

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

June, 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
LANCO BUDHIL	Lanco Budhil Hydro Power Private Limited
LANCO AMK	Lanco Amarkantak Power Private Limited
LANCO KONDAPALLY	Lanco Kondapally Power Private Limited
MAITHON	Maithon Power Limited
MALANA	Malana Hydroelectric Plant
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
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
STERLITE	Sterlite Energy Limited
TEESTA HEP	Teesta Hydro electric power project
THERMAL POWERTECH	Thermal Powertech Corporation India Limited
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 June, 2015 is as under:

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

During June 2015, total electricity generation excluding generation from renewable and captive power plants in India was 88858.89 MUs (Table-1).

Of the total electricity generation, 10088.57 MUs (11.35%) were transacted through short-term, comprising of 5794.65 MUs (6.52%) through bilateral (through traders and term-ahead contracts on power exchanges and directly between distribution companies), followed by 2468.27 MUs (2.78%) through day ahead collective transactions on power exchanges (IEX and PXIL) and 1825.65 MUs (2.05%) through DSM (Table-1 & Figure-2).

Of the total short-term transactions, bilateral constitutes 57.44% (33.94% through traders and term-ahead contracts on power exchanges and 23.50% directly between distribution companies) followed by 24.47 % through day ahead collective transactions on power exchanges and 18.10% 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 47 trading licensees as on 31.06.2015. In June 2015, 19 trading licensees were engaged in trading. Top 5 trading licensees had a share of 71.66 % in the total volume traded by all the licensees. These are PTC India Ltd., Tata Power Trading Company (P) Ltd., Mittal Processors (P) Ltd., GMR Energy Trading Limited and JSW Power Trading Company Ltd.

Herfindahl-Hirschman Index (HHI) has been used for measuring the competition among the trading licensees. Increase in the HHI generally indicates 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 0.1473 for the month of June 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 2443.98 MUs and 24.28 MUs respectively. The volume of total buy bids and sale bids was 3115.55 MUs and 4639.77 MUs respectively in IEX while the same was 49.52 MUs and 59.03 MUs respectively in PXIL. The gap between the volume of buy bids and sale bids placed through power exchanges shows that there was less demand in both IEX (0.67 times) and PXIL (0.84 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 22.63 MUs and 9.77 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 ₹2.29/kWh, ₹7.99/kWh and ₹3.90/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 ₹3.98/kWh, ₹3.91/kWh and ₹3.54/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 ₹0.50/kWh, ₹17.50/kWh and ₹2.72/kWh respectively in IEX and ₹0.36/kWh, ₹6.51/kWh and ₹2.77/kWh respectively in PXIL (Table-5).

The price of electricity transacted through IEX and PXIL in the term-ahead market was ₹3.59/kWh and ₹2.28/kWh respectively (Table-6 and Table-7).

**(iii) Price of electricity transacted through DSM:** The average deviation price was ₹1.62/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 39.55% of the volume, and these were Himachal Pradesh, Rajasthan, Sterlite Energy Limited, Thermal Powertech Corporation India Limited and Jammu & Kashmir. Top 5 regional entities purchased 58.05% of the volume, and these were Telangana, Haryana, Uttar Pradesh, Punjab and Andhra Pradesh (Table-9 & 10).

Of the total power exchange transactions, top 5 regional entities sold 34.98 % of the volume, and these were Himachal Pradesh, Jindal India Thermal Power Limited, Jaypee Karcham Hydro Corporation Limited, Madhya Pradesh and Gujarat. Top 5 regional entities purchased 52.66% of the volume, and these were Rajasthan, Gujarat, Essar Steel Limited, West Bengal and Haryana (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/exported 36.72% of the volume, and these were Uttar Pradesh, Gujarat, Maharashtra, Tamil Nadu and Punjab (Table-13). Top 5 regional entities overdrew/imported 28.49% of the volume, and these were Haryana, Maharashtra, Punjab, Uttar Pradesh and Rajasthan (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, Sterlite Energy Limited, Thermal Powertech Corporation India Limited, Jaypee Karcham Hydro Corporation Limited and Jindal India Thermal Power Limited. Top 5 electricity purchasing regional entities were Telangana, Haryana, Punjab, Andhra Pradesh 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 June 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 10.69% and 12.78% of the unconstrained cleared volume respectively. In terms of time, congestion occurred was 91.87% in IEX and 77.92% in PXIL (Table-16).

#### **V: Analysis of Bilateral Contracts executed by Traders in July 2015<sup>4</sup>**

**(i) Duration of bilateral contracts:** During July, 2015, a total of 107 bilateral contracts (excluding banking/swap contracts) have been executed by traders for the volume of 3579.70 MUs. Figure-7 shows the percentage of contracts categorized according to the period of power supply. It can be observed from the figure that 51% of the contracts were executed for a duration of up to one week and 49% of the contracts executed for a duration of more than a week and upto one month.

During the month, 32 banking/swapping bilateral contracts were also executed for the volume of 1437.83 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 July, 2015 to May, 2016 based on bilateral contracts<sup>5</sup> executed till July, 2015. Forward curves have been drawn for the contracts executed in June 2015 and July, 2015 for the purpose of comparison. It is observed that the forward prices from July, 2015 to October, 2015 were lower for the contracts executed in July, 2015 when compared to the contracts executed in

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<sup>4</sup>Monthly OTC(Electricity Traders) report' based on analysis of weekly reports has been discontinued and Analysis of Bilateral Contracts is being presented in this report hereinafter.

<sup>5</sup>Excluding Banking/Swapping contracts

June, 2015. However, the forward prices during the period from November, 2015 onwards remained same for the contracts executed in June, 2015 and July, 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 June, 2015 are shown in Table-20. The market clearing volume of solar RECs transacted on IEX and PXIL were 22682 and 966 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 128180 and 33665 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 0.01 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.

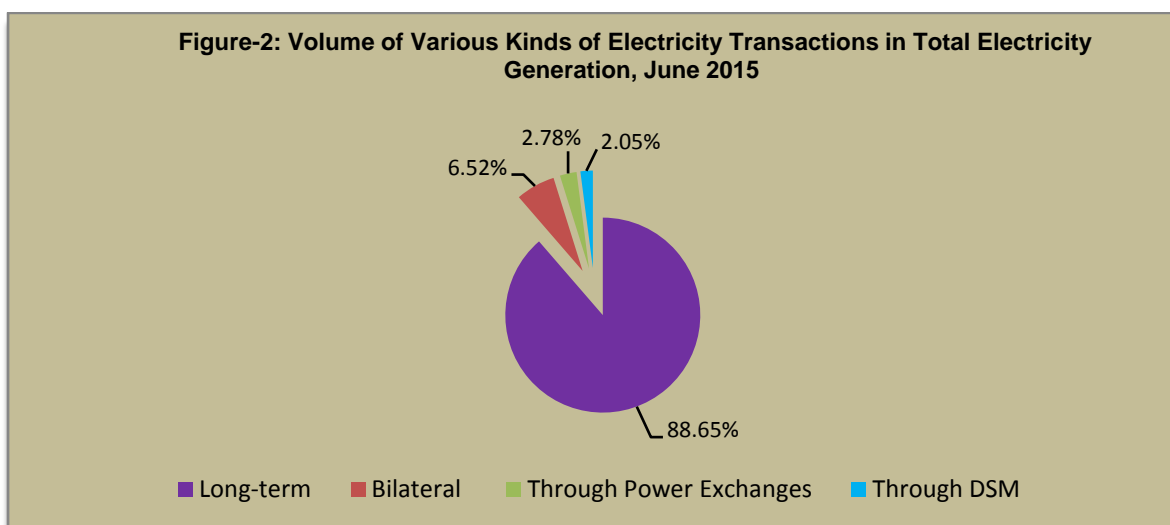
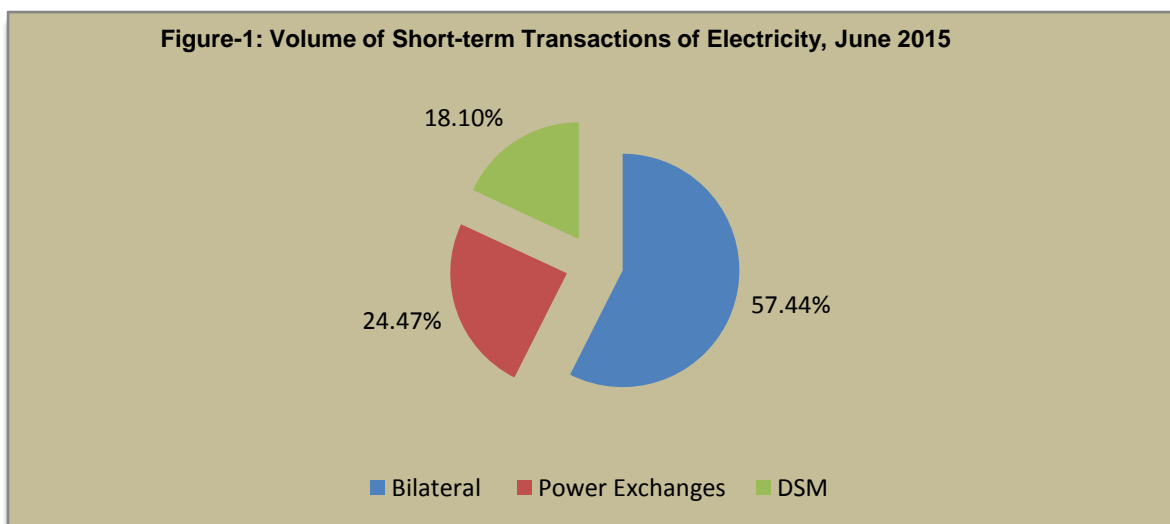
## VII: Inferences:

