

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

May, 2015



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# Contents

S. No.	Contents	Page No
	Contents	2
	List of Tables and Figures	3
	Abbreviations	4
	Introduction	6
I	Volume of Short-term Transactions of Electricity	6
II	Price of Short-term Transactions of Electricity	7
(i)	<i>Price of electricity transacted through Traders</i>	7
(ii)	<i>Price of electricity transacted Through Power Exchange</i>	8
(iii)	<i>Price of electricity transacted Through DSM</i>	8
III	Volume of Short-term Transactions of Electricity (Regional Entity-wise)	8
IV	Congestion on Inter-State Transmission Corridor for Day-Ahead Market on Power Exchanges	9
V	Analysis of Bilateral Contracts executed by Traders in June 2015	10
(i)	<i>Duration of bilateral contracts</i>	10
(ii)	<i>Forward Curve based on Prices of bilateral contracts</i>	10
VI	Volume and Price of Renewable Energy Certificates (RECs)	11
VII	Inferences	12

## List of Tables and Figures

S.No.	List of Tables and Figures	Page No.
<b>I List of Tables</b>		
Table-1	Volume of Short-term Transactions of Electricity in India	14
Table-2	Percentage Share of Electricity Transacted by Trading Licensees	16
Table-3	Price of Electricity Transacted through Traders	17
Table-4	Price of Electricity Transacted through Traders (Time-wise)	17
Table-5	Price of Electricity Transacted through Power Exchanges	17
Table-6	Volume and Price of Electricity in Term Ahead Market of IEX	17
Table-7	Volume and Price of Electricity in Term Ahead Market of PXIL	17
Table-8	Price of Electricity Transacted through DSM	17
Table-9	Volume of Electricity Sale through Bilateral	19
Table-10	Volume of Electricity Purchase through Bilateral	20
Table-11	Volume of Electricity Sale through Power Exchanges	21
Table-12	Volume of Electricity Purchase through Power Exchanges	22
Table-13	Volume of Electricity Export through DSM	23
Table-14	Volume of Electricity Import through DSM	25
Table-15	Total Volume of Net Short-term Transactions of Electricity (Regional Entity-wise)	27
Table-16	Details of Congestion in Power Exchanges	29
Table-17	Volume of Short-term Transactions of Electricity in India (Day-wise)	30
Table-18	Price of Short-term Transactions of Electricity (Day-wise)	31
Table-19	Volume of Short-term Transactions of Electricity (Regional Entity-wise)	32
Table-20	Volume and Price of Renewable Energy Certificates (RECs) Transacted through Power Exchanges	35
<b>II List of Figures</b>		
Figure-1	Volume of Short-term Transactions of Electricity	14
Figure-2	Volume of Various Kinds of Electricity Transactions in Total Electricity Generation	14
Figure-3	Volume of Short-term Transactions of Electricity (Day-wise)	15
Figure-4	Percentage Share of Electricity Transacted by Trading Licensees	16
Figure-5	Price of Short-term Transactions of Electricity	18
Figure-6	Price of Short-term Transactions of Electricity (Day-wise)	18
Figure-7	Bilateral Contracts Executed by Traders in June, 2015	34
Figure-8	Forward Curve based on Prices of Bilateral Contracts	34

## 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 May, 2015 is as under:

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

During the month of May 2015, total electricity generation excluding generation from renewable and captive power plants in India was 94942.22 MUs (Table-1).

Of the total electricity generation, 8981.60 MUs (9.46%) were transacted through short-term, comprising of 4265.74 MUs (4.49 %) through bilateral (through traders and term-ahead contracts on power exchanges and directly between distribution companies), followed by 2913.41 MUs (3.07%) through day ahead collective transactions on power exchanges (IEX and PXIL) and 1802.45 MUs (1.90%) through DSM (Table-1 & Figure-2).

Of the total short-term transactions, bilateral constitutes 47.49% (30.84% through traders and term-ahead contracts on power exchanges and 16.65% directly between distribution companies) followed by 32.44 % through day ahead collective transactions on power exchanges and 20.07% 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 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 31.05.2015. In May 2015, 22 trading licensees were engaged in trading. Top 5 trading licensees had a share of 72.15% in the total volume traded by all the licensees. These are PTC India Ltd., Tata Power Trading Company (P) Ltd., Mittal Processors (P) Ltd., NTPC Vidyut Vyapar Nigam Ltd., and JSW Power Trading Company Ltd.

Herfindahl-Hirschman Index (HHI) has been used for measuring the competition among the trading licensees. Increase in the HHI generally indicates 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 0.1594 for the month of May 2015, which indicates moderate concentration of market power (Table-2).

The volume of electricity transacted through IEX and PXIL in the day ahead market was 2888.24 MUs and 25.18 MUs respectively. The volume of total buy bids and sale bids was 3490.03 MUs and 4698.34 MUs respectively in IEX while the same was 28.85 MUs and 60.45 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 (0.74 times) and PXIL (0.48 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 22.44 MUs and 7.41 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 ₹2.57/kWh, ₹7.99/kWh and ₹4.00/kWh respectively (Table-3). 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 ₹4.07/kWh, ₹4.13/kWh and ₹3.55/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 ₹0.80/kWh, ₹20.00/kWh and ₹2.50/kWh respectively in IEX and ₹0.13/kWh, ₹4.00/kWh and ₹2.35/kWh respectively in PXIL (Table-5).

The prices of electricity transacted through IEX and PXIL in the term-ahead market were ₹3.56/kWh and ₹2.52/kWh respectively (Table-6 and Table-7).

**(iii) Price of electricity transacted through DSM:** The average deviation price was ₹1.96/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 42.59% of the volume, and these were Himachal Pradesh, Sterlite Energy Limited, Gujarat, Damodar Valley Corporation and Karnataka. Top 5 regional entities purchased 59.84% of the volume, and these were Telangana, Uttar Pradesh, Maharashtra, West Bengal and Delhi (Table-9 & 10).

