0.00	6.36	2.21
6-Oct-15	1.10	6.51	3.08	2.30	3.36	3.19	0.00	3.45	2.02
7-Oct-15	1.73	8.01	3.17	1.29	3.55	3.10	0.00	5.32	2.24
8-Oct-15	2.45	6.01	3.21	2.27	3.51	3.20	0.00	6.36	2.37
9-Oct-15	0.72	8.01	2.62	2.61	3.57	3.20	0.00	6.36	2.30
10-Oct-15	2.28	8.02	2.96	0.72	3.90	2.99	0.00	5.74	1.90
11-Oct-15	2.09	8.56	2.95	2.35	3.27	2.87	0.00	4.91	1.96
12-Oct-15	2.45	8.20	3.48	2.60	3.30	2.99	0.00	5.95	2.38
13-Oct-15	2.45	9.02	3.56	3.50	3.50	3.50	0.71	7.20	3.51
14-Oct-15	2.45	5.00	3.29	3.65	3.65	3.65	0.00	3.45	1.72
15-Oct-15	0.90	9.01	3.19	3.65	3.65	3.65	0.00	5.11	1.92
16-Oct-15	1.80	9.01	3.03	3.20	3.20	3.20	0.71	5.95	2.90
17-Oct-15	2.45	6.26	3.08	2.99	2.99	2.99	0.00	7.82	3.30
18-Oct-15	2.15	8.01	2.98	2.95	2.95	2.95	0.00	4.91	2.18
19-Oct-15	1.80	9.01	3.03	2.95	2.95	2.95	0.00	5.32	2.03
20-Oct-15	2.45	9.02	3.14	3.00	3.00	3.00	0.00	5.11	1.80
21-Oct-15	0.80	8.01	3.02	3.00	3.00	3.00	0.00	5.32	1.98
22-Oct-15	0.70	8.01	2.67	2.85	2.85	2.85	0.00	3.45	1.40
23-Oct-15	1.15	12.00	2.89	2.60	2.60	2.60	0.00	3.45	1.60
24-Oct-15	2.38	9.01	3.07	2.80	2.80	2.80	0.00	3.45	1.61
25-Oct-15	2.15	8.01	2.86	2.90	2.90	2.90	0.00	5.32	2.02
26-Oct-15	2.27	8.01	2.95	2.90	2.90	2.90	0.00	4.91	1.76
27-Oct-15	2.15	6.53	2.92	2.95	2.95	2.95	0.00	5.95	2.02
28-Oct-15	1.99	7.01	2.91	2.20	3.20	3.15	0.00	5.95	1.53
29-Oct-15	1.00	7.01	2.82	2.75	2.75	2.75	0.00	4.91	1.61
30-Oct-15	1.44	7.01	2.73	2.70	2.70	2.70	0.00	3.45	1.65
31-Oct-15	1.73	7.01	2.60	2.60	2.60	2.60	0.00	3.45	1.81
	0.70#	12.00#	3.04	0.72#	3.90#	3.03	0.00#	7.82#	2.05