- The percentage of short-term transactions of electricity to total electricity generation was 11.35 %.
- Of the total short-term transactions of electricity, 57.44% was transacted through bilateral (through traders and term ahead contracts on power exchanges and directly by distribution companies), followed by 24.47% through power exchanges and 18.10% through DSM.
- Top 5 trading licensees had a share of 71.66% 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 0.1473, indicating moderate concentration of market power.
- The weighted average price of electricity transacted through trading licensees was ₹3.90/kWh. The weighted average prices of electricity transacted through IEX and PXIL were ₹2.72/kWh and ₹2.77/kWh respectively.
- The average price of electricity transacted through DSM was ₹1.62/kWh
- The gap between the volume of buy bids and sale bids placed through power exchanges indicates that there was less demand in both IEX (1.0: 0.67) and PXIL (1.0: 0.84) when compared with the supply bids offered through these exchanges.
- Top 5 electricity selling regional entities were Himachal Pradesh, Sterlite Energy Limited, Thermal Powertech Corporation India Limited, Jaypee Karcham Hydro Corporation Limited and Jindal India Thermal Power Limited. Top 5 electricity purchasing regional entities were Telangana, Haryana, Punjab, Andhra Pradesh and Uttar Pradesh.
- The volume of electricity that could not be cleared due to congestion was 10.69% and 12.78 % of the unconstrained cleared volume for IEX and PXIL, respectively. In terms of time, congestion occurred for 91.87% of the time in IEX and 77.92% of the time in PXIL.

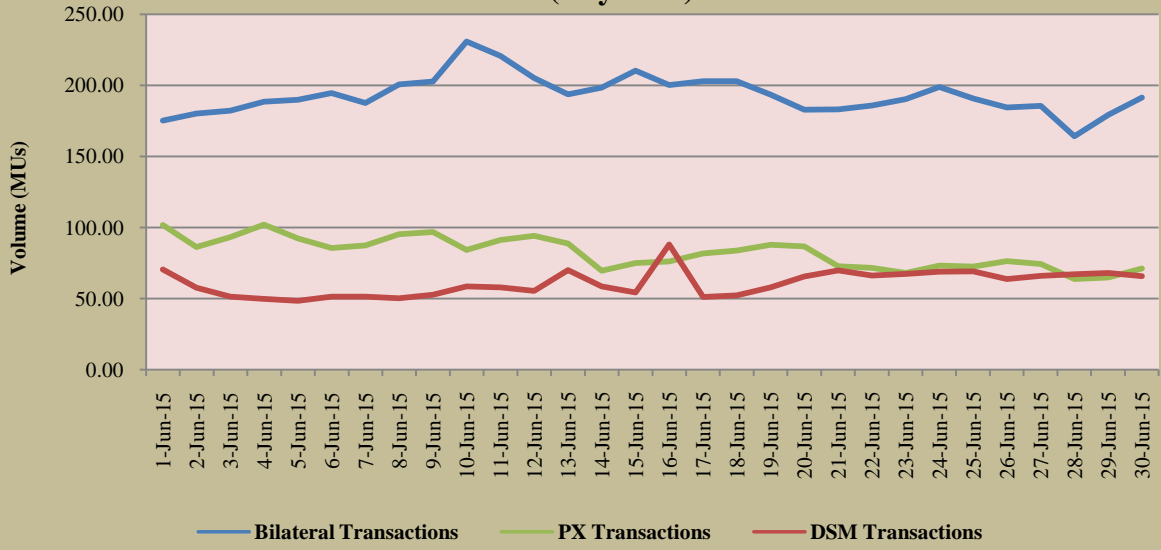
- In July 2015, 51% of the bilateral contracts were executed for a duration of up to one week, and 49% of the contracts were executed for a duration of more than a week and upto one month.
- The forward prices from July, 2015 to October, 2015 were lower for the contracts executed in July, 2015 when compared to the contracts executed in June, 2015 However, the forward prices during the period from November, 2015 onwards remained the same for the contracts executed in June, 2015 and July, 2015.
- The market clearing volume of Solar RECs transacted on IEX and PXIL were 22682 and 966 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 128180 and 33665 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), JUNE 2015				
Sr.No	Short-term transactions	Volume (MUs)	% of short-term transactions	% of Total Generation
1	Bilateral	5794.65	57.44	6.52
	(i) Through Traders and PXs	3424.25	33.94	3.85
	(ii) Direct	2370.40	23.50	2.67
2	Through Power Exchanges	2468.27	24.47	2.78
	(i) IEX	2443.98	24.23	2.75
	(ii) PXIL	24.28	0.24	0.03
3	Through DSM	1825.65	18.10	2.05
	<b>Total</b>	<b>10088.57</b>	<b>100.00</b>	<b>11.35</b>
	<b>Total Generation</b>	<b>88858.89</b>	–	–