Of the total Power Exchange transactions, top 5 regional entities sold 47.47% of the volume, and these were Jindal India Thermal Power Limited, Himachal Pradesh, Jaypee Karcham Hydro Corporation Limited, National Hydro Electric Power Corporation Ltd. Stations and Simhapuri Energy Private Limited. Top 5 regional entities purchased 59.90% of the volume, and these were Rajasthan, Punjab, Essar Steel Limited, West Bengal and Gujarat (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 26.95% of the volume, and these were Maharashtra, Uttar Pradesh, Rajasthan, Gujarat and Haryana (Table-13). Top 5 regional entities overdrew/imported 30.66% of the volume, and these were Uttar Pradesh, Tamil Nadu, Maharashtra, Haryana and Punjab (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 Tamil Nadu, National Hydro Electric Power Corporation Ltd. Stations, Punjab, Madhya Pradesh, Uttar Pradesh. Top 5 electricity purchasing regional entities were Kerala, Odisha, Rajasthan, West Bengal and Andhra 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 May 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 due to congestion was 3.05% of the unconstrained cleared volume. In PXIL, the volume of electricity was not affected by congestion, therefore, there was no variation between unconstrained cleared volume and actual cleared volume. In terms of time, congestion occurred was 85.89% in IEX (Table-16).

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

**(i) Duration of bilateral contracts:** During June, 2015, a total of 104 bilateral contracts (excluding banking/swap contracts) have been executed by traders for the volume of 5032.69 MUs. Figure-7 shows the percentage of contracts categorized according to the period of power supply. It can be observed from the figure that 52% of the contracts were executed for a duration of up to one week, and 45% of the contracts executed for a duration of more than a week and upto one month, followed by 1% of contracts executed for a duration more than one month and upto three months and 2% of contracts executed for a duration more than three months and upto twelve months.

During the month, 16 banking/swapping bilateral contracts were also executed for the volume of 302.45 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, 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 June, 2015 to May, 2016 based on bilateral contracts<sup>5</sup>executed till June, 2015. Forward

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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*

curves have been drawn for the contracts executed in May 2015 and June, 2015 for the purpose of comparison. It is observed that the forward prices from June, 2015 to September, 2015 were lower for the contracts executed in June, 2015 when compared to the contracts executed in May, 2015. However, the forward prices were higher during the period from October, 2015 to May, 2016 for the contracts executed in the June, 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 May, 2015 are shown in Table-20. The market clearing volume of solar RECs transacted on IEX and PXIL were 80867 and 2322 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 211533 and 45046 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 0.06 and 0.004 for IEX and PXIL respectively. For non-solar RECs, the ratio of buy bids to sell bids was 0.04 for IEX and 0.01 for PXIL.

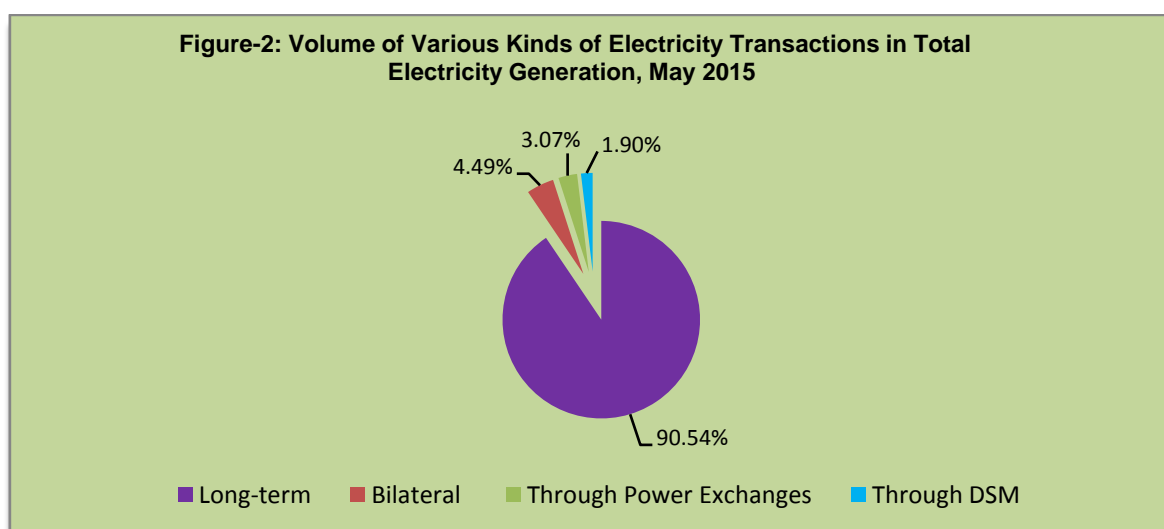
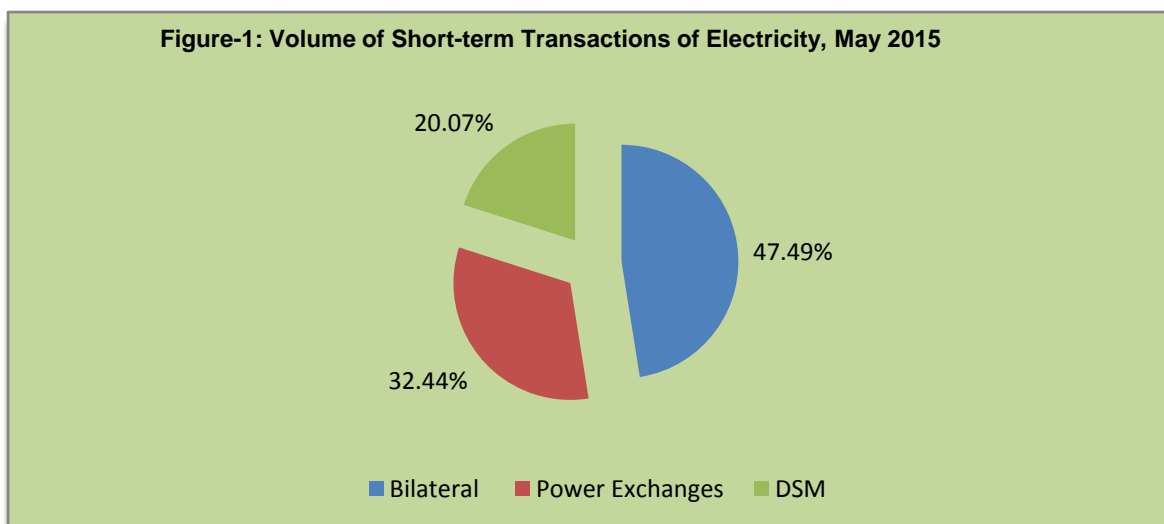
## VII: Inferences:

- The percentage of short-term transactions of electricity to total electricity generation was 9.46 %.
- Of the total short-term transactions of electricity, 47.49% was transacted through bilateral (through traders and term ahead contracts on power exchanges and directly by distribution companies), followed by 32.44% through power exchanges and 20.07% through DSM.
- Top 5 trading licensees had a share of 72.15% 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 0.1594, indicating moderate concentration of market power.
- The weighted average price of electricity transacted through trading licensees was ₹4.00/kWh. The weighted average prices of electricity transacted through IEX and PXIL were ₹2.50/kWh and ₹2.35/kWh respectively.
- The average price of electricity transacted through DSM was ₹1.96/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 (1:0.074) and PXIL (1:0.48) when compared with the supply bids offered through these exchanges.
- Top 5 electricity selling regional entities were Tamil Nadu, National Hydro Electric Power Corporation Ltd. Stations, Punjab, Madhya Pradesh and Uttar Pradesh. Top 5 electricity purchasing regional entities were Kerala, Odisha, Rajasthan, West Bengal and Andhra Pradesh.
- The volume of electricity that could not be cleared in IEX due to congestion was 3.05% of the unconstrained cleared volume. In PXIL, the volume of electricity was not affected by congestion, therefore, there was no variation between unconstrained cleared volume and actual cleared volume. In terms of time, congestion occurred was 85.89% in IEX.

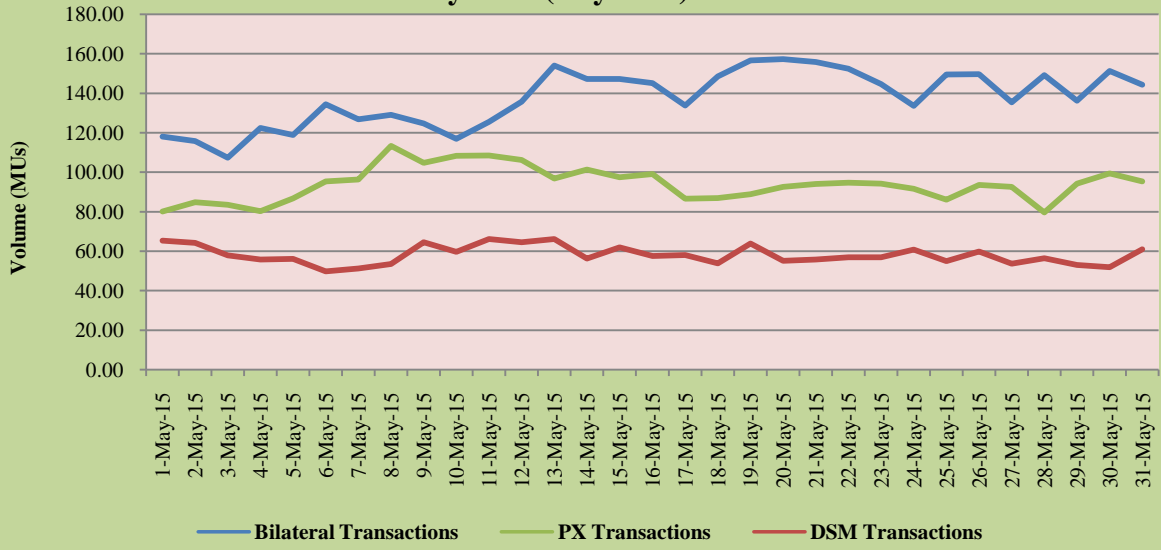
- In June 2015, 52% of the contracts were executed for a duration of up to one week, and 45% of the contracts were executed for a duration of more than a week and upto one month, and 1% of contracts were executed for a duration more than one month and upto three month and 2% of contracts were executed for a duration more than three months upto twelve months.
- The forward prices from June, 2015 to September, 2015 were lower for the contracts executed in June, 2015 when compared to the contracts executed in May, 2015. However, the forward prices were higher during the period from October, 2015 to May, 2016 for the contracts executed in June, 2015.
- The market clearing volume of Solar RECs transacted on IEX and PXIL were 80867 and 2322 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 211533 and 45046 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), MAY 2015				
Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	4265.74	47.49	4.49
	(i) Through Traders and PXs	2769.89	30.84	2.92
	(ii) Direct	1495.85	16.65	1.58
2	Through Power Exchanges	2913.41	32.44	3.07
	(i) IEX	2888.24	32.16	3.04
	(ii) PXIL	25.18	0.28	0.03
3	Through DSM	1802.45	20.07	1.90
	<b>Total</b>	<b>8981.60</b>	<b>100.00</b>	<b>9.46</b>
	<b>Total Generation</b>	<b>94942.22</b>	–	–

