

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

September, 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
ONGC PALATANA	Oil and Natural Gas Corporation, Palatana
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 analysis of the report for the month of **September, 2015** is as under:

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

During September 2015, total electricity generation excluding generation from renewable and captive power plants in India was 95163.70 MUs (Table-1).

Of the total electricity generation, 10777.84 MUs (11.33%) was transacted through short-term, comprising of 5814.67 MUs (6.11%) through bilateral (through traders and term-ahead contracts on power exchanges and directly between distribution companies), followed by 3195.17 MUs (3.36%) through day ahead collective transactions on power exchanges (IEX and PXIL) and 1768.00 MUs (1.86%) through DSM (Table-1 & Figure-2).

Of the total short-term transactions, bilateral constitutes 53.95% (31.37% through traders and term-ahead contracts on power exchanges and 22.58% directly between distribution companies) followed by 29.65% through day ahead collective transactions on power exchanges and 16.40% 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 43 trading licensees as on September, 2015. In September 2015, 20 trading licensees were engaged in short term trading. Top 5 trading licensees had a share of 71.51% in the total volume traded by all the licensees. These are PTC India Ltd., Tata Power Trading Company (P) Ltd., Mittal Processors (P) Ltd., Manikaran Power Ltd. and GMR Energy Trading 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 0.1368 for the month of September 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 3188.40 MUs and 6.77 MUs respectively. The volume of total buy bids and sale bids was 4861.38 MUs and 3953.37 MUs respectively in IEX while the same was 31.58 MUs and 10.75 MUs respectively in PXIL. The gap between the volume of buy bids and sale bids placed through power exchanges shows that there was high demand in IEX (1.23 times) and in PXIL (2.94 times) when compared with the supply bids offered through these exchanges.

The volume of electricity transacted through IEX and PXIL in the term-ahead market was 38.96 MUs and 62.36 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 ₹2.67/kWh, ₹7.99/kWh and ₹4.06/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 ₹4.35/kWh, ₹3.61/kWh and ₹3.30/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 ₹1.10/kWh, ₹14.51/kWh and ₹3.65/kWh respectively in IEX and ₹1.52/kWh, ₹6.00/kWh and ₹3.56/kWh respectively in PXIL (Table-5).

The price of electricity transacted through IEX and PXIL in the term-ahead market was ₹4.10/kWh and ₹3.25/kWh respectively (Table-6 and Table-7).

**(iii) Price of electricity transacted through DSM:** The average deviation price was ₹2.80/kWh for all India grid. The minimum and maximum deviation prices were ₹0.00/kWh and ₹8.24/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 Entity<sup>1</sup>-Wise)**

Of the total bilateral transactions, top 5 regional entities sold 38.44% of the volume, and these were Rajasthan, Thermal Powertech Corporation India Ltd, Himachal Pradesh, Madhya Pradesh and Jammu & Kashmir. Top 5 regional entities purchased 64.54% of the volume, and these were Telangana, Haryana, West Bengal, Punjab and Gujarat (Table-9 & 10).

Of the total power exchange transactions, top 5 regional entities sold 34.15% of the volume, and these were Sterlite Energy Ltd, Gujarat, Jaypee Karcham Hydro Corporation Ltd., Himachal Pradesh and Jindal India Thermal Power Limited. Top 5 regional entities purchased 52.69% of the volume, and these were Rajasthan, West Bengal, Bihar, Gujarat, and Uttarakhand (Table-11 & 12).

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



Of the total DSM transactions, top 5 regional entities underdrew 36.59% of the volume, and these were National Thermal Power Corporation Stations (Western Region), Maharashtra, Gujarat, Madhya Pradesh and Haryana (Table-13). Top 5 regional entities overdrew 34.51% of the volume, and these were Uttar Pradesh, Karnataka, National Thermal Power Stations (Eastern Region), Andhra Pradesh and Tamil Nadu (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 Himachal Pradesh, Madhya Pradesh, Thermal Powertech Corporation India Ltd, Jindal India Thermal Power Ltd and Sterlite Energy Ltd. Top 5 electricity purchasing regional entities were Telangana, Haryana, West Bengal, Bihar and Uttar Pradesh.

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

Power Exchanges use a price discovery mechanism in which the aggregate demand and supply are matched to arrive at an unconstrained market price and volume. This step assumes that there is no congestion in the inter-State transmission system between different regions. However, in reality, the system operator (NLDC) in coordination with RLDCs, limits the flow (due to congestion) in the inter-State transmission system. In such a situation, power exchanges adopt a mechanism called “Market Splitting”<sup>3</sup>.

In the month of September 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

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

<sup>3</sup> “Market Splitting” is a mechanism adopted by Power Exchange where the market is split in the event of transmission congestion, into predetermined ( by NLDC) bid areas or zones, which are cleared individually at their respective area prices such that the energy balance in every bid area is reached based upon the demand and supply in individual bid areas and using the available transmission corridor capacity between various bid areas simultaneously”

As a result of this market splitting the price of electricity in the importing region, where demand for electricity is more than supply, becomes relatively higher than the price of electricity in the exporting region.

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 4.41% and -2.24% of the unconstrained cleared volume respectively. In terms of time, congestion occurred was 83.78% in IEX and 43.02% in PXIL (Table-16).

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

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

**(i) Duration of bilateral contracts:** During October, 2015, a total of 112 bilateral contracts (excluding banking/swap contracts) have been executed by traders for the volume of 904.21 MUs. Figure-7 shows the percentage of contracts categorized according to the period of power supply. It can be observed from the figure that 70% of the bilateral contracts were executed for duration of up to one week, 25% of the contracts were executed for duration of more than a week and upto one month and the rest 5% of the contracts were executed for duration of more than one month.

During the month, 44 banking/swapping bilateral contracts were also executed for the volume of 1540.47 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 October, 2015 to May, 2016 based on bilateral contracts<sup>4</sup> executed till October, 2015. Forward curves have been drawn for the contracts executed in October, 2015 and September,

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

2015 for the purpose of comparison. It is observed that the forward prices from December, 2015 to March, 2016 were lower for the contracts executed in October, 2015 compared to the contracts executed in September, 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 September, 2015 are shown in Table-20. The market clearing volume of solar RECs transacted on IEX and PXIL were 8630 and 1390 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 147805 and 35794 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 0.002 for IEX and PXIL respectively. For non-solar RECs, the ratio of buy bids to sell bids was 0.02 for IEX and 0.01 for PXIL.

## VII: Inferences:

- The percentage of short-term transactions of electricity to total electricity generation was 11.33%.
- Of the total short-term transactions of electricity, 53.95% was transacted through bilateral (through traders and term ahead contracts on power exchanges and directly by distribution companies), followed by 29.65% through power exchanges and 16.40% through DSM.
- Top 5 trading licensees had a share of 71.51 % 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 0.1368, indicating non-concentration of market power.
- The weighted average price of electricity transacted through trading licensees was ₹4.06/kWh. The weighted average prices of electricity transacted through IEX and PXIL were ₹3.65/kWh and ₹3.56/kWh respectively.
- The average price of electricity transacted through DSM was ₹2.80/kWh
- The gap between the volume of buy bids and sale bids placed through power exchanges indicates that there was high demand in IEX (1.00 : 1.23) and in PXIL (1:00 : 2.94) when compared with the supply bids offered through these exchanges.
- Top 5 electricity selling regional entities were Himachal Pradesh, Madhya Pradesh, Thermal Powertech Corporation India Ltd, Jindal India Thermal Power Ltd and Sterlite Energy Ltd. Top 5 electricity purchasing regional entities were Telangana, Haryana, West Bengal, Bihar and Uttar Pradesh.
- The volume of electricity that could not be cleared due to congestion was 4.41% and (-) 2.24% of the unconstrained cleared volume for IEX and PXIL, respectively. In terms of time, congestion occurred for 83.78% of the time in IEX and 43.02% of the time in PXIL.
- In October 2015, 70% of the bilateral contracts were executed for a duration of up to one week, 25% of the contracts were executed for a duration of more than a week and upto

one month and the rest 5% of the contracts were executed for a duration of more than one month.