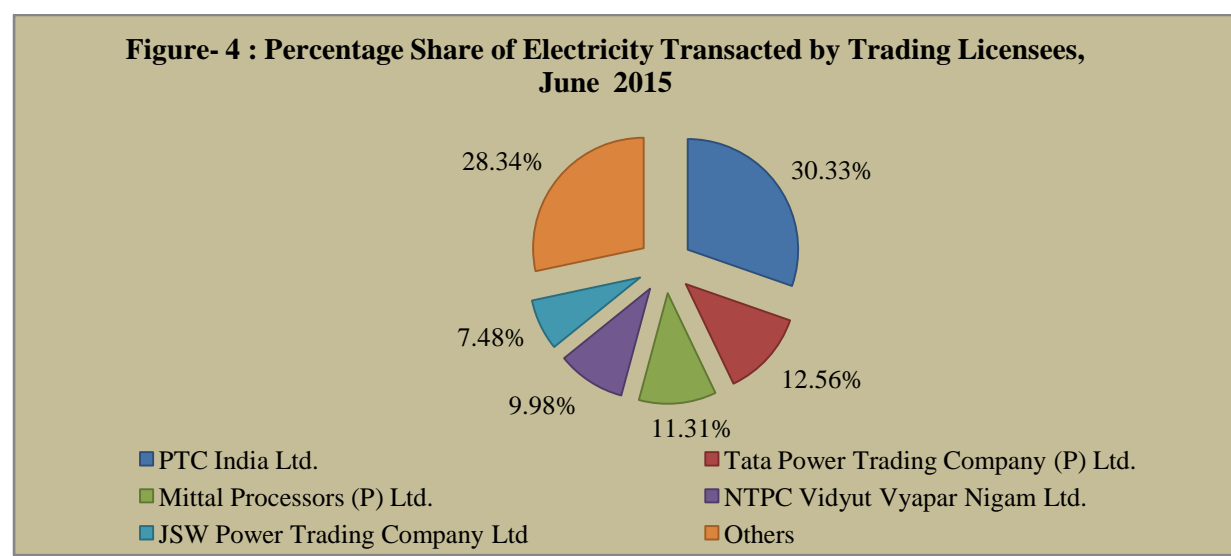
Source: NLDC



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



<b>Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, JUNE 2015</b>			
<b>Sr. No</b>	<b>Name of the Trading Licensee</b>	<b>% Share in total Volume transacted by Trading Licensees</b>	<b>Herfindahl-Hirschman Index</b>
1	PTC India Ltd.	30.33	0.0920
2	Tata Power Trading Company (P) Ltd.	12.56	0.0158
3	Mittal Processors (P) Ltd.	11.31	0.0128
4	GMR Energy Trading Ltd.	9.98	0.0100
5	JSW Power Trading Company Ltd	7.48	0.0056
6	Manikaran Power Ltd.	7.40	0.0055
7	NTPC Vidyut Vyapar Nigam Ltd.	3.73	0.0014
8	Shree Cement Ltd.	3.53	0.0012
9	Adani Enterprises Ltd.	3.34	0.0011
10	Knowledge Infrastructure Systems (P) Ltd	3.05	0.0009
11	Jaiprakash Associates Ltd.	2.35	0.0006
12	Instinct Infra & Power Ltd.	1.22	0.0001
13	Arunachal Pradesh Power Corporation (P) ltd	0.90	0.0001
14	National Energy Trading & Services Ltd.	0.85	0.0001
15	RPG Power Trading Company Ltd.	0.77	0.0001
16	SN Power Markets Pvt. Ltd.	0.75	0.0001
17	Customized Energy Solutions India (P) Ltd.	0.19	0.0000
18	My Home Power Private Ltd.	0.18	0.0000
19	Essar Electric Power Development Corp. Ltd.	0.10	0.0000
<b>TOTAL</b>		<b>100.00</b>	<b>0.1473</b>
<b>Top 5 trading licensees</b>		<b>71.66</b>	
<i>Note 1: Volume of electricity transacted by the trading licensees includes bilateral transactions (inter-State &amp; intra-State) and the transactions undertaken through power exchanges.</i>			
<i>Note 2: Volume of electricity transacted by Global Energy Ltd is not included.</i>			
<i>Source: Information submitted by trading licensees</i>			





<b>Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS JUNE,2015</b>		
<b>Sr.No</b>		<b>Sale Price of Traders (₹/kWh)</b>
1	Minimum	2.29
2	Maximum	7.99
3	Weighted Average	3.90

Source: Information submitted by trading licensees

<b>Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE) JUNE,2015</b>		
<b>Sr.No</b>	<b>Period of Trade</b>	<b>Sale Price of Traders (₹/kWh)</b>
1	RTC	3.98
2	PEAK	3.91
3	OFF PEAK	3.54

Source: Information submitted by trading licensees

<b>Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES JUNE,2015</b>			
<b>Sr.No</b>	<b>ACP</b>	<b>Price in IEX (₹/kWh)</b>	<b>Price in PXIL (₹/kWh)</b>
1	Minimum	0.50	0.36
2	Maximum	17.50	6.51
3	Weighted Average	2.72	2.77

Source: Information submitted by IEX and PXIL

<b>Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX JUNE,2015</b>			
<b>Sr.No</b>	<b>Term ahead contracts</b>	<b>Actual Scheduled Volume (MUs)</b>	<b>Weighted Average Price (₹/kWh)</b>
1	Intra-Day Contracts	15.02	3.53
2	Day Ahead Contingency Contracts	7.61	3.69
	<b>Total</b>	<b>22.63</b>	<b>3.59</b>

Source: IEX

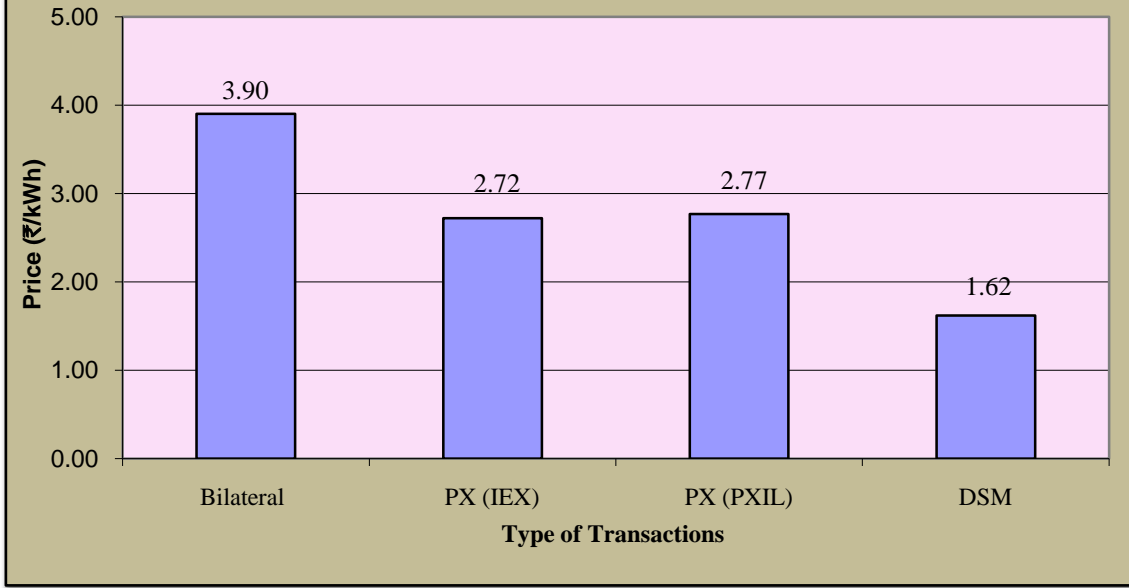
<b>Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL JUNE,2015</b>			
<b>Sr.No</b>	<b>Term ahead contracts</b>	<b>Actual Scheduled Volume (MUs)</b>	<b>Weighted Average Price (₹/kWh)</b>
1	Intra-Day Contracts	9.77	2.28
	<b>Total</b>	<b>9.77</b>	<b>2.28</b>

Source: PXIL

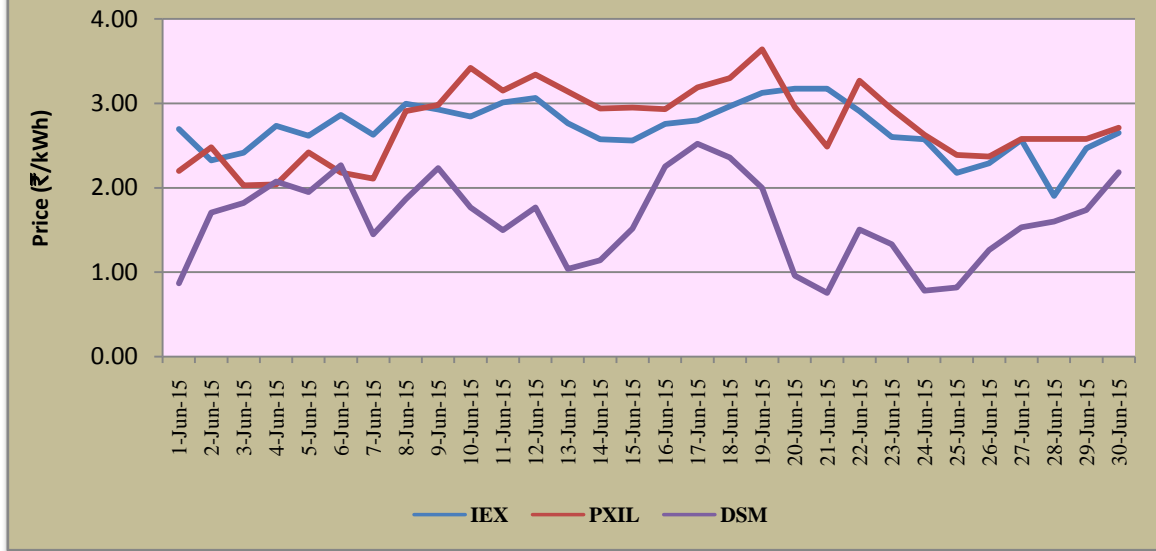
<b>Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH DSM JUNE,2015</b>		
<b>Sr.No</b>		<b>Price in All India Grid (₹/kWh)</b>
1	Minimum	0
2	Maximum	8.24
3	Average	1.62