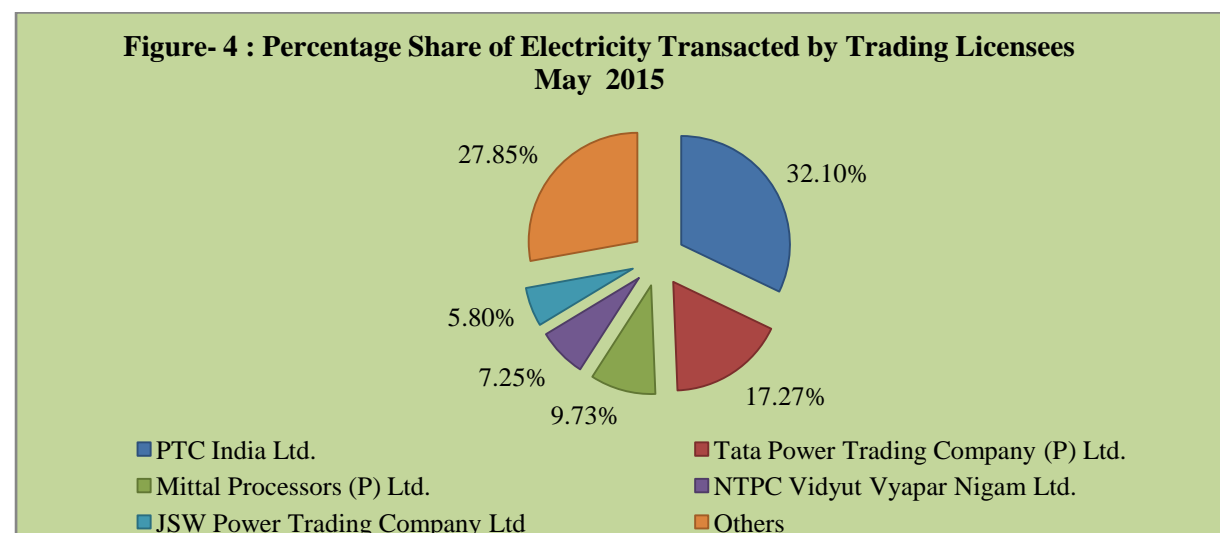
Source: NLDC



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



<b>Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, MAY 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.	32.10	0.1031
2	Tata Power Trading Company (P) Ltd.	17.27	0.0298
3	Mittal Processors (P) Ltd.	9.73	0.0095
4	NTPC Vidyut Vyapar Nigam Ltd.	7.25	0.0053
5	JSW Power Trading Company Ltd	5.80	0.0034
6	Adani Enterprises Ltd.	5.12	0.0026
7	Knowledge Infrastructure Systems (P) Ltd	4.23	0.0018
8	GMR Energy Trading Ltd.	3.40	0.0012
9	Shree Cement Ltd.	2.93	0.0009
10	Jaiprakash Associates Ltd.	2.42	0.0006
11	Manikaran Power Ltd.	2.20	0.0005
12	Instinct Infra & Power Ltd.	1.70	0.0003
13	National Energy Trading & Services Ltd.	1.66	0.0003
14	SN Power Markets Pvt. Ltd.	1.21	0.0001
15	RPG Power Trading Company Ltd.	1.17	0.0001
16	Arunachal Pradesh Power Corporation (P) ltd	0.54	0.0000
17	Reliance Energy Trading (P) Ltd	0.39	0.0000
18	My Home Power Private Ltd.	0.33	0.0000
19	Indrajit Power Technology (P) Ltd.	0.25	0.0000
20	Customized Energy Solutions India (P) Ltd.	0.18	0.0000
21	Essar Electric Power Development Corp. Ltd.	0.08	0.0000
22	Adhunik Alloys Private Limited	0.05	0.0000
<b>TOTAL</b>		<b>100.00</b>	<b>0.1594</b>
<b>Top 5 trading licensees</b>		<b>72.15</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 MAY,2015</b>		
<b>Sr.No</b>		<b>Sale Price of Traders (₹/kWh)</b>
1	Minimum	2.57
2	Maximum	7.99
3	Weighted Average	4.00

Source: Information submitted by trading licensees

<b>Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE) MAY,2015</b>		
<b>Sr.No</b>	<b>Period of Trade</b>	<b>Sale Price of Traders (₹/kWh)</b>
1	RTC	4.07
2	PEAK	4.13
3	OFF PEAK	3.55

Source: Information submitted by trading licensees

<b>Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES MAY,2015</b>			
<b>Sr.No</b>	<b>ACP</b>	<b>Price in IEX (₹/kWh)</b>	<b>Price in PXIL (₹/kWh)</b>
1	Minimum	0.80	0.13
2	Maximum	20.00	4.00
3	Weighted Average	2.50	2.35

Source: Information submitted by IEX and PXIL

<b>Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX MAY,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	21.96	3.58
2	Day Ahead Contingency Contracts	0.48	2.65
	<b>Total</b>	<b>22.44</b>	<b>3.56</b>

Source: IEX

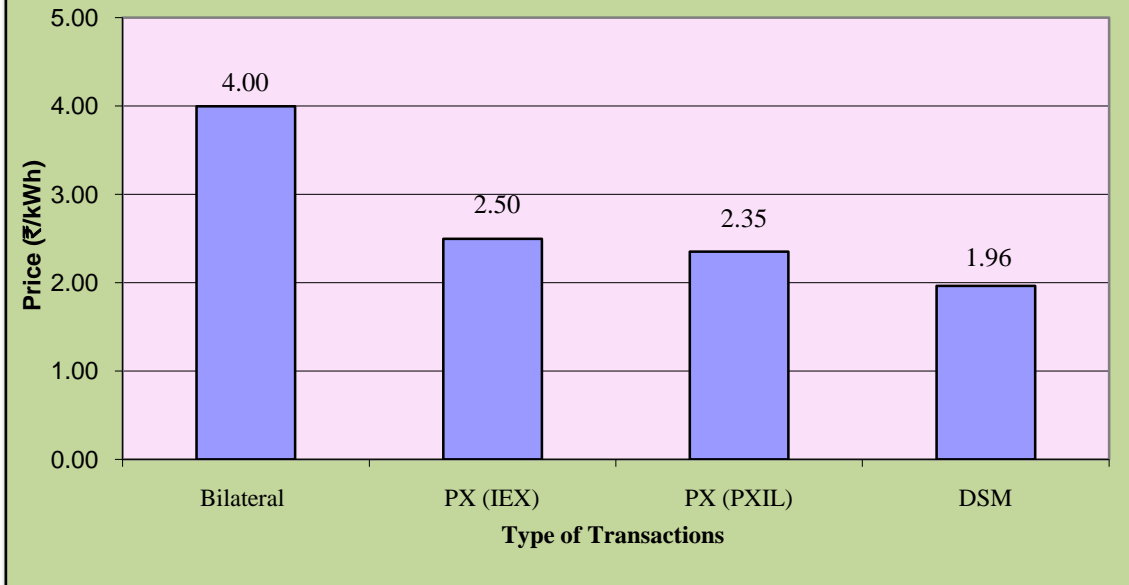
<b>Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL MAY,2015</b>			
<b>Sr.No</b>	<b>Term ahead contracts</b>	<b>Actual Scheduled Volume (MUs)</b>	<b>Weighted Average Price (₹/kWh)</b>
1	Intra-Day Contracts	7.41	2.52
	<b>Total</b>	<b>7.41</b>	<b>2.52</b>