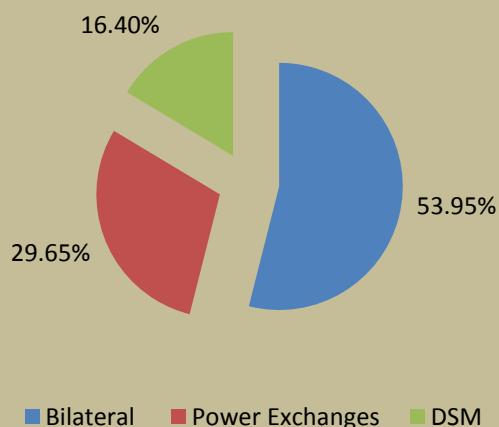
- The forward prices from December, 2015 to March, 2016 were lower for the contracts executed in October, 2015 compared to the contracts executed in September, 2015.
- The market clearing volume of solar RECs transacted on IEX and PXIL were 8630 and 1390 respectively and the market clearing price of these RECs was ₹3500/MWh on both the power exchanges. Market clearing volume of non-solar RECs transacted on IEX and PXIL were 147805 and 35794 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), SEPTEMBER 2015**

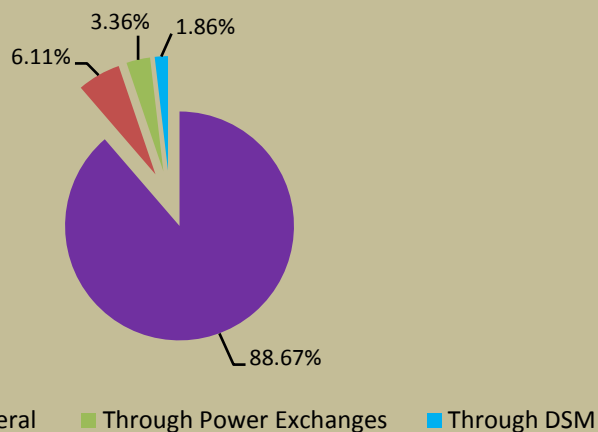
Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	5814.67	53.95	6.11
	(i) Through Traders and PXs	3380.95	31.37	3.55
	(ii) Direct	2433.72	22.58	2.56
2	Through Power Exchanges	3195.17	29.65	3.36
	(i) IEX	3188.40	29.58	3.35
	(ii) PXIL	6.77	0.06	0.01
3	Through DSM	1768.00	16.40	1.86
	<b>Total</b>	<b>10777.84</b>	<b>-</b>	<b>11.33</b>
	<b>Total Generation</b>	<b>95163.70</b>	<b>-</b>	<b>-</b>

Source: NLDC

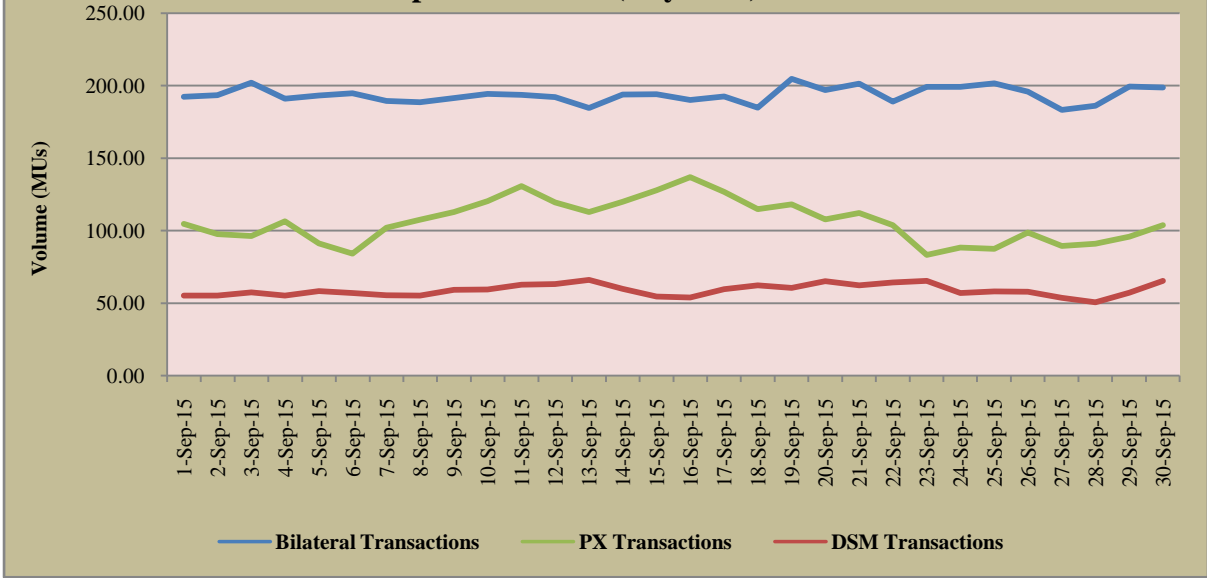
**Figure-1: Volume of Short-term Transactions of Electricity, September 2015**



**Figure-2: Volume of Various Kinds of Electricity Transactions in Total Electricity Generation, September 2015**



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



**Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, SEPTEMBER 2015**

Sr.No	Name of the Trading Licensee	% Share in total Volume transacted by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd.	27.57%	0.0760
2	Tata Power Trading Company (P) Ltd.	12.77%	0.0163
3	Mittal Processors (P) Ltd.	11.10%	0.0123
4	Manikaran Power Ltd.	10.08%	0.0102
5	GMR Energy Trading Ltd.	10.00%	0.0100
6	JSW Power Trading Company Ltd	7.42%	0.0055
7	Adani Enterprises Ltd.	4.94%	0.0024
8	Shree Cement Ltd.	3.90%	0.0015
9	NTPC Vidyut Vyapar Nigam Ltd.	3.45%	0.0012
10	Knowledge Infrastructure Systems (P) Ltd	2.68%	0.0007
11	Jaiprakash Associates Ltd.	1.33%	0.0002
12	Arunachal Pradesh Power Corporation (P) ltd	1.21%	0.0001
13	Instinct Infra & Power Ltd.	1.14%	0.0001
14	RPG Power Trading Company Ltd.	0.90%	0.0001
15	SN Power Markets Pvt. Ltd.	0.79%	0.0001
16	My Home Power Private Ltd.	0.28%	0.0000
17	National Energy Trading & Services Ltd.	0.17%	0.0000
18	Essar Electric Power Development Corp. Ltd.	0.15%	0.0000
19	Ambitious Power Trading Company Ltd.	0.07%	0.0000
20	Customized Energy Solutions India (P) Ltd.	0.06%	0.0000
<b>TOTAL</b>		<b>100.00%</b>	<b>0.1368</b>
<b>Top 5 trading licensees</b>		<b>71.51%</b>	

*Note 1: Volume of electricity transacted by the trading licensees includes bilateral transactions (inter-state & intra-state) and the transactions undertaken through power exchanges.*

*Note 2: Volume of electricity transacted by Global Energy Ltd is not included.*

*Source: Information submitted by trading licensees*

**Figure- 4 : Percentage Share of Electricity Transacted by Trading Licensees, September 2015**

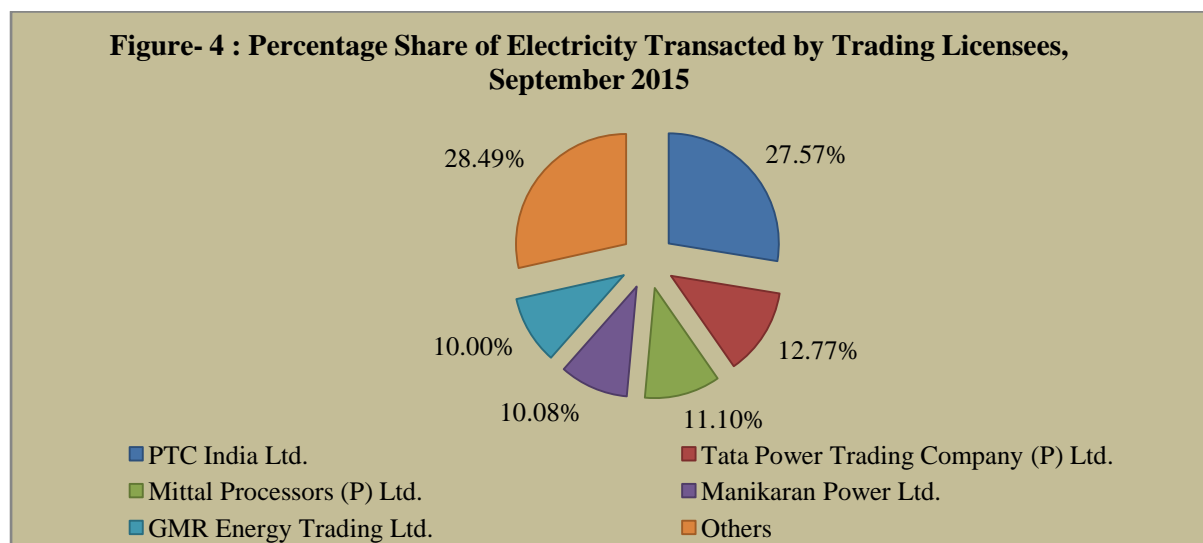




Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, SEPTEMBER 2015		
Sr.No		Sale Price of Traders (₹/kWh)
1	Minimum	2.67
2	Maximum	7.99
3	Weighted Average	4.06