Source: NLDC

**Figure-5: Price of Electricity in Short-term Transactions , June 2015**



**Figure-6: Price of Electricity in Short-term Transactions, June 2015 (Day-wise)**



<b>Table-9: VOLUME OF ELECTRICITY SOLD THROUGH BILATERAL TRADE, JUNE 2015</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Sale (MUs)</b>	<b>% of Volume</b>
HIMACHAL PRADESH	611.94	11.35
RAJASTHAN	474.49	8.80
STERLITE	387.66	7.19
THERMAL POWERTECH	335.86	6.23
J & K	322.85	5.99
COASTGEN	303.10	5.62
GMR KAMALANGA	255.38	4.74
KARCHAM WANGTOO	241.85	4.48
DVC	235.85	4.37
KARNATAKA	235.39	4.36
SIMHAPURI	234.10	4.34
GUJARAT	233.56	4.33
JITPL	209.01	3.88
MP	177.24	3.29
LANKO KONDAPALLI	164.05	3.04
JINDAL STAGE-II	147.01	2.73
SHREE CEMENT	123.85	2.30
JINDAL POWER	95.89	1.78
ADHUNIK POWER LTD	89.48	1.66
MEENAKSHI	79.10	1.47
MAITHON POWER LTD	76.17	1.41
ODISHA	72.72	1.35
AD HYDRO	68.08	1.26
MEGHALAYA	45.53	0.84
EMCO	36.92	0.68
DAGACHU	33.68	0.62
KORBA WEST POWER	28.59	0.53
CHHATTISGARH	19.25	0.36
ANDHRA PRADESH	17.64	0.33
ACBIL	9.36	0.17
TELANGANA	7.93	0.15
TRIPURA	7.41	0.14
ASSAM	3.76	0.07
DELHI	2.83	0.05
MANIPUR	2.59	0.05
HARYANA	2.40	0.04
GOA	0.14	0.00
ESSAR POWER	0.07	0.00
DELHI	2.83	0.05
<b>Total</b>	<b>5392.71</b>	<b>100.00</b>
<b>Volume of Sold by top 5 States</b>	<b>2132.80</b>	<b>39.55</b>

**Table-10: VOLUME OF ELECTRICITY PURCHASED THROUGH BILATERAL TRADE,  
JUNE 2015**

<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Purchase (MUs)</b>	<b>% of Volume</b>
TELANGANA	930.38	16.36
HARYANA	692.91	12.18
UTTAR PRADESH	585.11	10.29
PUNJAB	568.15	9.99
ANDHRA PRADESH	524.72	9.23
MAHARASHTRA	364.02	6.40
GUJARAT	336.40	5.92
DELHI	326.42	5.74
WEST BENGAL	319.54	5.62
TAMIL NADU	307.17	5.40
BIHAR	253.58	4.46
JHARKHAND	111.36	1.96
RAJASTHAN	86.55	1.52
KERALA	84.02	1.48
ASSAM	57.28	1.01
UTTARAKHAND	37.71	0.66
ODISHA	30.35	0.53
MANIPUR	28.58	0.50
CHHATTISGARH	24.48	0.43
CHANDIGARH	7.20	0.13
ESSAR STEEL	5.43	0.10
J & K	2.93	0.05
KARNATAKA	1.06	0.02
GOA	0.90	0.02
MEGHALAYA	0.44	0.01
<b>Total</b>	<b>5686.71</b>	<b>100.00</b>
<b>Volume of Purchase by top 5 States</b>	<b>3301.27</b>	<b>58.05</b>

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

Name of the State/UT/Other Regional Entity	Volume of Sale (MUs)	% of Volume
HIMACHAL PRADESH	197.51	8.00
JITPL	185.58	7.52
KARCHAM WANGTOO	169.91	6.89
MP	162.17	6.57
GUJARAT	147.90	5.99
NHPC STATIONS	100.90	4.09
HARYANA	93.39	3.78
THERMAL POWERTECH	87.21	3.53
DCPP	86.01	3.49
KARNATAKA	81.60	3.31
MAHARASHTRA	76.19	3.09
CHHATTISGARH	73.99	3.00
NJPC	72.16	2.92
TELANGANA	66.14	2.68
SHREE CEMENT	62.36	2.53
JAYPEE NIGRIE	61.49	2.49
STERLITE	55.46	2.25
DELHI	50.89	2.06
KORBA WEST POWER	49.73	2.02
AD HYDRO	48.52	1.97
SIKKIM	48.14	1.95
JINDAL STAGE-II	46.61	1.89
TRIPURA	44.01	1.78
LANCO BUDHIL	42.75	1.73
ACBIL	41.25	1.67
SIMHAPURI	36.40	1.48
RAJASTHAN	35.48	1.44
J & K	35.23	1.43
ODISHA	27.53	1.12
MANIPUR	22.22	0.90
CHUZACHEN HEP	22.12	0.90
ASSAM	17.08	0.69
MEGHALAYA	16.21	0.66
MB POWER	15.13	0.61
WEST BENGAL	13.59	0.55
ANDHRA PRADESH	12.76	0.52
MIZORAM	10.56	0.43
TEESTA HEP	9.63	0.39
JINDAL POWER	7.90	0.32
ARUNACHAL PRADESH	7.68	0.31
MAITHON POWER LTD	5.65	0.23
MALANA	5.39	0.22
MEENAKSHI	4.89	0.20
KERALA	2.66	0.11
NAGALAND	2.14	0.09
RANGIT HEP	2.10	0.09
DVC	1.71	0.07
LOKTAK	1.06	0.04
EMCO	0.66	0.03
CHANDIGARH	0.32	0.01
GMR KAMALANGA	0.30	0.01
<b>Total</b>	<b>2467.65</b>	<b>100.00</b>
<b>Volume of sale by top 5 Sellers</b>	<b>863.07</b>	<b>34.98</b>

<b>Table-12: VOLUME OF ELECTRICITY PURCHASED THROUGH POWER EXCHANGES JUNE 2015</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Purchase (MUs)</b>	<b>% of Volume</b>
RAJASTHAN	511.15	20.71
GUJARAT	232.63	9.42
ESSAR STEEL	231.35	9.37
WEST BENGAL	180.47	7.31
HARYANA	144.12	5.84
TELANGANA	127.83	5.18
PUNJAB	125.71	5.09
KARNATAKA	124.99	5.06
KERALA	117.74	4.77
DELHI	94.07	3.81
ANDHRA PRADESH	88.20	3.57
TAMIL NADU	81.71	3.31
BIHAR	79.73	3.23
UTTARAKHAND	65.60	2.66
MAHARASHTRA	61.47	2.49
MP	56.18	2.28
DAMAN AND DIU	32.46	1.32
BALCO	28.14	1.14
J & K	25.60	1.04
HIMACHAL PRADESH	12.21	0.49
CHHATTISGARH	10.20	0.41
ODISHA	7.32	0.30
ASSAM	6.78	0.27
MEGHALAYA	6.69	0.27
CHANDIGARH	5.55	0.22
GOA	5.55	0.22
NAGALAND	4.43	0.18
ARUNACHAL PRADESH	0.37	0.02
<b>Total</b>	<b>2468.27</b>	<b>100.00</b>
<b>Volume of purchase by top 5 Buyers</b>	<b>1299.73</b>	<b>52.66</b>