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 2015

Name of the State/UT/Other Regional Entity	Through Bilateral			Through Power Exchange			Through DSM with Regional Grid			Total Net***
	Sale	Pur- chase	Net**	Sale	Pur- chase	Net**	Import (Over Drawl)	Export (Under Drawl)	Net**	
PUNJAB	216.00	7.68	-208.32	0.00	122.07	122.07	51.83	66.23	-14.40	-100.66
HARYANA	311.71	138.31	-173.40	52.19	164.74	112.55	25.99	142.99	117.00	-177.86
RAJASTHAN	138.32	42.74	-95.58	51.32	492.14	440.82	55.99	54.01	1.98	347.22
DELHI	102.54	34.66	-67.88	22.25	244.80	222.54	17.91	45.59	-27.68	126.99
UTTAR PRADESH	33.60	195.71	162.11	0.00	88.03	88.03	179.23	40.47	138.77	388.92
UTTARAKHAND	1.82	129.60	127.78	10.52	67.43	56.91	42.62	10.50	32.12	216.81
HIMACHAL PRADESH	38.11	40.94	2.83	144.34	74.17	-70.17	38.28	7.57	30.71	-36.63
J & K	30.86	85.58	54.72	19.22	37.81	18.60	25.30	40.66	-15.36	57.96
CHANDIGARH	0.00	0.00	0.00	4.88	7.81	2.93	10.47	3.87	6.60	9.53
MP	26.40	141.60	115.20	52.41	22.39	-30.02	29.89	59.84	-29.95	55.23
MAHARASHTRA	0.00	278.19	278.19	19.92	437.54	417.62	11.29	169.45	158.16	537.65
GUJARAT	192.38	338.75	146.37	253.03	275.03	22.00	22.82	102.02	-79.20	89.17
CHHATTISGARH	0.00	230.92	230.92	69.16	82.78	13.62	52.38	16.07	36.32	280.85
DAMAN AND DIU	0.00	0.00	0.00	0.00	37.75	37.75	6.12	4.03	2.08	39.84
DADRA & NAGAR HAVELI	0.00	0.00	0.00	0.00	106.87	106.87	2.49	6.82	-4.33	102.54
ANDHRA PRADESH	93.97	421.02	327.06	5.12	45.64	40.52	59.71	23.02	36.69	404.27
KARNATAKA	144.89	0.00	-144.89	0.00	48.42	48.42	126.19	16.12	110.06	13.59
KERALA	0.00	67.00	67.00	2.94	134.83	131.89	73.97	3.39	70.59	269.47
TAMIL NADU	0.00	2.93	2.93	0.00	6.07	6.07	46.63	71.00	-24.37	-15.37
PONDICHERRY	0.00	0.00	0.00	0.00	0.00	0.00	7.15	2.48	4.68	4.68
GOA	0.00	3.72	3.72	5.08	26.20	21.12	25.70	5.39	20.31	45.15
TELANGANA	17.60	1164.56	1146.96	41.64	37.05	-4.60	30.01	51.37	-21.35	1121.01
WEST BENGAL	5.59	503.33	497.74	47.22	265.87	218.65	26.37	44.41	-18.03	698.35
ODISHA	24.53	124.93	100.40	104.28	7.84	-96.45	23.26	25.60	-2.34	1.61
BIHAR	0.00	403.52	403.52	0.00	272.41	272.41	19.02	58.53	-39.50	636.43
JHARKHAND	0.00	95.54	95.54	0.00	2.35	2.35	11.33	19.23	-7.90	89.99
SIKKIM	0.00	0.00	0.00	58.36	0.00	-58.36	4.34	3.23	1.11	-57.25
DVC	73.69	0.00	-73.69	8.91	0.00	-8.91	19.27	23.11	-3.84	-86.44
ARUNACHAL PRADESH	0.00	0.00	0.00	0.00	0.00	0.00	10.97	2.64	8.34	8.34
ASSAM	5.23	88.22	82.99	37.48	36.91	-0.57	31.86	14.25	17.61	100.03
MANIPUR	9.47	0.00	-9.47	13.50	1.04	-12.47	5.64	2.00	3.64	-18.29
MEGHALAYA	29.43	9.60	-19.83	12.09	16.76	4.68	3.50	7.27	-3.77	-18.92
MIZORAM	0.00	0.00	0.00	8.33	0.15	-8.18	2.16	1.94	0.22	-7.96
NAGALAND	0.00	0.00	0.00	1.00	0.00	-1.00	6.26	2.61	3.64	2.65
TRIPURA	4.75	1.40	-3.35	65.59	0.20	-65.39	9.57	5.61	3.96	-64.77
NTPC STATIONS (NR)	0.00	0.00	0.00	0.00	0.00	0.00	73.93	40.89	33.04	33.04