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), SEPTEMBER 2015		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	4.35
2	PEAK	3.61
3	OFF PEAK	3.30

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, SEPTEMBER 2015			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	1.10	1.52
2	Maximum	14.51	6.00
3	Weighted Average	3.65	3.56

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, SEPTEMBER 2015			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	25.06	4.09
2	Day Ahead Contingency Contracts	13.90	4.12
	<b>Total</b>	<b>38.96</b>	<b>4.10</b>

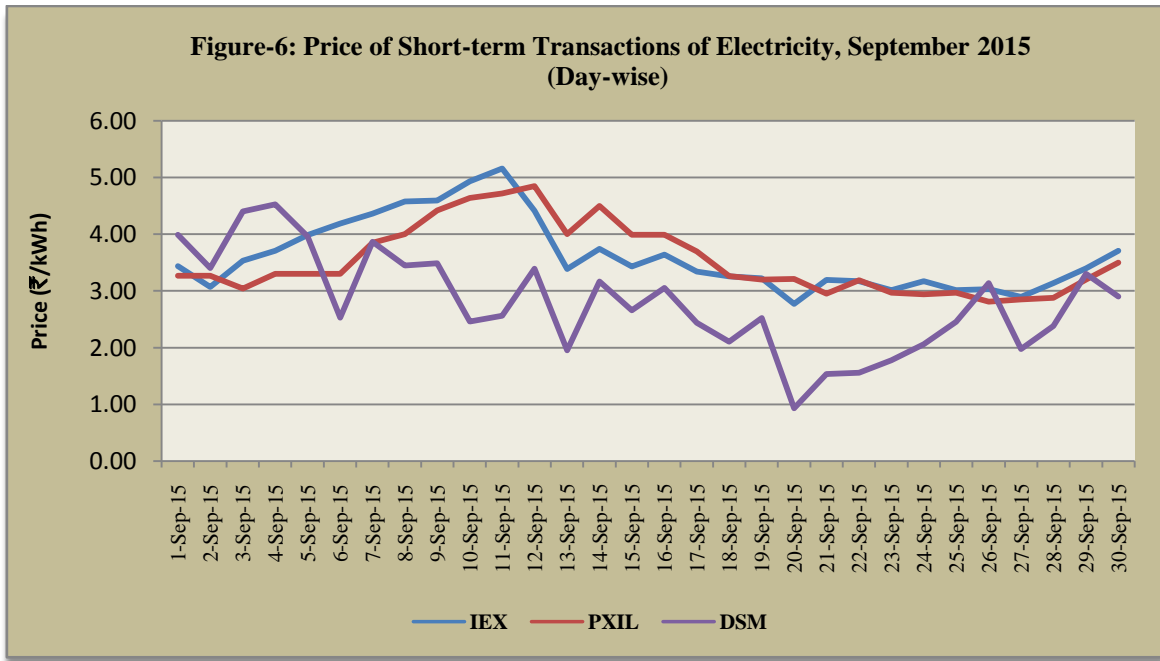
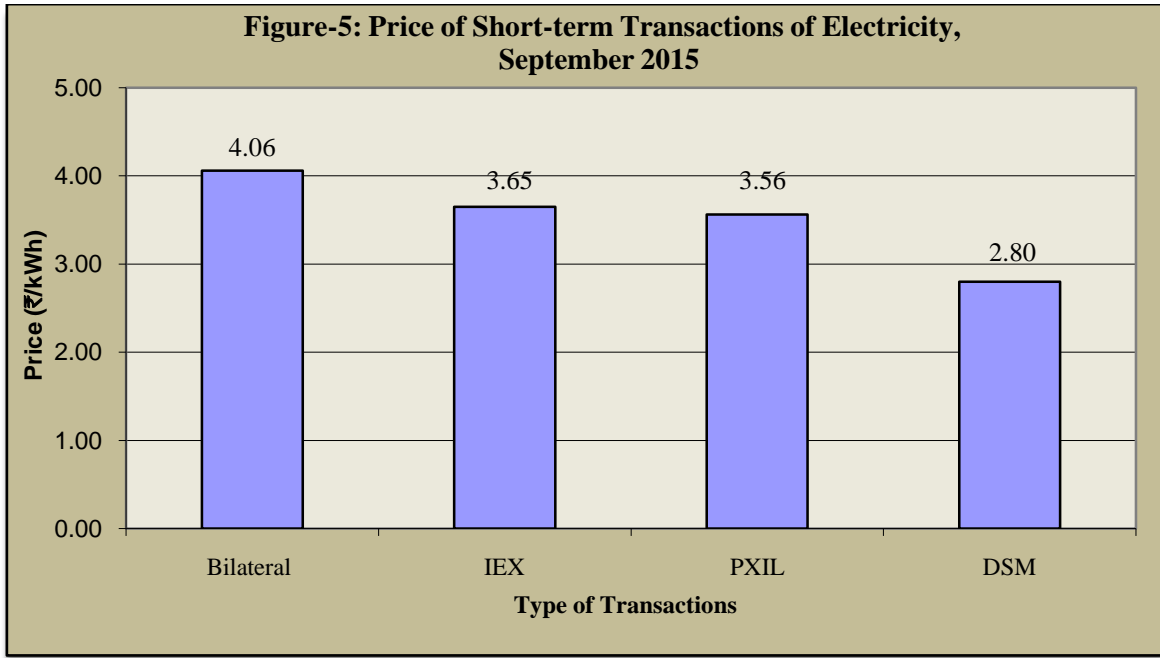
Source: IEX

Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, SEPTEMBER 2015			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Weekly Contracts	12.75	3.06
2	Intra-Day Contracts	41.07	3.26
3	Daily Contracts	8.55	3.48
	<b>Total</b>	<b>62.36</b>	<b>3.25</b>

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH DSM, SEPTEMBER 2015		
Sr.No		Price in All India Grid (₹/kWh)
1	Minimum	0.00
2	Maximum	8.24
3	Average	2.80

Source: NLDC



<b>Table-9: VOLUME OF ELECTRICITY SOLD THROUGH BILATERAL, SEPTEMBER 2015</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Sale (MUs)</b>	<b>% of Volume</b>
RAJASTHAN	513.09	9.20
THERMAL POWERTECH	448.98	8.05
HIMACHAL PRADESH	423.08	7.59
MP	417.57	7.49
J & K	340.36	6.10
JITPL	301.37	5.41
SIMHAPURI	279.44	5.01
LANKO KONDAPALLI	234.00	4.20
GMR KAMALANGA	231.62	4.15
KARNATAKA	205.59	3.69
STERLITE	200.78	3.60
UTTARAKHAND	186.66	3.35
GUJARAT	180.17	3.23
JINDAL POWER	161.20	2.89
SHREE CEMENT	138.77	2.49
JINDAL STAGE-II	117.63	2.11
KORBA WEST POWER	107.93	1.94
DVC	100.67	1.81
ADHUNIK POWER LTD	99.14	1.78
ANDHRA PRADESH	98.99	1.78
MEGHALAYA	97.03	1.74
DB POWER	95.89	1.72
MEENAKSHI	87.55	1.57
EMCO	79.34	1.42
DAGACHU	61.16	1.10
KARCHAM WANGTOO	51.47	0.92
DELHI	47.53	0.85
MAITHON POWER LTD	43.20	0.77
CHHATTISGARH	42.15	0.76
UTTAR PRADESH	36.54	0.66
ODISHA	31.11	0.56
TRIPURA	19.32	0.35
TELANGANA	13.71	0.25
DCPP(DONGA MAHUA CAPTIVE POWER PLANT)	13.49	0.24
MANIPUR	13.16	0.24
AD HYDRO	12.19	0.22
HARYANA	11.07	0.20
WEST BENGAL	9.98	0.18
ACBIL	8.84	0.16
MAHARASHTRA	8.50	0.15
PUNJAB	4.80	0.09
ASSAM	0.17	0.00
<b>Total</b>	<b>5575.21</b>	<b>100.00</b>
<b>Volume of Sold by top 5 States</b>	<b>2143.07</b>	<b>38.44</b>