<b>Table-13: VOLUME OF ELECTRICITY EXPORTED THROUGH DSM, JUNE 2015</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Exports (MUs)</b>	<b>% of Volume</b>
UTTAR PRADESH	121.63	8.47
GUJARAT	118.40	8.25
MAHARASHTRA	100.49	7.00
TAMILNADU	96.77	6.74
PUNJAB	89.72	6.25
BIHAR	82.57	5.75
MP	68.63	4.78
HARYANA	60.38	4.21
RAJASTHAN	48.63	3.39
DELHI	46.92	3.27
JHARKHAND	44.81	3.12
TELANGANA	43.03	3.00
WEST BENGAL	40.82	2.84
J & K	40.40	2.81
ANDHRA PRADESH	36.01	2.51
CHHATTISGARH	28.87	2.01
KARNATAKA	28.43	1.98
DVC	28.21	1.97
ASSAM	25.45	1.77
UTTARAKHAND	25.29	1.76
ODISHA	19.73	1.37
GOA	16.11	1.12
ESSAR STEEL	15.12	1.05
MEGHALAYA	13.03	0.91
JITPL	12.35	0.86
NHPC STATIONS	11.16	0.78
STERLITE	9.62	0.67
CGPL	9.49	0.66
TEESTA HEP	9.30	0.65
ARUNACHAL PRADESH	8.72	0.61
HIMACHAL PRADESH	8.69	0.61
DADRA & NAGAR HAVELI	8.35	0.58
KARCHAM WANGTOO	7.49	0.52
NJPC	7.00	0.49
JAYPEE NIGRIE	6.60	0.46
KERALA	6.46	0.45
CHUZACHEN HEP	5.48	0.38
SIKKIM	5.32	0.37
NSPCL	4.89	0.34
MAITHON POWER LTD	4.47	0.31
RANGANADI HEP	4.47	0.31
DAMAN AND DIU	4.32	0.30
PONDICHERRY	4.28	0.30
MANIPUR	3.94	0.27
KSK MAHANADI	3.68	0.26
GMR KAMALANGA	3.59	0.25

AD HYDRO	3.44	0.24
SIMHAPURI	3.13	0.22
BALCO	2.97	0.21
CHANDIGARH	2.88	0.20
JINDAL POWER	2.83	0.20
MEENAKSHI	2.67	0.19
NEEPCO STATIONS	2.57	0.18
ADHUNIK POWER LTD	2.23	0.16
RANGIT HEP	2.01	0.14
THERMAL POWERTECH	1.92	0.13
NAGALAND	1.78	0.12
DCPP	1.73	0.12
TRIPURA	1.67	0.12
KORBA WEST POWER	1.57	0.11
DAGACHU	1.43	0.10
DGEN MEGA POWER	1.41	0.10
COASTGEN	1.36	0.09
LANCO BUDHIL	1.23	0.09
EMCO	1.16	0.08
SHREE CEMENT	1.06	0.07
LANKO_AMK	0.83	0.06
LOKTAK	0.72	0.05
MB POWER	0.72	0.05
LANKO KONDAPALLI	0.71	0.05
ACBIL	0.65	0.05
MALANA	0.51	0.04
MIZORAM	0.33	0.02
URI-2	0.28	0.02
DOYANG HEP	0.22	0.02
VANDANA VIDYUT	0.19	0.01
RGPPL(DABHOL)	0.02	0.00
<b>Total</b>	<b>1435.32</b>	<b>100.00</b>
<b>Volume of Export by top 5 States</b>	<b>527.01</b>	<b>36.72</b>



<b>Table-14: VOLUME OF ELECTRICITY IMPORTED THROUGH DSM, JUNE 2015</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Import (MUs)</b>	<b>% of Volume</b>
HARYANA	79.53	6.13
MAHARASHTRA	75.71	5.84
PUNJAB	75.12	5.79
UTTAR PRADESH	72.30	5.57
RAJASTHAN	66.83	5.15
KARNATAKA	56.86	4.38
WEST BENGAL	55.94	4.31
ANDHRA PRADESH	55.22	4.26
KERALA	48.52	3.74
CHHATTISGARH	45.33	3.50
BIHAR	44.61	3.44
TELANGANA	37.90	2.92
DELHI	34.92	2.69
ODISHA	34.64	2.67
HIMACHAL PRADESH	34.37	2.65
DVC	31.49	2.43
UTTARAKHAND	28.34	2.19
ASSAM	23.84	1.84
J & K	23.08	1.78
GUJARAT	21.31	1.64
STERLITE	20.44	1.58
TAMILNADU	20.31	1.57
ESSAR STEEL	19.83	1.53
MP	18.82	1.45
GOA	17.02	1.31
TRIPURA	16.11	1.24
CHANDIGARH	12.02	0.93
DCPP	11.76	0.91
JAYPEE NIGRIE	11.73	0.90
NHPC STATIONS	11.16	0.86
JITPL	10.33	0.80
CGPL	10.19	0.79
JINDAL POWER	9.97	0.77
AD HYDRO	8.41	0.65
BALCO	8.26	0.64
DAMAN AND DIU	7.58	0.58
DAGACHU	7.55	0.58
MIZORAM	7.43	0.57
NAGALAND	7.10	0.55
JHARKHAND	6.88	0.53
NSPCL	6.81	0.53
KORBA WEST POWER	6.81	0.52
MAITHON POWER LTD	6.18	0.48
DADRA & NAGAR HAVELI	6.03	0.46

ACBIL	4.93	0.38
ARUNACHAL PRADESH	4.88	0.38
KARCHAM WANGTOO	4.53	0.35
RGPPL(DABHOL)	4.19	0.32
PONDICHERRY	4.10	0.32
LANKO KONDAPALLI	4.05	0.31
MANIPUR	4.03	0.31
NJPC	3.84	0.30
EMCO	3.41	0.26
SIMHAPURI	3.33	0.26
SHREE CEMENT	3.28	0.25
SIKKIM	3.24	0.25
CHUZACHEN HEP	3.14	0.24
MB POWER	3.00	0.23
GMR KAMALANGA	2.83	0.22
DGEN MEGA POWER	2.82	0.22
COASTGEN	2.78	0.21
MEGHALAYA	2.69	0.21
GMR CHHATTISGARH	2.66	0.21
ADHUNIK POWER LTD	1.55	0.12
MALANA	1.48	0.11
LANKO_AMK	1.40	0.11
THERMAL POWERTECH	1.39	0.11
ESSAR POWER	1.30	0.10
MEENAKSHI	1.26	0.10
NEEPCO STATIONS	0.96	0.07
LANCO BUDHIL	0.92	0.07
LOKTAK	0.64	0.05
DB POWER	0.62	0.05
DHARIWAL POWER	0.58	0.04
TEESTA HEP	0.56	0.04
URI-2	0.44	0.03
RANGANADI HEP	0.42	0.03
KSK MAHANADI	0.38	0.03
DOYANG HEP	0.25	0.02
RANGIT HEP	0.23	0.02
ADANI HVDC	0.13	0.01
<b>Total</b>	<b>1296.81</b>	<b>100.00</b>
<b>Volume of Export by top 5 States</b>	<b>369.48</b>	<b>28.49</b>

**Table-15: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY  
(REGIONAL ENTITY-WISE), JUNE 2015**

<b>Sr. No.</b>	<b>Name of the State/UT/Other Regional Entity</b>	<b>Total volume of net short-term transactions of electricity in (MUs)*</b>
1	TELANGANA	979.01
2	HARYANA	760.39
3	PUNJAB	679.26
4	ANDHRA PRADESH	601.72
5	UTTAR PRADESH	535.78
6	WEST BENGAL	501.54
7	DELHI	354.75
8	MAHARASHTRA	324.52
9	TAMILNADU	312.42
10	BIHAR	295.35
11	ESSAR STEEL	241.49
12	KERALA	241.15
13	UTTARAKHAND	106.37
14	RAJASTHAN	105.94
15	GUJARAT	90.48
16	JHARKHAND	73.44
17	ASSAM	41.61
18	DAMAN AND DIU	35.73
19	BALCO	33.43
20	CHANDIGARH	21.57
21	NAGALAND	7.61
22	GOA	7.22
23	RGPPL(DABHOL)	4.18
24	MANIPUR	3.86
25	GMR CHHATTISGARH	2.66
26	NSPCL	1.92
27	DGEN MEGA POWER	1.41
28	ESSAR POWER	1.24
29	CGPL	0.70
30	DB POWER	0.62
31	DHARIWAL POWER	0.58
32	LANKO_AMK	0.57
33	URI-2	0.16
34	ADANI HVDC	0.13
35	DOYANG HEP	0.02
36	PONDICHERRY	-0.17
37	VANDANA VIDYUT	-0.19
38	LOKTAK	-1.14
39	NEEPCO STATIONS	-1.61
40	DADRA & NAGAR HAVELI	-2.32
41	KSK MAHANADI	-3.30
42	MIZORAM	-3.46
43	RANGIT HEP	-3.88
44	RANGANADI HEP	-4.05
45	MALANA	-4.42
46	ARUNACHAL PRADESH	-11.15
47	MB POWER	-12.85
48	TEESTA HEP	-18.37