NHPC STATIONS	0.00	0.00	0.00	22.75	0.00	-22.75	6.46	84.32	-77.86	-100.61
NJPC	0.00	0.00	0.00	9.73	0.00	-9.73	3.66	9.05	-5.39	-15.12
AD HYDRO	0.95	0.00	-0.95	29.30	0.00	-29.30	0.23	1.59	-1.37	-31.62
KARCHAM WANGTOO	0.96	0.00	-0.96	127.38	0.00	-127.38	3.25	4.69	-1.44	-129.78
SHREE CEMENT	133.77	0.00	-133.77	52.08	0.00	-52.08	6.56	1.11	5.45	-180.41
LANCO BUDHIL	0.07	0.00	-0.07	13.70	0.00	-13.70	0.18	0.27	-0.09	-13.85
MALANA	0.00	0.00	0.00	1.78	0.00	-1.78	0.49	0.24	0.25	-1.53
URI-2	0.00	0.00	0.00	0.00	0.00	0.00	0.62	4.11	-3.48	-3.48
NTPC STATIONS (WR)	0.00	0.00	0.00	0.00	0.00	0.00	58.71	128.21	-69.50	-69.50
JINDAL POWER	50.08	0.00	-50.08	263.18	0.00	-263.18	5.72	10.01	-4.29	-317.55
LANKO_AMK	0.00	0.00	0.00	0.00	0.00	0.00	0.13	2.05	-1.92	-1.92
NSPCL	19.90	0.00	-19.90	0.00	0.00	0.00	3.34	6.67	-3.33	-23.23
ACBIL	7.61	0.00	-7.61	40.83	0.00	-40.83	16.06	3.45	12.61	-35.83
BALCO	0.00	0.00	0.00	6.33	0.00	-6.33	3.47	4.06	-0.60	-6.93
RGPPL(DABHOL)	0.00	0.00	0.00	0.00	0.00	0.00	7.70	0.00	7.70	7.70
CGPL(COASTAL GUJARAT POWER LTD)	0.00	0.00	0.00	0.00	0.00	0.00	5.77	10.46	-4.69	-4.69
DCPP(DONGA MAHUA CAPTIVE POWER PLANT)	0.00	0.00	0.00	89.72	0.00	-89.72	10.48	4.91	5.57	-84.15
EMCO	11.61	0.00	-11.61	26.06	0.00	-26.06	1.30	2.77	-1.47	-39.14
VANDANA VIDYUT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	-0.19	-0.19
ESSAR STEEL	0.00	20.06	20.06	0.00	89.69	89.69	9.50	16.92	-7.43	102.32
KSK MAHANADI	0.00	0.00	0.00	0.00	0.00	0.00	0.31	3.63	-3.33	-3.33
ESSAR POWER	0.00	0.00	0.00	0.00	0.00	0.00	1.17	0.00	1.17	1.17
JINDAL STAGE-II	56.59	0.00	-56.59	83.15	0.00	-83.15	0.00	0.00	0.00	-139.74
DB POWER	88.21	0.00	-88.21	82.04	0.00	-82.04	1.91	2.73	-0.81	-171.06
DHARIWAL POWER	0.00	0.00	0.00	0.34	0.00	-0.34	1.09	0.02	1.07	0.73
JAYPEE NIGRIE	0.00	0.00	0.00	2.26	0.00	-2.26	2.09	7.10	-5.01	-7.27
DGEN MEGA POWER	0.00	0.00	0.00	0.00	0.00	0.00	1.41	1.08	0.33	0.33
GMR CHHATTISGARH	0.00	0.00	0.00	0.00	0.00	0.00	6.89	0.04	6.85	6.85
KORBA WEST POWER	51.00	0.00	-51.00	226.82	0.00	-226.82	18.52	5.12	13.40	-264.41
MB POWER	0.00	0.00	0.00	0.00	0.00	0.00	3.62	4.03	-0.41	-0.41
MARUTI COAL	0.00	0.00	0.00	75.83	0.00	-75.83	0.00	0.00	0.00	-75.83
SPECTRUM	0.00	0.00	0.00	24.04	0.00	-24.04	0.00	0.00	0.00	-24.04
NTPC STATIONS (SR)	0.00	0.00	0.00	0.00	0.00	0.00	39.34	17.36	21.98	21.98
LANKO KONDAPALLI	119.31	0.00	-119.31	0.00	0.00	0.00	0.00	0.00	0.00	-119.31
SIMHAPURI	357.35	0.00	-357.35	10.79	0.00	-10.79	1.11	1.89	-0.78	-368.92
MEENAKSHI	143.53	0.00	-143.53	19.84	0.00	-19.84	1.03	0.80	0.23	-163.14
COASTGEN	0.00	0.00	0.00	0.00	0.00	0.00	3.96	2.85	1.11	1.11
THERMAL POWERTECH	714.10	0.00	-714.10	81.76	0.00	-81.76	9.75	2.84	6.91	-788.95
NTPC STATIONS (ER)	0.00	0.00	0.00	0.00	0.00	0.00	77.18	73.40	3.78	3.78
STERLITE	55.30	0.00	-55.30	295.42	0.00	-295.42	20.39	7.52	12.87	-337.85
MAITHON POWER LTD	5.98	0.00	-5.98	63.17	0.00	-63.17	4.08	8.22	-4.15	-73.30
ADHUNIK POWER LTD	90.83	0.00	-90.83	109.22	0.00	-109.22	3.81	3.92	-0.11	-200.16

CHUZACHEN HEP	0.00	0.00	0.00	38.76	0.00	-38.76	1.28	2.37	-1.09	-39.85
RANGIT HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.41	1.87	-1.46	-1.46
GMR KAMALANGA	265.06	0.00	-265.06	108.33	0.00	-108.33	3.89	2.94	0.95	-372.45
JITPL	314.02	0.00	-314.02	211.41	0.00	-211.41	2.99	11.34	-8.34	-533.78
TEESTA HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.08	10.05	-9.97	-9.97
DAGACHU	50.81	0.00	-50.81	0.00	0.00	0.00	1.52	1.47	0.05	-50.76
JORETHANG	0.00	0.00	0.00	26.00	0.00	-26.00	0.00	0.00	0.00	-26.00
NEEPCO STATIONS	0.00	0.00	0.00	0.00	0.00	0.00	6.62	13.51	-6.89	-6.89
LOKTAK	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.58	-0.22	-0.22