<b>Table-10: VOLUME OF ELECTRICITY PURCHASED THROUGH BILATERAL, SEPTEMBER 2015</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Purchase (MUs)</b>	<b>% of Volume</b>
TELANGANA	1297.68	22.32
HARYANA	1247.77	21.46
WEST BENGAL	516.07	8.88
PUNJAB	371.14	6.38
GUJARAT	320.35	5.51
BIHAR	317.22	5.46
UTTAR PRADESH	315.39	5.42
DELHI	290.38	4.99
ANDHRA PRADESH	252.65	4.34
MAHARASHTRA	242.42	4.17
RAJASTHAN	127.12	2.19
JHARKHAND	90.37	1.55
KERALA	90.23	1.55
TAMILNADU	72.86	1.25
UTTARAKHAND	67.87	1.17
ASSAM	46.82	0.81
CHHATTISGARH	45.77	0.79
ODISHA	42.69	0.73
ESSAR STEEL	30.60	0.53
J & K	17.96	0.31
DAMAN AND DIU	7.13	0.12
GOA	2.79	0.05
DVC	0.88	0.02
MEGHALAYA	0.38	0.01
MP	0.15	0.00
<b>Total</b>	<b>5814.67</b>	<b>100.00</b>
<b>Volume of Purchase by top 5 States</b>	<b>3753.01</b>	<b>64.54</b>

<b>Table-11: VOLUME OF ELECTRICITY SOLD THROUGH POWER EXCHANGES, SEPTEMBER 2015</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Sale (MUs)</b>	<b>% of Volume</b>
STERLITE	267.04	8.36
GUJARAT	257.95	8.07
KARCHAM WANGTOO	212.19	6.64
HIMACHAL PRADESH	187.82	5.88
JITPL	166.19	5.20
MAHARASHTRA	165.38	5.18
JINDAL STAGE-II	159.28	4.99
HARYANA	147.16	4.61
JINDAL POWER	114.35	3.58
ODISHA	100.73	3.15
GMR KAMALANGA	93.99	2.94
KARNATAKA	91.70	2.87
KORBA WEST POWER	86.29	2.70
CHUZACHEN HEP	73.62	2.30
SIKKIM	66.38	2.08
THERMAL POWERTECH	64.15	2.01
TRIPURA	62.84	1.97
CHHATTISGARH	54.46	1.70
MP	50.78	1.59
WEST BENGAL	50.01	1.57
MARUTI COAL	48.02	1.50
DELHI	46.46	1.45
DB POWER	44.32	1.39
TELANGANA	43.91	1.37
SIMHAPURI	43.31	1.36
ACBIL	40.18	1.26
AD HYDRO	37.36	1.17
NHPC STATIONS	36.90	1.15
DVC	36.25	1.13
RAJASTHAN	30.01	0.94
LANCO BUDHIL	29.53	0.92
DCPP(DONGA MAHUA CAPTIVE POWER PLANT)	25.95	0.81
ASSAM	24.52	0.77
J & K	24.37	0.76
SPECTRUM	23.87	0.75
MEGHALAYA	23.38	0.73
NJPC	20.35	0.64
ARUNACHAL PRADESH	16.31	0.51
MAITHON POWER LTD	13.89	0.43
ANDHRA PRADESH	13.27	0.42
KERALA	12.69	0.40
SHREE CEMENT	11.53	0.36
MANIPUR	11.35	0.36
MIZORAM	11.12	0.35
EMCO	10.92	0.34
LOKTAK	9.02	0.28

MEENAKSHI	8.88	0.28
BALCO	6.34	0.20
GOA	5.33	0.17
MALANA	4.36	0.14
NAGALAND	3.84	0.12
ONGC PALATANA	2.19	0.07
JAYPEE NIGRIE	1.63	0.05
CHANDIGARH	0.90	0.03
ADHUNIK POWER LTD	0.59	0.02
<b>Total</b>	<b>3195.17</b>	<b>100.00</b>
<b>Volume of sale by top 5 Sellers</b>	<b>1091.19</b>	<b>34.15</b>

**Table-12: VOLUME OF ELECTRICITY PURCHASED THROUGH POWER EXCHANGES, SEPTEMBER 2015**

<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Purchase (MUs)</b>	<b>% of Volume</b>
RAJASTHAN	713.35	22.33
WEST BENGAL	311.32	9.74
BIHAR	284.63	8.91
GUJARAT	199.84	6.25
UTTARAKHAND	174.42	5.46
PUNJAB	159.01	4.98
DELHI	157.89	4.94
MAHARASHTRA	151.96	4.76
HARYANA	138.27	4.33
ESSAR STEEL	106.40	3.33
CHHATTISGARH	102.68	3.21
J & K	102.45	3.21
ANDHRA PRADESH	97.13	3.04
DADRA & NAGAR HAVELI	96.90	3.03
KERALA	79.10	2.48
UTTAR PRADESH	77.94	2.44
KARNATAKA	48.15	1.51
TELANGANA	38.32	1.20
DAMAN AND DIU	34.69	1.09
HIMACHAL PRADESH	24.81	0.78
ASSAM	19.91	0.62
MEGHALAYA	16.04	0.50
GOA	15.14	0.47
JHARKHAND	11.22	0.35
MP	10.00	0.31
CHANDIGARH	9.43	0.30
TAMIL NADU	9.27	0.29
ODISHA	4.88	0.15
<b>Total</b>	<b>3195.17</b>	<b>100.00</b>
<b>Volume of purchase by top 5 Buyers</b>	<b>1683.57</b>	<b>52.69</b>

<b>Table-13: VOLUME OF ELECTRICITY UNDER DRAWAL (EXPORTED) THROUGH DSM, SEPTEMBER 2015</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Under drawal (MUs)</b>	<b>% of Volume</b>
NTPC STATIONS-WR	147.61	8.86
MAHARASHTRA	137.51	8.26
GUJARAT	117.76	7.07
MP	106.51	6.40
HARYANA	99.94	6.00
TELANGANA	98.64	5.92
NHPC STATIONS	80.88	4.86
PUNJAB	55.28	3.32
DELHI	50.67	3.04
TAMIL NADU	46.41	2.79
J & K	45.56	2.74
RAJASTHAN	43.85	2.63
NTPC STATIONS-NR	41.94	2.52
WEST BENGAL	34.70	2.08
BIHAR	31.91	1.92
DVC	30.41	1.83
NTPC STATIONS-ER	29.34	1.76
UTTAR PRADESH	29.10	1.75
NTPC STATIONS-SR	27.14	1.63
ODISHA	24.71	1.48
HIMACHAL PRADESH	21.83	1.31
JITPL	21.28	1.28
KARNATAKA	20.28	1.22
CHHATTISGARH	19.11	1.15
CGPL(COASTAL GUJARAT POWER LTD)	18.06	1.08
JHARKHAND	17.63	1.06
ESSAR STEEL	16.59	1.00
ANDHRA PRADESH	15.29	0.92
TEESTA HEP	13.40	0.80
JINDAL POWER	13.33	0.80
STERLITE	12.77	0.77
UTTARAKHAND	12.34	0.74
NJPC	12.06	0.72
NEEPCO STATIONS	10.70	0.64
MEGHALAYA	10.54	0.63
JAYPEE NIGRIE	10.34	0.62
KARCHAM WANGTOO	9.57	0.57
MAITHON POWER LTD	9.47	0.57
AD HYDRO	7.39	0.44
GOA	6.85	0.41
THERMAL POWERTECH	6.51	0.39
GMR KAMALANGA	6.35	0.38
ASSAM	6.14	0.37
DADRA & NAGAR HAVELI	6.02	0.36
KORBA WEST POWER	4.92	0.30
TRIPURA	4.81	0.29
MB POWER	4.48	0.27
URI-2	4.25	0.26
DCPP(DONGA MAHUA CAPTIVE POWER PLANT)	3.96	0.24