Source: PXIL

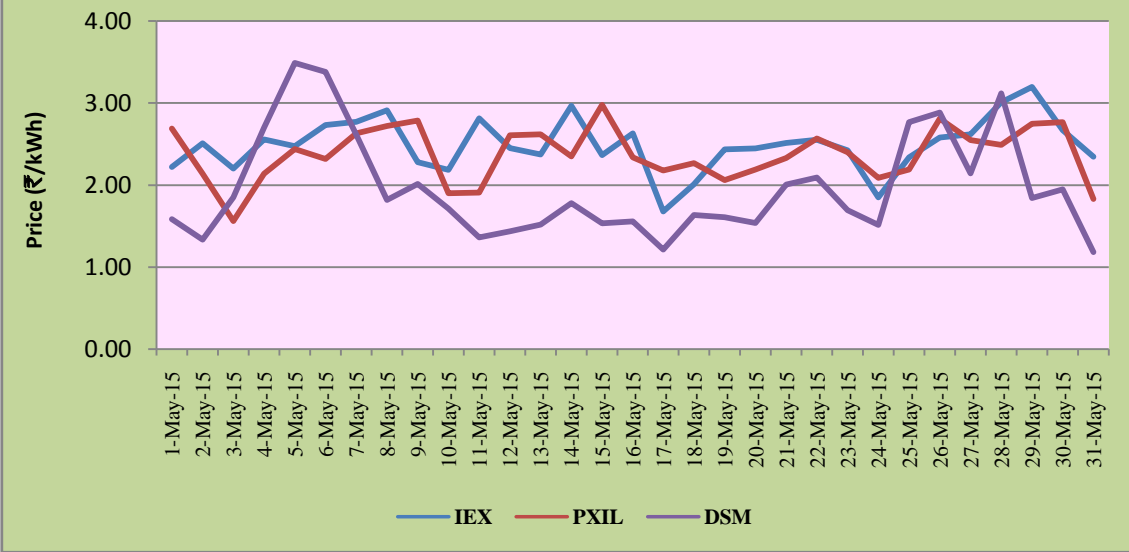
<b>Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH DSM MAY,2015</b>		
<b>Sr.No</b>		<b>Price in All India Grid (₹/kWh)</b>
1	Minimum	0
2	Maximum	8.24
3	Average	1.96

Source: NLDC

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



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



<b>Table-9: VOLUME OF ELECTRICITY SOLD THROUGH BILATERAL, MAY 2015</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Sale (MUs)</b>	<b>% of Volume</b>
HIMACHAL PRADESH	420.01	9.87
STERLITE	390.66	9.18
GUJARAT	364.23	8.56
DVC	319.90	7.52
KARNATAKA	317.13	7.45
J & K	301.39	7.08
RAJASTHAN	237.45	5.58
THERMAL POWERTECH	214.95	5.05
GMR KAMALANGA	199.88	4.70
SIMHAPURI	182.65	4.29
COASTGEN	180.58	4.24
SHREE CEMENT	150.20	3.53
KARCHAM WANGTOO	131.23	3.08
JINDAL STAGE-II	122.55	2.88
MEENAKSHI	93.86	2.21
JINDAL POWER	93.33	2.19
WEST BENGAL	92.12	2.17
ADHUNIK POWER LTD	87.27	2.05
MADHYA PRADESH	79.75	1.87
MAITHON POWER LTD	61.96	1.46
AD HYDRO	43.77	1.03
ODISHA	39.69	0.93
KORBA WEST POWER	33.22	0.78
JITPL	31.14	0.73
DAGACHU	15.72	0.37
TELANGANA	11.76	0.28
CHHATTISGARH	10.89	0.26
DELHI	10.54	0.25
ACBIL	9.67	0.23
HARYANA	4.00	0.09
UTTARAKHAND	1.80	0.04
TRIPURA	0.84	0.02
EMCO	0.15	0.00
<b>Total</b>	<b>4254.31</b>	<b>100.00</b>
<b>Volume of sale by top 5 States</b>	<b>1811.92</b>	<b>42.59</b>

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

<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Purchase (MUs)</b>	<b>% of Volume</b>
TELANGANA	700.39	16.97
UTTAR PRADESH	617.32	14.95
MAHARASHTRA	407.24	9.87
WEST BENGAL	389.78	9.44
DELHI	355.67	8.62
ANDHRA PRADESH	344.48	8.34
BIHAR	266.58	6.46
TAMIL NADU	183.44	4.44
PUNJAB	168.49	4.08
JHARKHAND	137.87	3.34
ODISHA	124.76	3.02
KERALA	98.16	2.38
HARYANA	61.23	1.48
ASSAM	56.28	1.36
UTTARAKHAND	53.85	1.30
CHHATTISGARH	42.24	1.02
GUJARAT	33.15	0.80
GOA	29.97	0.73
MANIPUR	29.45	0.71
MEGHALAYA	11.52	0.28
ESSAR STEEL	7.52	0.18
CHANDIGARH	7.44	0.18
KARNATAKA	1.08	0.03
RAJASTHAN	0.13	0.00
<b>Total</b>	<b>4128.03</b>	<b>100.00</b>
<b>Volume of Purchase by top 5 States</b>	<b>2470.40</b>	<b>59.84</b>