49	CHUZACHEN HEP	-24.45
50	DAGACHU	-27.55
51	EMCO	-35.33
52	TRIPURA	-36.98
53	CHHATTISGARH	-42.10
54	LANCO BUDHIL	-43.06
55	ACBIL	-46.33
56	ODISHA	-47.67
57	SIKKIM	-50.22
58	JAYPEE NIGRIE	-56.36
59	MEGHALAYA	-64.95
60	KORBA WEST POWER	-73.08
61	NJPC	-75.32
62	DCPP	-75.97
63	MAITHON POWER LTD	-80.11
64	MEENAKSHI	-85.39
65	ADHUNIK POWER LTD	-90.16
66	JINDAL POWER	-96.65
67	NHPC STATIONS	-100.90
68	AD HYDRO	-111.63
69	LANKO KONDAPALLI	-160.70
70	KARNATAKA	-162.51
71	SHREE CEMENT	-183.99
72	JINDAL STAGE-II	-193.62
73	DVC	-234.27
74	GMR KAMALANGA	-256.44
75	SIMHAPURI	-270.30
76	COASTGEN	-301.68
77	MP	-333.04
78	J & K	-346.87
79	JITPL	-396.61
80	KARCHAM WANGTOO	-414.73
81	THERMAL POWERTECH	-423.59
82	STERLITE	-432.30
83	HIMACHAL PRADESH	-771.56
* Total volume of net short-term transactions of electricity includes net of transactions of electricity through bilateral, power exchange and DSM (-) indicates sale and (+) indicates purchase		

<b>Table-16: DETAILS OF CONGESTION IN POWER EXCHANGES, JUNE 2015</b>			
	<b>Details of Congestion</b>	<b>IEX</b>	<b>PXIL</b>
A	Unconstrained Cleared Volume* (MUs)	2740.44	27.84
B	Actual Cleared Volume and hence scheduled (MUs)	2447.45	24.28
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	293.00	3.56
D	Volume of electricity that could not be cleared as % to Unconstrained Cleared Volume	10.69%	12.78%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	91.87%	77.92%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	23.26%	19.53%
	6.00 - 12.00 hours	25.24%	27.08%
	12.00 - 18.00 hours	26.23%	27.77%
	18.00 - 24.00 hours	25.27%	25.61%
<i>* This power would have been scheduled had there been no congestion.</i>			
Source: IEX & PXIL& NLDC			

<b>Table-17: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA (MUs), JUNE 2015 (DAY-WISE)</b>						<b>Total Electricity Generation (MU) as given at CEA Website</b>
<b>Date</b>	<b>Bilateral</b>		<b>Power Exchange (Area Clearing Volume# of Day Ahead Market)</b>		<b>Deviation Settlement (Over Draw+ Under Generation)</b>	
	<b>Through Traders and PXs**</b>	<b>Direct</b>	<b>IEX</b>	<b>PXI</b>		
1-Jun-15	99.12	76.01	100.79	0.99	70.39	2935.31
2-Jun-15	100.21	79.83	85.10	1.07	57.69	2980.67
3-Jun-15	99.74	82.41	92.37	0.91	51.47	3034.36
4-Jun-15	106.37	81.98	101.03	0.92	49.82	3081.27
5-Jun-15	105.75	84.09	91.45	0.85	48.49	3087.83
6-Jun-15	107.70	86.70	83.95	1.49	51.32	3095.78
7-Jun-15	104.86	82.72	86.59	0.84	51.32	2999.15
8-Jun-15	112.44	88.03	94.79	0.53	50.28	3105.01
9-Jun-15	109.57	93.13	96.26	0.53	52.73	3085.13
10-Jun-15	136.68	94.03	82.82	1.46	58.69	3133.44
11-Jun-15	134.69	85.82	90.25	1.01	57.96	3113.76
12-Jun-15	122.28	82.89	93.08	1.00	55.36	3105.70
13-Jun-15	112.65	80.86	87.51	1.11	70.11	3028.36
14-Jun-15	123.68	74.76	68.49	1.17	58.64	2737.02
15-Jun-15	128.06	82.16	73.99	1.06	54.39	2889.89
16-Jun-15	121.65	78.42	75.03	1.17	87.98	2985.05
17-Jun-15	123.80	78.95	81.08	0.67	51.28	3052.86
18-Jun-15	122.28	80.50	83.09	0.71	52.29	3081.28
19-Jun-15	125.92	67.56	87.01	0.77	57.98	3066.88
20-Jun-15	116.84	65.89	86.05	0.66	65.46	2955.18
21-Jun-15	118.52	64.63	72.39	0.43	69.78	2784.97
22-Jun-15	120.67	65.06	71.01	0.50	66.20	2865.49
23-Jun-15	112.66	77.64	67.47	0.50	67.35	2862.99
24-Jun-15	117.87	81.00	72.48	0.66	68.97	2714.77
25-Jun-15	111.73	78.98	72.12	0.46	69.17	2645.67
26-Jun-15	106.68	77.82	75.94	0.46	63.71	2752.99
27-Jun-15	108.44	77.14	73.34	1.02	66.05	2809.50
28-Jun-15	97.56	66.60	63.18	0.56	67.02	2893.08
29-Jun-15	101.84	77.33	64.44	0.46	68.03	2980.91
30-Jun-15	113.96	77.44	70.86	0.31	65.70	2994.59
<b>Total</b>	<b>3424.25</b>	<b>2370.40</b>	<b>2443.98</b>	<b>24.28</b>	<b>1825.65</b>	<b>88858.89</b>

Source: NLDC

\* Gross Electricity Generation excluding electricity generation from renewables and captive power plants.

\*\* The volume of bilateral through PXs represents the volume through term-ahead contracts.

# Area Clearing Volume represents the scheduled volume of all the bid areas.

**Table-18: PRICE OF ELECTRICITY IN SHORT-TERM TRANSACTIONS (₹/kWh), JUNE 2015 (DAY-WISE)**

Market Segment	Day ahead market of IEX			Day ahead market of PXIL			Under Drawl/Over Drawl from the Grid (DSM)		
	Date	Minimum ACP	Maximum ACP	Weighted Average Price*	Minimum ACP	Maximum ACP	Weighted Average Price*	All India Grid	
Minimum Price								Maximum Price	Average Price**
1-Jun-15	0.90	17.50	2.70	1.47	2.80	2.20	0.00	3.45	0.87
2-Jun-15	0.80	8.01	2.32	1.20	3.10	2.48	0.00	5.74	1.71
3-Jun-15	0.75	10.00	2.42	0.86	2.64	2.03	0.00	3.45	1.82
4-Jun-15	1.10	6.61	2.73	0.75	2.87	2.04	0.00	6.36	2.07
5-Jun-15	0.80	6.69	2.62	1.45	3.10	2.42	0.00	5.11	1.95
6-Jun-15	0.50	6.01	2.86	0.80	3.06	2.18	0.00	8.24	2.27
7-Jun-15	0.65	4.26	2.63	0.80	2.96	2.11	0.00	5.11	1.45
8-Jun-15	1.10	4.25	3.00	1.65	4.01	2.91	0.00	3.45	1.87
9-Jun-15	1.10	4.40	2.93	1.18	4.14	2.98	0.00	6.36	2.23
10-Jun-15	0.90	4.50	2.84	1.18	4.50	3.42	0.00	5.11	1.77
11-Jun-15	0.80	5.00	3.01	0.36	4.28	3.15	0.00	5.11	1.50
12-Jun-15	1.86	5.14	3.06	1.74	4.51	3.34	0.00	3.45	1.77
13-Jun-15	1.10	4.82	2.76	2.20	4.66	3.14	0.00	4.91	1.04
14-Jun-15	1.76	5.00	2.58	1.59	4.07	2.94	0.00	5.32	1.14
15-Jun-15	1.99	4.50	2.56	1.35	4.63	2.95	0.00	3.45	1.52
16-Jun-15	2.04	5.30	2.76	2.04	4.38	2.93	0.36	6.16	2.25
17-Jun-15	2.00	5.50	2.80	2.20	5.09	3.19	0.00	7.82	2.52
18-Jun-15	1.95	6.83	2.97	2.29	4.70	3.30	0.00	7.82	2.36
19-Jun-15	2.05	5.50	3.13	2.50	6.51	3.64	0.00	5.74	2.00
20-Jun-15	1.62	5.60	3.17	1.94	4.46	2.96	0.00	3.24	0.96
21-Jun-15	1.10	5.65	3.17	1.47	4.75	2.49	0.00	5.74	0.76
22-Jun-15	1.20	5.65	2.91	1.72	5.65	3.27	0.00	5.32	1.51
23-Jun-15	0.80	5.70	2.60	1.57	5.21	2.93	0.00	3.45	1.33
24-Jun-15	0.80	4.76	2.58	1.00	4.50	2.63	0.00	3.24	0.78
25-Jun-15	0.70	4.51	2.18	0.95	4.48	2.39	0.00	5.74	0.82
26-Jun-15	0.80	4.81	2.29	0.95	4.01	2.37	0.00	3.45	1.26
27-Jun-15	1.10	6.01	2.57	0.95	4.20	2.58	0.00	3.45	1.53
28-Jun-15	1.10	4.00	1.90	1.51	4.75	2.58	0.00	7.20	1.60
29-Jun-15	1.10	5.00	2.47	1.10	3.72	2.58	0.00	3.45	1.74
30-Jun-15	1.40	4.90	2.65	1.82	4.85	2.71	0.00	5.11	2.19
	<b>0.50#</b>	<b>17.50#</b>	<b>2.72</b>	<b>0.36#</b>	<b>6.51#</b>	<b>2.77</b>	<b>0.00#</b>	<b>8.24#</b>	<b>1.62</b>