EMCO	3.78	0.23
NSPCL	3.49	0.21
PONDICHERRY	3.16	0.19
ACBIL	3.11	0.19
NAGALAND	3.09	0.19
KERALA	3.06	0.18
CHUZACHEN HEP	3.05	0.18
DAMAN AND DIU	2.97	0.18
CHANDIGARH	2.73	0.16
DB POWER	2.48	0.15
ARUNACHAL PRADESH	2.44	0.15
SIKKIM	2.36	0.14
MANIPUR	2.35	0.14
DAGACHU	2.34	0.14
KSK MAHANADI	2.20	0.13
BALCO	2.16	0.13
MIZORAM	2.10	0.13
RANGIT HEP	1.81	0.11
SIMHAPURI	1.69	0.10
DGEN MEGA POWER	1.56	0.09
LANKO_AMK	1.52	0.09
SHREE CEMENT	1.31	0.08
ADHUNIK POWER LTD	1.11	0.07
LOKTAK	0.70	0.04
COASTGEN	0.68	0.04
LANCO BUDHIL	0.58	0.04
MEENAKSHI	0.58	0.03
MALANA	0.52	0.03
LANKO KONDAPALLI	0.20	0.01
VANDANA VIDYUT	0.20	0.01
DHARIWAL POWER	0.0013	0.00
ESSAR POWER	0.0003	0.00
<b>Total</b>	<b>1665.47</b>	<b>100.00</b>
<b>Volume of Export by top 5 States</b>	<b>609.33</b>	<b>36.59</b>

<b>Table-14: VOLUME OF ELECTRICITY OVER DRAWAL (IMPORTED) THROUGH DSM, SEPTEMBER 2015</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Over drawal (MUs)</b>	<b>% of Volume</b>
UTTAR PRADESH	224.68	13.59
KARNATAKA	96.24	5.82
NTPC STATIONS-ER	88.93	5.38
ANDHRA PRADESH	82.70	5.00
TAMIL NADU	78.16	4.73
PUNJAB	75.79	4.58
CHHATTISGARH	66.95	4.05
KERALA	65.10	3.94
NTPC STATIONS-NR	58.25	3.52
RAJASTHAN	54.32	3.28
HARYANA	46.98	2.84
ASSAM	43.22	2.61
BIHAR	42.91	2.59
WEST BENGAL	40.50	2.45
UTTARAKHAND	40.50	2.45
NTPC STATIONS-WR	40.02	2.42
MAHARASHTRA	37.27	2.25
HIMACHAL PRADESH	32.90	1.99
ODISHA	30.32	1.83
STERLITE	25.59	1.55
GUJARAT	23.73	1.43
GOA	21.19	1.28
J & K	20.52	1.24
DVC	18.26	1.10
JHARKHAND	18.22	1.10
DELHI	16.20	0.98
NTPC STATIONS-SR	15.85	0.96
TRIPURA	14.92	0.90
CHANDIGARH	13.44	0.81
DAMAN AND DIU	12.77	0.77
LANKO KONDAPALLI	11.55	0.70
ESSAR STEEL	10.69	0.65
DCPP(DONGA MAHUA CAPTIVE POWER PLANT)	10.45	0.63
ACBIL	10.05	0.61
TELANGANA	8.75	0.53
BALCO	8.69	0.53
MB POWER	8.54	0.52
MP	8.24	0.50
ARUNACHAL PRADESH	8.20	0.50
PONDICHERRY	6.92	0.42
KORBA WEST POWER	6.89	0.42
MANIPUR	6.38	0.39
JINDAL POWER	5.54	0.34
JITPL	5.50	0.33
CGPL(COASTAL GUJARAT POWER LTD)	5.18	0.31
NHPC STATIONS	5.18	0.31
SHREE CEMENT	5.13	0.31

THERMAL POWERTECH	4.96	0.30
NAGALAND	4.68	0.28
DADRA & NAGAR HAVELI	4.09	0.25
SIMHAPURI	3.97	0.24
RGPPPL(DABHOL)	3.91	0.24
ADHUNIK POWER LTD	3.77	0.23
COASTGEN	3.69	0.22
GMR CHHATTISGARH	3.54	0.21
NJPC	3.35	0.20
MEGHALAYA	3.33	0.20
NEEPCO STATIONS	3.17	0.19
GMR KAMALANGA	3.09	0.19
JAYPEE NIGRIE	2.98	0.18
LANCO BUDHIL	2.68	0.16
KARCHAM WANGTOO	2.66	0.16
DAGACHU	2.44	0.15
MAITHON POWER LTD	1.96	0.12
MIZORAM	1.91	0.12
SIKKIM	1.90	0.11
DB POWER	1.88	0.11
ESSAR POWER	1.52	0.09
LANKO_AMK	1.37	0.08
KSK MAHANADI	1.35	0.08
EMCO	1.24	0.08
NSPCL	1.19	0.07
AD HYDRO	0.96	0.06
URI-2	0.69	0.04
DHARIWAL POWER	0.66	0.04
DGEN MEGA POWER	0.65	0.04
MALANA	0.46	0.03
LOKTAK	0.44	0.03
CHUZACHEN HEP	0.36	0.02
RANGIT HEP	0.31	0.02
MEENAKSHI	0.25	0.01
TEESTA HEP	0.001	0.00
<b>Total</b>	<b>1653.73</b>	<b>100.00</b>
<b>Volume of Import by top 5 States</b>	<b>570.71</b>	<b>34.51</b>

<b>Table-15: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY-WISE),SEPTEMBER 2015</b>		
<b>Sr.No.</b>	<b>Name of the State/UT/Other Regional Entity</b>	<b>Total volume of net short-term transactions of electricity*</b>
1	TELANGANA	1188.49
2	HARYANA	1174.86
3	WEST BENGAL	773.20
4	BIHAR	612.85
5	UTTAR PRADESH	552.37
6	PUNJAB	545.86
7	DELHI	319.81
8	RAJASTHAN	307.84
9	ANDHRA PRADESH	304.92
10	KERALA	218.68
11	ESSAR STEEL	131.11
12	MAHARASHTRA	120.26
13	TAMIL NADU	113.89
14	JHARKHAND	102.17
15	CHHATTISGARH	99.67
16	DADRA & NAGAR HAVELI	94.97
17	UTTARAKHAND	83.79
18	ASSAM	79.11
19	NTPC STATIONS-ER	59.60
20	DAMAN AND DIU	51.61
21	GOA	26.94
22	CHANDIGARH	19.25
23	NTPC STATIONS-NR	16.31
24	MB POWER	4.07
25	RGPPL(DABHOL)	3.91
26	PONDICHERRY	3.76
27	GMR CHHATTISGARH	3.54
28	COASTGEN	3.02
29	ESSAR POWER	1.52
30	DHARIWAL POWER	0.66
31	BALCO	0.18
32	LANKO_AMK	-0.15
33	VANDANA VIDYUT	-0.20
34	KSK MAHANADI	-0.85
35	DGEN MEGA POWER	-0.91
36	RANGIT HEP	-1.49
37	ONGC PALATANA	-2.19
38	NAGALAND	-2.26
39	NSPCL	-2.30
40	URI-2	-3.57
41	MALANA	-4.42
42	NEEPCO STATIONS	-7.53
43	JAYPEE NIGRIE	-8.99
44	LOKTAK	-9.28
45	ARUNACHAL PRADESH	-10.55
46	NTPC STATIONS-SR	-11.29
47	MIZORAM	-11.31
48	GUJARAT	-11.96

49	CGPL(COASTAL GUJARAT POWER LTD)	-12.88
50	TEESTA HEP	-13.40
51	MANIPUR	-20.48
52	SPECTRUM	-23.87
53	LANCO BUDHIL	-27.43
54	NJPC	-29.06
55	DCPP(DONGA MAHUA CAPTIVE POWER PLANT)	-32.95
56	ACBIL	-42.07
57	MARUTI COAL	-48.02
58	AD HYDRO	-55.97
59	DAGACHU	-61.06
60	MAITHON POWER LTD	-64.61
61	SIKKIM	-66.84
62	TRIPURA	-72.05
63	CHUZACHEN HEP	-76.32
64	ODISHA	-78.66
65	EMCO	-92.79
66	MEENAKSHI	-96.77
67	ADHUNIK POWER LTD	-97.07
68	NTPC STATIONS-WR	-107.58
69	MEGHALAYA	-111.20
70	NHPC STATIONS	-112.60
71	DB POWER	-140.80
72	SHREE CEMENT	-146.48
73	DVC	-148.19
74	KARNATAKA	-173.18
75	KORBA WEST POWER	-192.25
76	LANKO KONDAPALLI	-222.65
77	J & K	-269.35
78	KARCHAM WANGTOO	-270.57
79	JINDAL STAGE-II	-276.91
80	JINDAL POWER	-283.33
81	SIMHAPURI	-320.47
82	GMR KAMALANGA	-328.86
83	STERLITE	-455.02
84	JITPL	-483.33
85	THERMAL POWERTECH	-514.68
86	MP	-556.46
87	HIMACHAL PRADESH	-575.02
<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>		