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, 2015

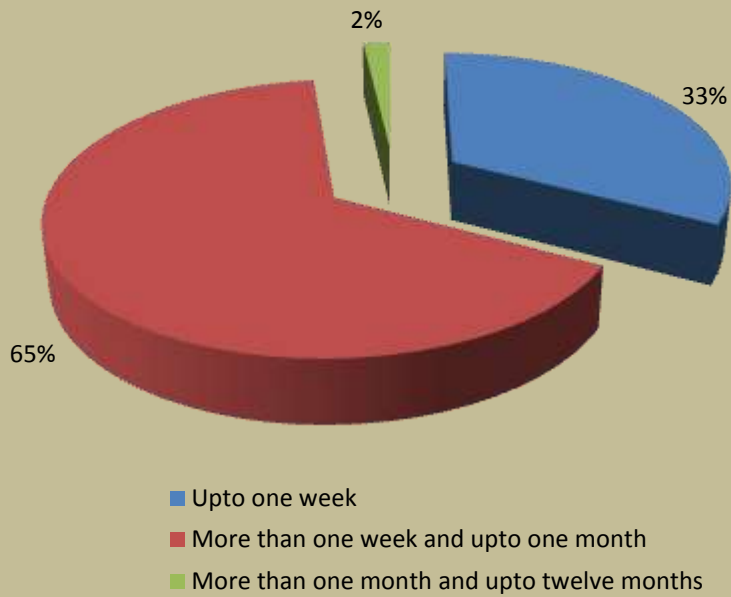
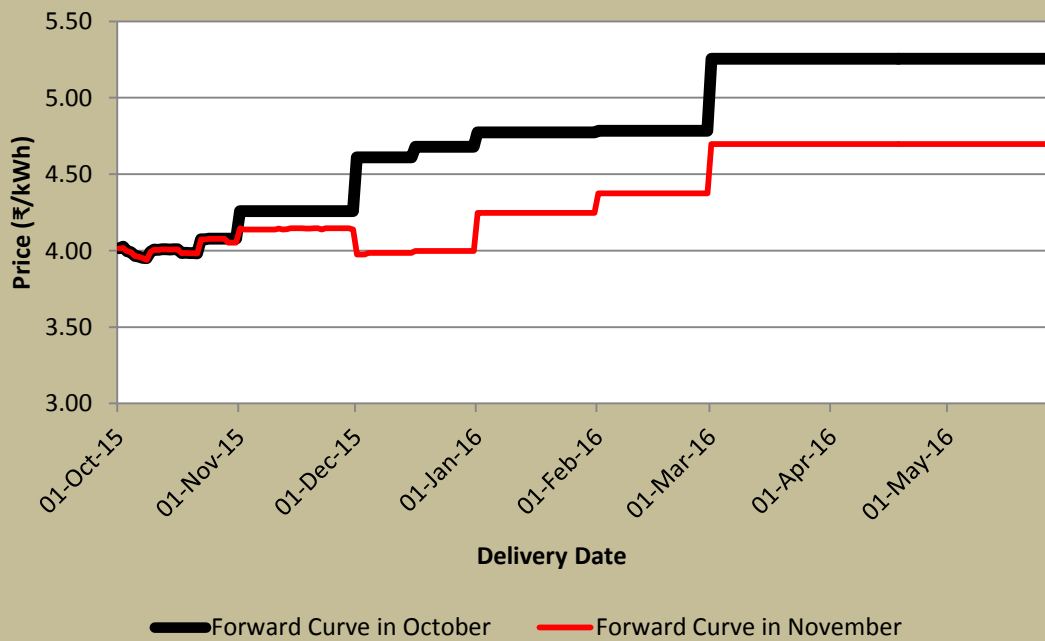


Figure-8: Forward Curve based on Prices of Bilateral Contracts



**Table-20 : VOLUME AND PRICE OF RENEWABLE ENERGY CERTIFICATES (RECs)
TRANSACTIONED THROUGH POWER EXCHANGES, OCTOBER 2015**

Sr.No.	Details of REC Transactions	IEX		PXIL	
		Solar	Non-Solar	Solar	Non Solar
A	Volume of Buy Bid	11945	68663	1906	142779
B	Volume of Sell Bid	2221069	7325684	577054	6363552
C	Ratio of Buy Bid to Sell Bid Volume	0.005	0.009	0.003	0.022
D	Market Clearing Volume (MWh)	11945	68663	1906	142779
E	Market Clearing Price (₹/MWh)	3500	1500	3500	1500

Source: IEX and PXIL

Note 1: 1 REC = 1 MWh

Note 2:

<i>Forbearance and Floor Price w.e.f 1st March 2015</i>		
Type of REC	<i>Floor Price (₹MWh)</i>	<i>Forbearance Price (₹MWh)</i>
<i>Solar</i>	<i>3500.00</i>	<i>5800.00</i>
<i>Non-Solar</i>	<i>1500.00</i>	<i>3300.00</i>