Source: Data on price of PX transactions from IEX and PXIL and data on Deviation 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 of Deviation price of 96 time blocks of 15 minutes each in a day.

# Minimum/Maximum in the month

**Table-19: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY\*-WISE)  
(MUs), JUNE 2015**

Name of the State/UT/Other Regional Entity	Through Bilateral			Through Power Exchange			Through DSM with Regional Grid			Total Net***
	Sale	Purchase	Net**	Sale	Purchase	Net**	Export (Under Drawl)	Import (Over Drawl)	Net**	
PUNJAB	0.00	568.15	568.15	0.00	125.71	125.71	75.12	89.72	-14.60	679.26
HARYANA	2.40	692.91	690.51	93.39	144.12	50.73	79.53	60.38	19.15	760.39
RAJASTHAN	474.49	86.55	-387.94	35.48	511.15	475.68	66.83	48.63	18.20	105.94
DELHI	2.83	326.42	323.59	50.89	94.07	43.18	34.92	46.92	-12.01	354.75
UTTAR PRADESH	0.00	585.11	585.11	0.00	0.00	0.00	72.30	121.63	-49.33	535.78
UTTARAKHAND	0.00	37.71	37.71	0.00	65.60	65.60	28.34	25.29	3.05	106.37
HIMACHAL PRADESH	611.94	0.00	-611.94	197.51	12.21	-185.30	34.37	8.69	25.68	-771.56
J & K	322.85	2.93	-319.93	35.23	25.60	-9.62	23.08	40.40	-17.32	-346.87
CHANDIGARH	0.00	7.20	7.20	0.32	5.55	5.23	12.02	2.88	9.14	21.57
MP	177.24	0.00	-177.24	162.17	56.18	-105.99	18.82	68.63	-49.81	-333.04
MAHARASHTRA	0.00	364.02	364.02	76.19	61.47	-14.72	75.71	100.49	-24.78	324.52
GUJARAT	233.56	336.40	102.84	147.90	232.63	84.73	21.31	118.40	-97.10	90.48
CHHATTISGARH	19.25	24.48	5.23	73.99	10.20	-63.79	45.33	28.87	16.46	-42.10
GOA	0.14	0.90	0.76	0.00	5.55	5.55	17.02	16.11	0.91	12.69
DAMAN AND DIU	0.00	0.00	0.00	0.00	32.46	32.46	7.58	4.32	3.26	35.73
DADRA & NAGAR HAVELI	0.00	0.00	0.00	0.00	0.00	0.00	6.03	8.35	-2.32	-2.32
ANDHRA PRADESH	17.64	524.72	507.08	12.76	88.20	75.44	55.22	36.01	19.20	601.72
KARNATAKA	235.39	1.06	-234.33	81.60	124.99	43.39	56.86	28.43	28.44	-162.51
KERALA	0.00	84.02	84.02	2.66	117.74	115.08	48.52	6.46	42.06	241.15
TAMILNADU	0.00	307.17	307.17	0.00	81.71	81.71	20.31	96.77	-76.47	312.42
PONDICHERRY	0.00	0.00	0.00	0.00	0.00	0.00	4.10	4.28	-0.17	-0.17
TELANGANA	7.93	930.38	922.45	66.14	127.83	61.69	37.90	43.03	-5.12	-5.47
WEST BENGAL	0.00	319.54	319.54	13.59	180.47	166.88	55.94	40.82	15.12	979.01
ODISHA	72.72	30.35	-42.36	27.53	7.32	-20.21	34.64	19.73	14.91	501.54
BIHAR	0.00	253.58	253.58	0.00	79.73	79.73	44.61	82.57	-37.96	-47.67
JHARKHAND	0.00	111.36	111.36	0.00	0.00	0.00	6.88	44.81	-37.93	295.35
SIKKIM	0.00	0.00	0.00	48.14	0.00	-48.14	3.24	5.32	-2.08	73.44
DVC	235.85	0.00	-235.85	1.71	0.00	-1.71	31.49	28.21	3.28	-50.22
ARUNACHAL PRADESH	0.00	0.00	0.00	7.68	0.37	-7.31	4.88	8.72	-3.84	-234.27
ASSAM	3.76	57.28	53.52	17.08	6.78	-10.30	23.84	25.45	-1.61	-11.15
MANIPUR	2.59	28.58	25.99	22.22	0.00	-22.22	4.03	3.94	0.09	41.61
MEGHALAYA	45.53	0.44	-45.08	16.21	6.69	-9.53	2.69	13.03	-10.34	3.86
MIZORAM	0.00	0.00	0.00	10.56	0.00	-10.56	7.43	0.33	7.09	-64.95
NAGALAND	0.00	0.00	0.00	2.14	4.43	2.29	7.10	1.78	5.32	-3.46
TRIPURA	7.41	0.00	-7.41	44.01	0.00	-44.01	16.11	1.67	14.45	7.61
NHPC STATIONS	0.00	0.00	0.00	100.90	0.00	-100.90	11.16	11.16	0.00	-36.98
NJPC	0.00	0.00	0.00	72.16	0.00	-72.16	3.84	7.00	-3.16	-100.90
AD HYDRO	68.08	0.00	-68.08	48.52	0.00	-48.52	8.41	3.44	4.96	-75.32
KARCHAM WANGTOO	241.85	0.00	-241.85	169.91	0.00	-169.91	4.53	7.49	-2.96	-111.63
SHREE CEMENT	123.85	0.00	-123.85	62.36	0.00	-62.36	3.28	1.06	2.22	-414.73
LANCO BUDHIL	0.00	0.00	0.00	42.75	0.00	-42.75	0.92	1.23	-0.30	-183.99