**Table-11: VOLUME OF ELECTRICITY SALE THROUGH POWER EXCHANGES, MAY 2015**

Name of the State/UT/Other Regional Entity	Volume of Sale (MUs)	% of Volume
JITPL	478.62	16.43
HIMACHAL PRADESH	383.10	13.15
KARCHAM WANGTOO	242.27	8.32
NHPC STATIONS	146.38	5.02
SIMHAPURI	132.57	4.55
DONGA MAHUA CAPTIVE POWER PLANT	116.91	4.01
KARNATAKA	116.08	3.98
MADHYA PRADESH	105.53	3.62
KORBA WEST POWER	99.90	3.43
STERLITE	88.25	3.03
TELANGANA	75.51	2.59
RAJASTHAN	70.86	2.43
AD HYDRO	65.57	2.25
GUJARAT	63.33	2.17
NJPC	57.94	1.99
CHHATTISGARH	55.63	1.91
ODISHA	49.02	1.68
LANCO BUDHIL	46.65	1.60
CHUZACHEN HEP	42.51	1.46
ACBIL	41.07	1.41
JINDAL STAGE-II	40.42	1.39
TRIPURA	40.03	1.37
DELHI	39.37	1.35
HARYANA	31.74	1.09
SIKKIM	28.76	0.99
TEESTA HEP	26.18	0.90
MEENAKSHI	25.79	0.89
SHREE CEMENT	24.85	0.85
ADHUNIK POWER LTD	19.07	0.65
THERMAL POWERTECH	18.01	0.62
MAITHON POWER LTD	16.55	0.57
WEST BENGAL	13.27	0.46
MANIPUR	13.00	0.45
MAHARASHTRA	12.78	0.44
J & K	10.31	0.35
ASSAM	9.77	0.34
GOA	9.56	0.33
DVC	9.09	0.31
KERALA	8.96	0.31
JAYPEE NIGRIE	6.42	0.22
MB POWER	6.34	0.22
MALANA	5.15	0.18
ANDHRA PRADESH	4.97	0.17
MEGHALAYA	4.65	0.16
RANGIT HEP	3.42	0.12
MIZORAM	3.16	0.11
GMR KAMALANGA	2.02	0.07
LOKTAK	1.17	0.04
JINDAL POWER	0.59	0.02
EMCO	0.18	0.01
CHANDIGARH	0.13	0.00
<b>Total</b>	<b>2913.10</b>	<b>100.00</b>
<b>Volume of sale by top 5 Sellers</b>	<b>1382.94</b>	<b>47.47</b>

<b>Table-12: VOLUME OF ELECTRICITY PURCHASED THROUGH POWER EXCHANGES MAY 2015</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Purchase (MUs)</b>	<b>% of Volume</b>
RAJASTHAN	616.16	21.15
PUNJAB	366.42	12.58
ESSAR STEEL	268.47	9.22
WEST BENGAL	251.31	8.63
GUJARAT	242.85	8.34
ANDHRA PRADESH	190.00	6.52
HARYANA	146.40	5.02
DELHI	115.89	3.98
UTTARAKHAND	103.32	3.55
KARNATAKA	102.17	3.51
TAMIL NADU	92.57	3.18
TELANGANA	80.99	2.78
MAHARASHTRA	80.93	2.78
MADHYA PRADESH	55.49	1.90
BIHAR	33.77	1.16
DAMAN AND DIU	33.41	1.15
HIMACHAL PRADESH	27.42	0.94
CHHATTISGARH	15.18	0.52
UTTAR PRADESH	15.04	0.52
MEGHALAYA	14.48	0.50
ASSAM	12.72	0.44
J & K	12.29	0.42
NAGALAND	9.65	0.33
CHANDIGARH	7.53	0.26
KERALA	6.82	0.23
ODISHA	5.03	0.17
ARUNACHAL PRADESH	3.96	0.14
GOA	3.15	0.11
<b>Total</b>	<b>2913.41</b>	<b>100.00</b>
<b>Volume of purchase by top 5 Buyers</b>	<b>1745.21</b>	<b>59.90</b>

<b>Table-13: VOLUME OF ELECTRICITY EXPORT THROUGH DSM, MAY 2015</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Exports (MUs)</b>	<b>% of Volume</b>
MAHARASHTRA	92.51	6.82
UTTAR PRADESH	74.73	5.51
RAJASTHAN	69.99	5.16
GUJARAT	66.84	4.93
HARYANA	61.42	4.53
BIHAR	58.25	4.30
WEST BENGAL	57.34	4.23
ODISHA	56.59	4.17
KERALA	52.94	3.90
ANDHRA PRADESH	52.82	3.90
CHHATTISGARH	48.26	3.56
KARNATAKA	41.16	3.04
MADHYA PRADESH	39.18	2.89
ASSAM	38.8	2.86
PUNJAB	37.88	2.79
TELANGANA	36.26	2.67
DELHI	29.18	2.15
UTTARAKHAND	27.2	2.01
J & K	27.04	1.99
GOA	22.52	1.66
THERMAL POWERTECH	22.27	1.64
HIMACHAL PRADESH	21.86	1.61
TAMIL NADU	20.81	1.53
ESSAR STEEL	19.81	1.46
STERLITE	19.65	1.45
ARUNACHAL PRADESH	15.59	1.15
JITPL	15.06	1.11
DVC	14.61	1.08
JHARKHAND	14.39	1.06
TRIPURA	13.89	1.02
ACBIL	11.99	0.88
KARCHAM WANGTOO	11.68	0.86
JAYPEE NIGRIE	11.3	0.83
NAGALAND	10.65	0.79
CHANDIGARH	9.9	0.73
JINDAL POWER	7.72	0.57
MIZORAM	7.58	0.56
KORBA WEST POWER	7.09	0.52
AD HYDRO	6.85	0.51
RGPPL	5.96	0.44
CGPL	5.86	0.43
DCPP	5.85	0.43
BALCO	5.78	0.43
CHUZACHEN HEP	5.26	0.39
MANIPUR	4.89	0.36
NHPC STATIONS	4.78	0.35
MAITHON POWER LTD	4.42	0.33
NJPC	4.12	0.30
MEGHALAYA	3.91	0.29
COASTGEN	3.67	0.27
DGEN MEGA POWER	3.6	0.27
GOA	3.47	0.26
DADRA & NAGAR HAVELI	3.42	0.25
PONDICHERRY	3.37	0.25
SIMHAPURI	3.1	0.23