<b>Table-16: DETAILS OF CONGESTION IN POWER EXCHANGES, SEPTEMBER 2015</b>			
	<b>Details of Congestion</b>	<b>IEX</b>	<b>PXIL</b>
A	Unconstrained Cleared Volume* (MUs)	3335.33	6.62
B	Actual Cleared Volume and hence scheduled (MUs)	3188.40	6.77
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	146.93	-0.15
D	Volume of electricity that could not be cleared as % to Unconstrained Cleared Volume	4.41%	-2.24%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	83.78%	43.02%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	18.65%	10.01%
	6.00 - 12.00 hours	28.80%	32.36%
	12.00 - 18.00 hours	27.14%	28.41%
	18.00 - 24.00 hours	25.40%	29.22%
<p>* This power would have been scheduled had there been no congestion.  # In some instances, after market splitting the Actual Cleared Volume can be greater than the Unconstrained Cleared Volume.</p>			
Source: IEX & PXIL & NLDC			

<b>Table-17: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA (MUs) (DAY-WISE), SEPTEMBER 2015</b>						
Date	Bilateral		Power Exchange (Area Clearing Volume# of Day Ahead Market)		Deviation Settlement (Over Draw+Under Generation)	Total Electricity Generation (MU) as given at CEA Website*
	Through Traders and PXs**	Direct	IEX	PXIL		
1-Sep-15	113.05	79.32	104.69	0.18	55.31	3304.82
2-Sep-15	113.79	79.83	97.63	0.18	55.31	3286.70
3-Sep-15	124.29	77.72	96.25	0.23	57.42	3359.00
4-Sep-15	114.47	76.55	106.28	0.25	55.26	3352.30
5-Sep-15	119.76	73.62	91.00	0.21	58.43	3341.40
6-Sep-15	117.97	76.97	83.98	0.21	57.04	3246.20
7-Sep-15	109.68	79.83	101.94	0.13	55.48	3328.00
8-Sep-15	107.54	81.10	107.52	0.13	55.10	3344.60
9-Sep-15	111.44	80.14	112.79	0.07	59.13	3342.10
10-Sep-15	112.19	82.31	119.99	0.52	59.41	3354.30
11-Sep-15	112.57	81.16	130.50	0.42	62.87	3326.80
12-Sep-15	112.89	79.33	119.05	0.46	63.13	3293.30
13-Sep-15	112.24	72.46	112.75	0.14	66.12	3214.90
14-Sep-15	115.47	78.52	120.01	0.05	59.82	3267.40
15-Sep-15	115.53	78.61	127.73	0.14	54.51	3285.20
16-Sep-15	110.92	79.25	136.91	0.12	53.98	3239.00
17-Sep-15	111.67	80.90	126.74	0.12	59.56	3131.10
18-Sep-15	108.53	76.44	114.58	0.27	62.43	3077.30
19-Sep-15	118.56	86.16	118.06	0.27	60.50	3007.06
20-Sep-15	118.68	78.38	107.69	0.28	65.30	2850.00
21-Sep-15	119.71	81.77	112.09	0.26	62.31	2886.30
22-Sep-15	112.70	76.49	103.57	0.26	64.40	2901.56
23-Sep-15	105.89	93.36	83.10	0.25	65.39	2928.60
24-Sep-15	112.19	86.97	88.25	0.26	56.94	2947.75
25-Sep-15	114.31	87.43	87.29	0.25	58.21	2989.91
26-Sep-15	108.70	87.26	98.46	0.25	57.86	3006.60
27-Sep-15	100.20	83.21	89.18	0.28	53.61	2990.00
28-Sep-15	103.24	83.11	90.90	0.23	50.53	3125.00
29-Sep-15	111.76	87.69	95.67	0.25	57.13	3225.90
30-Sep-15	111.00	87.82	103.79	0.10	65.54	3210.60
<b>Total</b>	<b>3380.95</b>	<b>2433.72</b>	<b>3188.40</b>	<b>6.77</b>	<b>1768.00</b>	<b>95163.70</b>

Source: NLDC

\* Gross Electricity Generation excluding electricity generation from renewable 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), SEPTEMBER 2015 (DAY-WISE)									
Market Segment	Day ahead market of IEX			Day ahead market of PXIL			Under Drawl/Over Drawl from the Grid (DSM)		
Date	Mini-mum ACP	Maxi-mum ACP	Weighted Average Price*	Mini-mum ACP	Maxi-mum ACP	Weighted Average Price*	All India Grid		
							Mini-mum Price	Maxi-mum Price	Average Price**
1-Sep-15	2.00	8.01	3.44	2.45	3.75	3.27	1.42	6.36	3.99
2-Sep-15	1.10	9.52	3.07	3.20	3.75	3.27	0.00	6.36	3.40
3-Sep-15	2.16	9.52	3.54	1.52	3.30	3.04	1.42	8.24	4.41
4-Sep-15	2.45	9.52	3.71	2.38	3.75	3.30	1.42	8.24	4.53
5-Sep-15	2.90	9.53	3.99	2.75	4.35	3.30	0.71	8.24	3.96
6-Sep-15	2.90	10.02	4.19	3.30	3.30	3.30	0.00	7.20	2.53
7-Sep-15	3.20	10.26	4.36	3.32	4.50	3.85	0.36	7.20	3.87
8-Sep-15	3.27	10.56	4.58	3.22	4.49	4.00	0.36	7.20	3.45
9-Sep-15	2.90	9.52	4.60	3.26	5.51	4.42	0.71	5.95	3.49
10-Sep-15	3.20	9.52	4.94	3.00	5.60	4.64	0.00	5.32	2.46
11-Sep-15	3.29	9.52	5.16	3.20	6.00	4.72	0.36	6.36	2.56
12-Sep-15	3.27	8.01	4.42	3.25	6.00	4.85	0.71	6.36	3.39
13-Sep-15	2.90	4.45	3.39	4.00	4.00	4.00	0.00	5.11	1.95
14-Sep-15	2.65	4.99	3.75	4.50	4.50	4.50	0.71	6.16	3.17
15-Sep-15	2.75	4.51	3.44	3.99	3.99	3.99	0.36	5.74	2.66
16-Sep-15	2.85	4.74	3.64	3.84	4.50	3.99	0.00	6.36	3.06
17-Sep-15	2.50	6.01	3.34	3.70	3.70	3.70	0.00	5.74	2.44
18-Sep-15	2.30	8.01	3.26	3.25	3.29	3.26	0.00	3.45	2.11
19-Sep-15	2.63	4.20	3.22	3.20	3.20	3.20	0.00	6.36	2.53
20-Sep-15	1.70	4.40	2.77	2.66	3.93	3.21	0.00	3.24	0.93
21-Sep-15	2.30	5.50	3.20	2.25	4.04	2.95	0.00	5.95	1.54
22-Sep-15	2.16	5.40	3.17	2.40	4.49	3.19	0.00	3.24	1.56
23-Sep-15	2.17	9.01	3.01	2.25	3.69	2.97	0.00	5.32	1.78
24-Sep-15	1.97	14.51	3.18	2.17	3.94	2.94	0.00	6.36	2.06
25-Sep-15	2.20	10.01	3.02	1.99	4.05	2.97	0.00	7.20	2.46
26-Sep-15	2.30	10.25	3.03	2.30	4.36	2.81	1.07	6.36	3.14
27-Sep-15	1.97	10.42	2.90	2.35	4.02	2.85	0.00	5.11	1.97
28-Sep-15	2.20	12.50	3.14	2.50	3.85	2.88	0.00	6.36	2.38
29-Sep-15	2.65	11.02	3.40	2.40	4.50	3.20	0.36	6.16	3.30
30-Sep-15	2.85	11.06	3.71	3.50	3.50	3.50	0.00	6.36	2.90
	<b>1.10#</b>	<b>14.51#</b>	<b>3.65</b>	<b>1.52#</b>	<b>6.00#</b>	<b>3.56</b>	<b>0.00#</b>	<b>8.24#</b>	<b>2.80**</b>