ADANI HVDC	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.13	-43.06
MALANA	0.00	0.00	0.00	5.39	0.00	-5.39	1.48	0.51	0.96	0.13
URI-2	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.28	0.16	-4.42
JINDAL POWER	95.89	0.00	-95.89	7.90	0.00	-7.90	9.97	2.83	7.14	0.16
LANKO_AMK	0.00	0.00	0.00	0.00	0.00	0.00	1.40	0.83	0.57	-96.65
NSPCL	0.00	0.00	0.00	0.00	0.00	0.00	6.81	4.89	1.92	0.57
ACBIL	9.36	0.00	-9.36	41.25	0.00	-41.25	4.93	0.65	4.28	1.92
BALCO	0.00	0.00	0.00	0.00	28.14	28.14	8.26	2.97	5.29	-46.33
RGPPL(DABHOL)	0.00	0.00	0.00	0.00	0.00	0.00	4.19	0.02	4.18	33.43
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	10.19	9.49	0.70	4.18
DCPP	0.00	0.00	0.00	86.01	0.00	-86.01	11.76	1.73	10.03	0.70
EMCO	36.92	0.00	-36.92	0.66	0.00	-0.66	3.41	1.16	2.25	-75.97
VANDANA VIDYUT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	-0.19	-35.33
ESSAR STEEL	0.00	5.43	5.43	0.00	231.35	231.35	19.83	15.12	4.71	-0.19
KSK MAHANADI	0.00	0.00	0.00	0.00	0.00	0.00	0.38	3.68	-3.30	241.49
ESSAR POWER	0.07	0.00	-0.07	0.00	0.00	0.00	1.30	0.00	1.30	-3.30
JINDAL STAGE-II	147.01	0.00	-147.01	46.61	0.00	-46.61	0.00	0.00	0.00	1.24
DB POWER	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.00	0.62	-193.62
DHARIWAL POWER	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.58	0.62
JAYPEE NIGRIE	0.00	0.00	0.00	61.49	0.00	-61.49	11.73	6.60	5.13	0.58
DGEN MEGA POWER	0.00	0.00	0.00	0.00	0.00	0.00	2.82	1.41	1.41	-56.36
GMR CHHATTISGARH	0.00	0.00	0.00	0.00	0.00	0.00	2.66	0.00	2.66	1.41
KORBA WEST POWER	28.59	0.00	-28.59	49.73	0.00	-49.73	6.81	1.57	5.23	2.66
MB POWER	0.00	0.00	0.00	15.13	0.00	-15.13	3.00	0.72	2.28	-73.08
LANKO KONDAPALLI	164.05	0.00	-164.05	0.00	0.00	0.00	4.05	0.71	3.35	-12.85
SIMHAPURI	234.10	0.00	-234.10	36.40	0.00	-36.40	3.33	3.13	0.20	-160.70
MEENAKSHI	79.10	0.00	-79.10	4.89	0.00	-4.89	1.26	2.67	-1.41	-270.30
COASTGEN	303.10	0.00	-303.10	0.00	0.00	0.00	2.78	1.36	1.42	-85.39
THERMAL POWERTECH	335.86	0.00	-335.86	87.21	0.00	-87.21	1.39	1.92	-0.53	-301.68
STERLITE	387.66	0.00	-387.66	55.46	0.00	-55.46	20.44	9.62	10.83	-423.59
MAITHON POWER LTD	76.17	0.00	-76.17	5.65	0.00	-5.65	6.18	4.47	1.71	-432.30
ADHUNIK POWER LTD	89.48	0.00	-89.48	0.00	0.00	0.00	1.55	2.23	-0.68	-80.11
CHUZACHEN HEP	0.00	0.00	0.00	22.12	0.00	-22.12	3.14	5.48	-2.34	-90.16
RANGIT HEP	0.00	0.00	0.00	2.10	0.00	-2.10	0.23	2.01	-1.78	-24.45
GMR KAMALANGA	255.38	0.00	-255.38	0.30	0.00	-0.30	2.83	3.59	-0.76	-3.88
JITPL	209.01	0.00	-209.01	185.58	0.00	-185.58	10.33	12.35	-2.02	-256.44
TEESTA HEP	0.00	0.00	0.00	9.63	0.00	-9.63	0.56	9.30	-8.74	-396.61
DAGACHU	33.68	0.00	-33.68	0.00	0.00	0.00	7.55	1.43	6.12	-18.37
NEEPCO STATIONS	0.00	0.00	0.00	0.00	0.00	0.00	0.96	2.57	-1.61	-27.55
RANGANADI HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.42	4.47	-4.05	-1.61
DOYANG HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.22	0.02	-4.05
LOKTAK	0.00	0.00	0.00	1.06	0.00	-1.06	0.64	0.72	-0.09	0.02
<b>TOTAL</b>	<b>5392.71</b>	<b>5686.71</b>	<b>294.00</b>	<b>2468.27</b>	<b>2468.27</b>	<b>0.00</b>	<b>1296.81</b>	<b>1435.33</b>	<b>-138.52</b>	<b>-1.14</b>

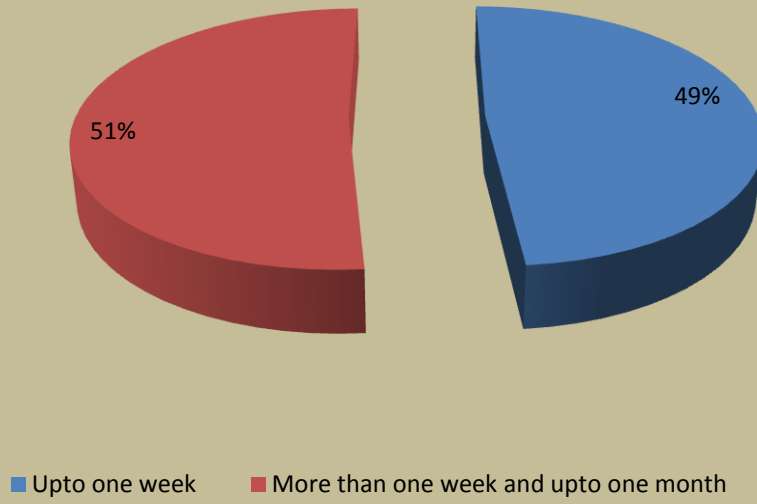
Source: NLDC

\* 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.

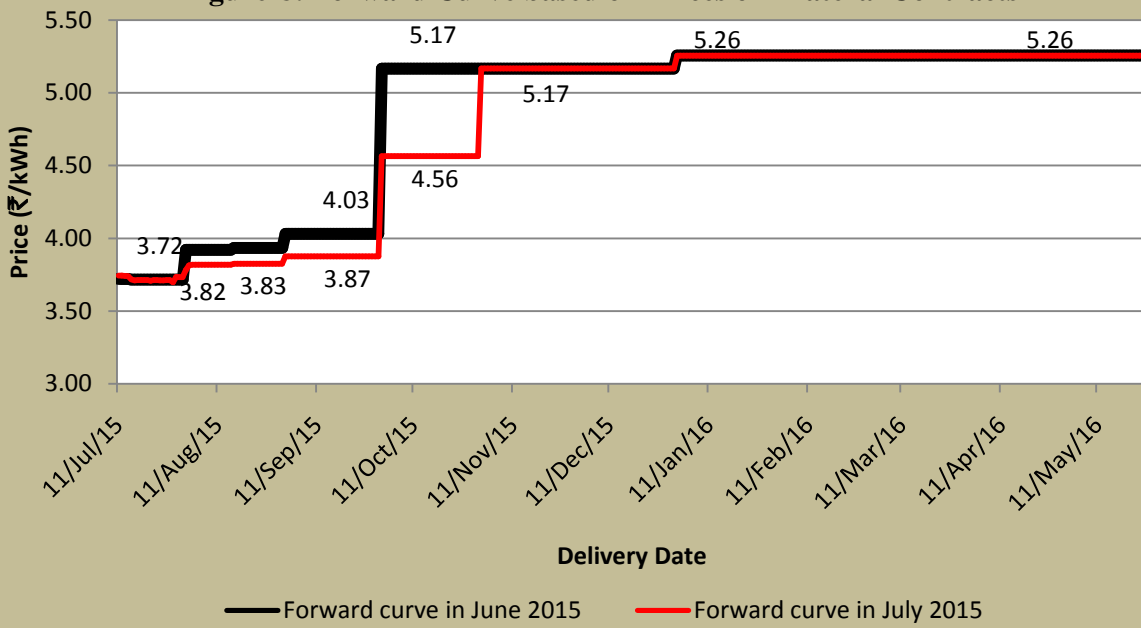
\*\* (-) indicates sale and (+) indicates purchase,

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

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

Sr.No.	Details of REC Transactions	IEX		PXIL	
		Solar	Non-Solar	Solar	Non Solar
A	Volume of Buy Bid	22682	128180	966	33665
B	Volume of Sell Bid	1645873	7976449	556221	4016016
C	Ratio of Buy Bid to Sell Bid Volume	0.01	0.02	0.002	0.01
D	Market Clearing Volume (MWh)	22682	128180	966	33665
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</i> (₹/MWh)	<i>Forbearance Price</i> (₹/MWh)
<i>Solar</i>	<i>3500.00</i>	<i>5800.00</i>
<i>Non-Solar</i>	<i>1500.00</i>	<i>3300.00</i>