SHREE CEMENT	2.88	0.21
EMCO	2.75	0.20
ADHUNIK POWER LTD	2.7	0.20
MEENAKSHI	2.68	0.20
GMR KAMALANGA	2.62	0.19
GMR CHHATTISGARH	2.59	0.19
DAMAN AND DIU	2.17	0.16
LANCO BUDHIL	1.79	0.13
NSPCL	1.66	0.12
TEESTA HEP	1.53	0.11
RANGANADI HEP	1.37	0.10
ESSAR POWER	1.29	0.10
SIKKIM	0.84	0.06
DAGACHU	0.79	0.06
RANGIT HEP	0.76	0.06
LANKO_AMK	0.64	0.05
DB POWER	0.52	0.04
DHARIWAL POWER	0.52	0.04
MALANA	0.51	0.04
DOYANG HEP	0.25	0.02
KSK MAHANADI	0.13	0.01
<b>Total</b>	<b>1356.06</b>	<b>100.00</b>
<b>Volume Exported by top 5</b>	<b>365.49</b>	<b>26.95</b>



Table-14: VOLUME OF ELECTRICITY IMPORT THROUGH DSM, MAY 2015		
Name of the State/UT/Other Regional Entity	Volume of Import (MUs)	% of Volume
UTTAR PRADESH	107.83	7.86
TAMILNADU	81.45	5.94
MAHARASHTRA	80.71	5.88
HARYANA	75.61	5.51
PUNJAB	74.85	5.46
MP	73.52	5.36
GUJARAT	71.41	5.21
NHPC STATIONS	53.48	3.90
DELHI	53.05	3.87
BIHAR	49.03	3.58
J & K	38.77	2.83
RAJASTHAN	36.77	2.68
DVC	35.84	2.61
CHHATTISGARH	34.64	2.53
TELANGANA	33.51	2.44
UTTARAKHAND	31.04	2.26
GMR CHATTISGARH	30.43	2.22
WEST BENGAL	29.76	2.17
ANDHRA PRADESH	28.94	2.11
JHARKHAND	28.90	2.11
KARNATAKA	26.91	1.96
STERLITE	20.01	1.46
ASSAM	17.48	1.27
ODISHA	17.21	1.25
HIMACHAL PRADESH	16.98	1.24
JITPL	15.28	1.11
SIKKIM	15.14	1.10
CGPL	15.02	1.10
ESSAR STEEL	13.25	0.97
NJPC	13.25	0.97
DADRA & NAGAR HAVELI	11.39	0.83
MEGHALAYA	9.67	0.71
DAMAN AND DIU	8.94	0.65
KARCHAM WANGTOO	8.66	0.63
TEESTA HEP	8.42	0.61
MAITHON POWER LTD	6.40	0.47
JINDAL POWER	6.23	0.45
PONDICHERRY	6.11	0.45
CHUZACHEN HEP	6.10	0.44
GOA	5.25	0.38
DCPP	4.73	0.34
TRIPURA	4.67	0.34
JAYPEE NIGRIE	4.47	0.33
AD HYDRO	4.43	0.32
MANIPUR	4.03	0.29
NSPCL	3.63	0.26
KERALA	3.28	0.24
SIMHAPURI	3.19	0.23
GMR KAMALANGA	3.04	0.22
SHREE CEMENT	2.92	0.21
KSK MAHANADI	2.90	0.21
RANGANADI HEP	2.80	0.20
KORBA WEST POWER	2.58	0.19
THERMAL POWERTECH	2.43	0.18
CHANDIGARH	2.42	0.18

ARUNACHAL PRADESH	2.41	0.18
COASTGEN	2.41	0.18
ADHUNIK POWER LTD	2.29	0.17
GOA	2.25	0.16
MEENAKSHI	2.16	0.16
DAGACHU	1.79	0.13
EMCO	1.71	0.12
LANKO_AMK	1.47	0.11
RANGIT HEP	1.34	0.10
BALCO	1.31	0.10
LANCO BUDHIL	0.83	0.06
MIZORAM	0.61	0.04
ACBIL	0.54	0.04
NAGALAND	0.48	0.03
MALANA	0.42	0.03
DOYANG HEP	0.27	0.02
RGPPL	0.24	0.02
VANDANA VIDYUT	0.23	0.02
<b>TOTAL</b>	<b>1371.50</b>	<b>100.00</b>
<b>VOLUME OF IMPORT BY TOP 5 STATES</b>	<b>420.45</b>	<b>30.66</b>

**Table-15: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY  
(REGIONAL ENTITY-WISE), MAY 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*</b>
1	KERALA	49.66
2	ODISHA	39.37
3	RAJASTHAN	33.22
4	WEST BENGAL	27.58
5	ANDHRA PRADESH	23.87
6	ASSAM	21.32
7	THERMAL POWERTECH	19.84
8	GOA	17.27
9	KARNATAKA	14.26
10	CHHATTISGARH	13.63
11	ARUNACHAL PRADESH	13.18
12	MAHARASHTRA	11.80
13	ACBIL	11.45
14	NAGALAND	10.17
15	TRIPURA	9.23
16	BIHAR	9.21
17	CHANDIGARH	7.48
18	MIZORAM	6.97
19	JAYPEE NIGRIE	6.83
20	ESSAR STEEL	6.55
21	RGPPPL(DABHOL)	5.72
22	HIMACHAL PRADESH	4.88
23	KORBA WEST POWER	4.50
24	BALCO	4.47
25	DGEN MEGA POWER	3.60
26	KARCHAM WANGTOO	3.01
27	TELANGANA	2.76
28	AD HYDRO	2.42
29	JINDAL POWER	1.49
30	ESSAR POWER	1.29
31	COASTGEN	1.26
32	GOA	1.21
33	DONGA MAHUA CAPTIVE POWER PLANT	1.12
34	EMCO	1.04
35	LANCO BUDHIL	0.96
36	MANIPUR	0.87
37	DB POWER	0.52
38	MEENAKSHI	0.52
39	DHARIWAL POWER	0.52
40	ADHUNIK POWER LTD	0.41
41	MALANA	0.09
42	DOYANG HEP	-0.02
43	SHREE CEMENT	-0.04
44	SIMHAPURI	-0.09
45	JITPL	-0.22
46	VANDANA VIDYUT	-0.23
47	STERLITE	-0.36
48	GMR KAMALANGA	-0.42
49	RANGIT HEP	-0.58
50	LANKO AMK	-0.82
51	CHUZACHEN HEP	-0.85
52	DAGACHU	-1.00
53	RANGANADI HEP	-1.43