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), SEPTEMBER 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	4.80	371.14	366.34	0.00	159.01	159.01	75.79	55.28	20.51	545.86
HARYANA	11.07	1247.77	1236.70	147.16	138.27	-8.88	46.98	99.94	-52.96	1174.86
RAJASTHAN	513.09	127.12	-385.98	30.01	713.35	683.34	54.32	43.85	10.47	307.84
DELHI	47.53	290.38	242.85	46.46	157.89	111.43	16.20	50.67	-34.48	319.81
UTTAR PRADESH	36.54	315.39	278.85	0.00	77.94	77.94	224.68	29.10	195.58	552.37
UTTARAKHAND	186.66	67.87	-118.79	0.00	174.42	174.42	40.50	12.34	28.16	83.79
HIMACHAL PRADESH	423.08	0.00	-423.08	187.82	24.81	-163.01	32.90	21.83	11.07	-575.02
J & K	340.36	17.96	-322.39	24.37	102.45	78.08	20.52	45.56	-25.04	-269.35
CHANDIGARH	0.00	0.00	0.00	0.90	9.43	8.54	13.44	2.73	10.71	19.25
MP	417.57	0.15	-417.41	50.78	10.00	-40.78	8.24	106.51	-98.27	-556.46
MAHARASHTRA	8.50	242.42	233.92	165.38	151.96	-13.42	37.27	137.51	100.24	120.26
GUJARAT	180.17	320.35	140.19	257.95	199.84	-58.11	23.73	117.76	-94.03	-11.96
CHHATTISGARH	42.15	45.77	3.61	54.46	102.68	48.22	66.95	19.11	47.84	99.67
DAMAN AND DIU	0.00	7.13	7.13	0.00	34.69	34.69	12.77	2.97	9.79	51.61
DADRA & NAGAR HAVELI	0.00	0.00	0.00	0.00	96.90	96.90	4.09	6.02	-1.93	94.97
ANDHRA PRADESH	98.99	252.65	153.66	13.27	97.13	83.85	82.70	15.29	67.41	304.92
KARNATAKA	205.59	0.00	-205.59	91.70	48.15	-43.55	96.24	20.28	75.96	-173.18
KERALA	0.00	90.23	90.23	12.69	79.10	66.41	65.10	3.06	62.03	218.68
TAMIL NADU	0.00	72.86	72.86	0.00	9.27	9.27	78.16	46.41	31.75	113.89
PONDICHERRY	0.00	0.00	0.00	0.00	0.00	0.00	6.92	3.16	3.76	3.76
GOA	0.00	2.79	2.79	5.33	15.14	9.80	21.19	6.85	14.34	26.94
TELANGANA	13.71	1297.68	1283.96	43.91	38.32	-5.58	8.75	98.64	-89.89	1188.49
WEST BENGAL	9.98	516.07	506.09	50.01	311.32	261.31	40.50	34.70	5.80	773.20
ODISHA	31.11	42.69	11.58	100.73	4.88	-95.85	30.32	24.71	5.61	-78.66
BIHAR	0.00	317.22	317.22	0.00	284.63	284.63	42.91	31.91	11.00	612.85
JHARKHAND	0.00	90.37	90.37	0.00	11.22	11.22	18.22	17.63	0.59	102.17
SIKKIM	0.00	0.00	0.00	66.38	0.00	-66.38	1.90	2.36	-0.46	-66.84
DVC	100.67	0.88	-99.79	36.25	0.00	-36.25	18.26	30.41	-12.15	-148.19
ARUNACHAL PRADESH	0.00	0.00	0.00	16.31	0.00	-16.31	8.20	2.44	5.76	-10.55
ASSAM	0.17	46.82	46.65	24.52	19.91	-4.62	43.22	6.14	37.08	79.11
MANIPUR	13.16	0.00	-13.16	11.35	0.00	-11.35	6.38	2.35	4.04	-20.48
MEGHALAYA	97.03	0.38	-96.65	23.38	16.04	-7.34	3.33	10.54	-7.21	-111.20
MIZORAM	0.00	0.00	0.00	11.12	0.00	-11.12	1.91	2.10	-0.18	-11.31
NAGALAND	0.00	0.00	0.00	3.84	0.00	-3.84	4.68	3.09	1.59	-2.26
TRIPURA	19.32	0.00	-19.32	62.84	0.00	-62.84	14.92	4.81	10.11	-72.05
NTPC STATIONS-NR	0.00	0.00	0.00	0.00	0.00	0.00	58.25	41.94	16.31	16.31

NHPC STATIONS	0.00	0.00	0.00	36.90	0.00	-36.90	5.18	80.88	-75.71	-112.60
NJPC	0.00	0.00	0.00	20.35	0.00	-20.35	3.35	12.06	-8.72	-29.06
AD HYDRO	12.19	0.00	-12.19	37.36	0.00	-37.36	0.96	7.39	-6.43	-55.97
KARCHAM WANGTOO	51.47	0.00	-51.47	212.19	0.00	-212.19	2.66	9.57	-6.91	-270.57
SHREE CEMENT	138.77	0.00	-138.77	11.53	0.00	-11.53	5.13	1.31	3.82	-146.48
LANCO BUDHIL	0.00	0.00	0.00	29.53	0.00	-29.53	2.68	0.58	2.10	-27.43
MALANA	0.00	0.00	0.00	4.36	0.00	-4.36	0.46	0.52	-0.06	-4.42
URI-2	0.00	0.00	0.00	0.00	0.00	0.00	0.69	4.25	-3.57	-3.57
NTPC STATIONS-WR	0.00	0.00	0.00	0.00	0.00	0.00	40.02	147.61	107.58	-107.58
JINDAL POWER	161.20	0.00	-161.20	114.35	0.00	-114.35	5.54	13.33	-7.79	-283.33
LANKO_AMK	0.00	0.00	0.00	0.00	0.00	0.00	1.37	1.52	-0.15	-0.15
NSPCL	0.00	0.00	0.00	0.00	0.00	0.00	1.19	3.49	-2.30	-2.30
ACBIL	8.84	0.00	-8.84	40.18	0.00	-40.18	10.05	3.11	6.94	-42.07
BALCO	0.00	0.00	0.00	6.34	0.00	-6.34	8.69	2.16	6.52	0.18
RGPPL(DABHOL)	0.00	0.00	0.00	0.00	0.00	0.00	3.91	0.00	3.91	3.91
CGPL(COASTAL GUJARAT POWER LTD)	0.00	0.00	0.00	0.00	0.00	0.00	5.18	18.06	-12.88	-12.88
DCPP(DONGA MAHUA CAPTIVE POWER PLANT)	13.49	0.00	-13.49	25.95	0.00	-25.95	10.45	3.96	6.49	-32.95
EMCO	79.34	0.00	-79.34	10.92	0.00	-10.92	1.24	3.78	-2.53	-92.79
VANDANA VIDYUT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	-0.20	-0.20
ESSAR STEEL	0.00	30.60	30.60	0.00	106.40	106.40	10.69	16.59	-5.90	131.11
KSK MAHANADI	0.00	0.00	0.00	0.00	0.00	0.00	1.35	2.20	-0.85	-0.85
ESSAR POWER	0.00	0.00	0.00	0.00	0.00	0.00	1.52	0.00	1.52	1.52
JINDAL STAGE-II	117.63	0.00	-117.63	159.28	0.00	-159.28	0.00	0.00	0.00	-276.91
DB POWER	95.89	0.00	-95.89	44.32	0.00	-44.32	1.88	2.48	-0.60	-140.80
DHARIWAL POWER	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.00	0.66	0.66
JAYPEE NIGRIE	0.00	0.00	0.00	1.63	0.00	-1.63	2.98	10.34	-7.36	-8.99
DGEN MEGA POWER	0.00	0.00	0.00	0.00	0.00	0.00	0.65	1.56	-0.91	-0.91
GMR CHHATTISGARH	0.00	0.00	0.00	0.00	0.00	0.00	3.54	0.00	3.54	3.54
KORBA WEST POWER	107.93	0.00	-107.93	86.29	0.00	-86.29	6.89	4.92	1.97	-192.25
MB POWER	0.00	0.00	0.00	0.00	0.00	0.00	8.54	4.48	4.07	4.07
MARUTI COAL	0.00	0.00	0.00	48.02	0.00	-48.02	0.00	0.00	0.00	-48.02
SPECTRUM	0.00	0.00	0.00	23.87	0.00	-23.87	0.00	0.00	0.00	-23.87
NTPC STATIONS-SR	0.00	0.00	0.00	0.00	0.00	0.00	15.85	27.14	-11.29	-11.29
LANKO KONDAPALLI	234.00	0.00	-234.00	0.00	0.00	0.00	11.55	0.20	11.35	-222.65
SIMHAPURI	279.44	0.00	-279.44	43.31	0.00	-43.31	3.97	1.69	2.28	-320.47
MEENAKSHI	87.55	0.00	-87.55	8.88	0.00	-8.88	0.25	0.58	-0.34	-96.77
COASTGEN	0.00	0.00	0.00	0.00	0.00	0.00	3.69	0.68	3.02	3.02
THERMAL POWERTECH	448.98	0.00	-448.98	64.15	0.00	-64.15	4.96	6.51	-1.55	-514.68
NTPC STATIONS-ER	0.00	0.00	0.00	0.00	0.00	0.00	88.93	29.34	59.60	59.60
STERLITE	200.78	0.00	-200.78	267.04	0.00	-267.04	25.59	12.77	12.81	-455.02
MAITHON POWER LTD	43.20	0.00	-43.20	13.89	0.00	-13.89	1.96	9.47	-7.52	-64.61

ADHUNIK POWER LTD	99.14	0.00	-99.14	0.59	0.00	-0.59	3.77	1.11	2.66	-97.07
CHUZACHEN HEP	0.00	0.00	0.00	73.62	0.00	-73.62	0.36	3.05	-2.70	-76.32
RANGIT HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.31	1.81	-1.49	-1.49
GMR KAMALANGA	231.62	0.00	-231.62	93.99	0.00	-93.99	3.09	6.35	-3.25	-328.86
JITPL	301.37	0.00	-301.37	166.19	0.00	-166.19	5.50	21.28	-15.77	-483.33
TEESTA HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.40	-13.40	-13.40
DAGACHU	61.16	0.00	-61.16	0.00	0.00	0.00	2.44	2.34	0.10	-61.06
NEEPCO STATIONS	0.00	0.00	0.00	0.00	0.00	0.00	3.17	10.70	-7.53	-7.53
ONGC PALATANA	0.00	0.00	0.00	2.19	0.00	-2.19	0.00	0.00	0.00	-2.19
LOKTAK	0.00	0.00	0.00	9.02	0.00	-9.02	0.44	0.70	-0.25	-9.28
<b>TOTAL</b>	<b>5575.21</b>	<b>5814.67</b>	<b>239.47</b>	<b>3195.17</b>	<b>3195.17</b>	<b>0.00</b>	<b>1653.73</b>	<b>1665.47</b>	<b>-11.74</b>	<b>227.73</b>

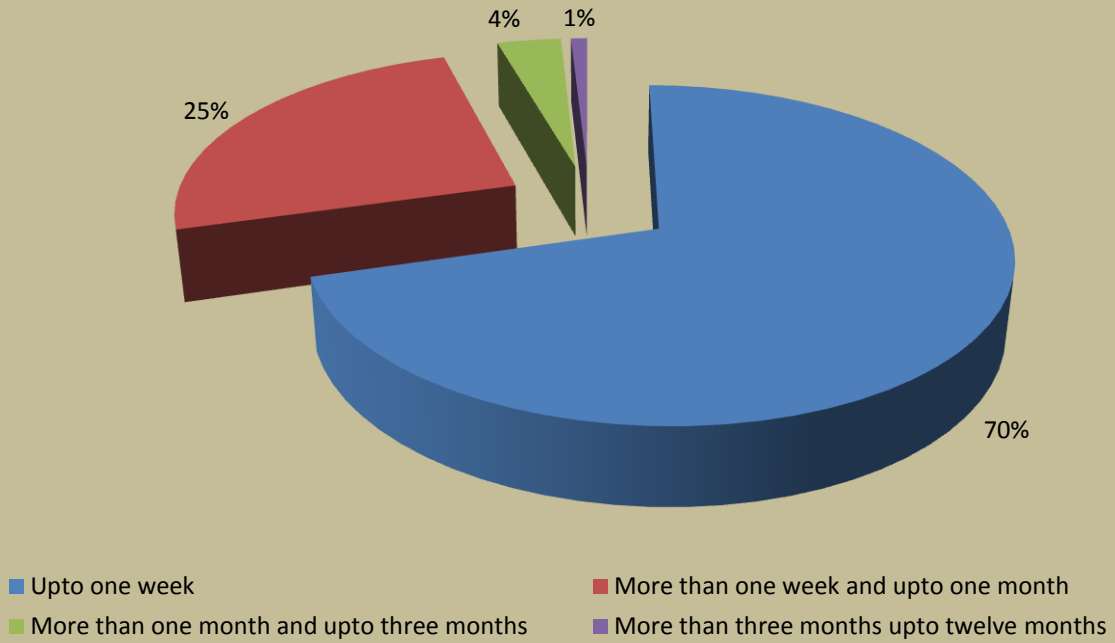
Source: NLDC

\* 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.

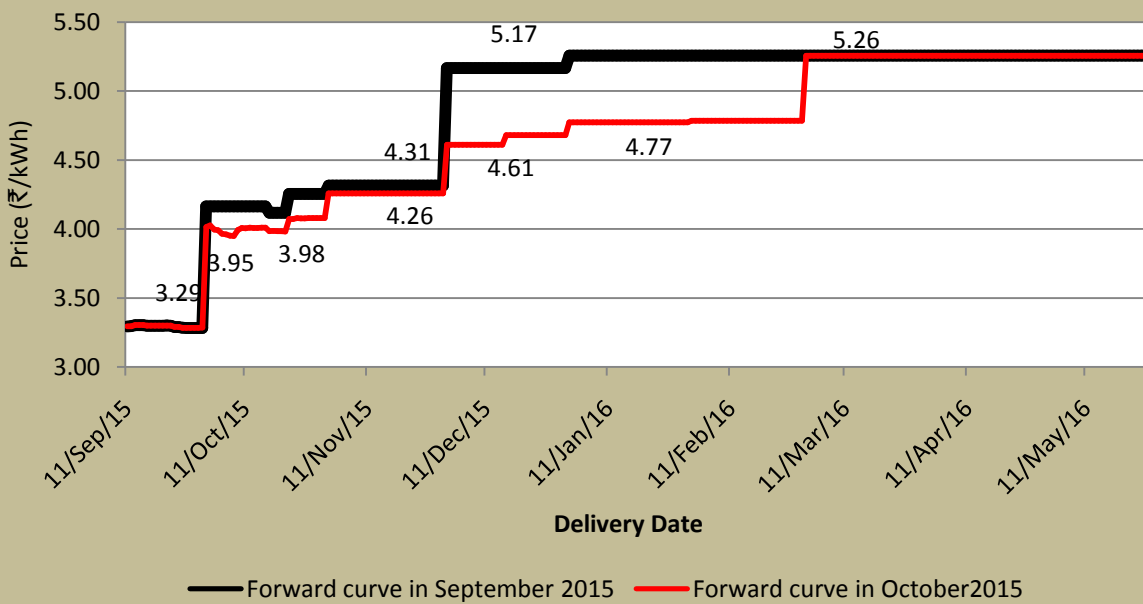
\*\* (-) indicates sale and (+) indicates purchase,

\*\*\* Total net includes net of transactions through bilateral, power exchange and DSM

**Figure 7: Bilateral Contracts executed by Traders in October, 2015**



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



<b>Table-20 : VOLUME AND PRICE OF RENEWABLE ENERGY CERTIFICATES (RECs) TRANSACTED THROUGH POWER EXCHANGES, SEPTEMBER 2015</b>					
<b>Sr.No.</b>	<b>Details of REC Transactions</b>	<b>IEX</b>		<b>PXIL</b>	
		<b>Solar</b>	<b>Non-Solar</b>	<b>Solar</b>	<b>Non Solar</b>
A	Volume of Buy Bid	8630	147805	1390	35794
B	Volume of Sell Bid	1903512	8792164	777122	4649030
C	Ratio of Buy Bid to Sell Bid Volume	0.005	0.02	0.002	0.01
D	Market Clearing Volume (MWh)	8630	147805	1390	35794
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>