54	NSPCL	-1.97
55	MAITHON POWER LTD	-1.98
56	PONDICHERRY	-2.74
57	KSK MAHANADI	-2.77
58	UTTARAKHAND	-3.84
59	GUJARAT	-4.58
60	MEGHALAYA	-5.76
61	DAMAN AND DIU	-6.77
62	TEESTA HEP	-6.89
63	DADRA & NAGAR HAVELI	-7.98
64	NJPC	-9.13
65	COASTAL GUJARAT POWER LTD	-9.16
66	J & K	-11.73
67	HARYANA	-14.20
68	SIKKIM	-14.29
69	JHARKHAND	-14.50
70	DVC	-21.22
71	DELHI	-23.87
72	GMR CHHATTISGARH	-27.85
73	UTTAR PRADESH	-33.10
74	MADHYA PRADESH	-34.34
75	PUNJAB	-36.97
76	NHPC STATIONS	-48.71
77	TAMIL NADU	-60.64
* 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, MAY 2015</b>			
	<b>Details of Congestion</b>	<b>IEX</b>	<b>PXIL</b>
A	Unconstrained Cleared Volume* (MUs)	2979.01	25.18
B	Actual Cleared Volume and hence scheduled (MUs)	2888.24	25.18
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	90.78	0.00
D	Volume of electricity that could not be cleared as % to Unconstrained Cleared Volume	3.05%	0.00%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	85.89%	0.00%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	23.24%	0.00%
	6.00 - 12.00 hours	26.37%	0.00%
	12.00 - 18.00 hours	25.51%	0.00%
	18.00 - 24.00 hours	24.88%	0.00%
<i>* This power would have been scheduled had there been no congestion.</i>			
<i>Source: IEX &amp; PXIL &amp; NLDC</i>			

<b>Table-17: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA (MUs), MAY 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 Drawl+ Under Generation)</b>	
	<b>Through Traders and PXs**</b>	<b>Direct</b>	<b>IEX</b>	<b>PXI</b>		
1-May-15	73.15	44.92	78.48	1.56	65.35	2936.19
2-May-15	74.46	41.24	83.22	1.56	64.16	2991.07
3-May-15	72.23	35.10	82.04	1.52	57.85	2917.68
4-May-15	75.18	47.16	78.93	1.37	55.74	3017.74
5-May-15	71.64	47.16	85.56	1.26	56.03	3053.55
6-May-15	75.59	58.82	94.24	1.03	49.80	3104.95
7-May-15	71.36	55.45	95.36	0.96	51.32	3106.60
8-May-15	73.75	55.21	111.92	1.44	53.53	3121.27
9-May-15	77.51	47.19	103.23	1.51	64.50	3160.41
10-May-15	76.08	40.87	106.81	1.55	59.68	3070.87
11-May-15	87.51	38.01	106.99	1.55	66.06	3062.60
12-May-15	92.59	43.06	104.92	1.35	64.44	3084.60
13-May-15	98.27	55.70	96.48	0.32	66.13	3018.19
14-May-15	90.81	56.41	100.94	0.35	56.34	3021.15
15-May-15	90.43	56.65	96.97	0.56	61.93	3058.06
16-May-15	98.85	46.21	98.78	0.33	57.60	3000.60
17-May-15	92.67	41.03	86.16	0.37	58.00	2867.76
18-May-15	100.44	48.05	86.48	0.36	53.79	2983.35
19-May-15	104.23	52.31	88.51	0.35	63.81	2996.11
20-May-15	99.43	57.77	92.22	0.33	55.09	3012.10
21-May-15	96.02	59.79	93.77	0.33	55.83	3108.67
22-May-15	106.09	46.21	94.45	0.31	56.93	3126.22
23-May-15	103.83	40.74	93.90	0.31	56.89	3095.30
24-May-15	93.57	39.96	91.31	0.33	60.83	2982.88
25-May-15	103.01	46.41	85.70	0.35	55.02	3105.79
26-May-15	103.40	46.14	93.32	0.30	59.83	3176.64
27-May-15	96.53	38.82	92.33	0.28	53.63	3171.11
28-May-15	106.17	42.97	79.27	0.33	56.51	3156.28
29-May-15	89.68	46.47	93.53	0.71	52.98	3174.80
30-May-15	89.96	61.17	97.94	1.44	51.96	3199.35
31-May-15	85.43	58.86	94.49	0.88	60.90	3060.33
<b>Total</b>	<b>2769.89</b>	<b>1495.85</b>	<b>2888.24</b>	<b>25.18</b>	<b>1802.45</b>	<b>94942.22</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 SHORT-TERM TRANSACTIONS OF ELECTRICITY (₹/kWh), MAY 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-May-15	1.00	5.49	2.22	1.44	3.32	2.69	0.00	3.45	1.59
2-May-15	1.40	20.00	2.51	1.05	2.83	2.14	0.00	4.91	1.34
3-May-15	1.00	8.00	2.20	1.09	2.73	1.56	0.00	5.11	1.85
4-May-15	1.60	20.00	2.56	1.05	2.83	2.14	0.00	8.03	2.70
5-May-15	1.00	20.00	2.47	1.74	3.08	2.44	0.00	8.24	3.49
6-May-15	1.10	20.00	2.73	1.05	3.18	2.32	0.00	7.20	3.38
7-May-15	1.50	20.00	2.77	1.43	3.10	2.63	0.00	5.95	2.62
8-May-15	1.67	16.50	2.91	1.70	3.49	2.72	0.00	5.74	1.82
9-May-15	0.90	18.00	2.28	1.76	3.74	2.79	0.00	5.32	2.01
10-May-15	0.94	16.50	2.19	1.00	3.02	1.90	0.00	5.11	1.71
11-May-15	1.00	20.00	2.81	1.00	3.03	1.91	0.00	6.36	1.36
12-May-15	0.95	20.00	2.45	1.33	3.72	2.61	0.00	5.74	1.44
13-May-15	0.89	20.00	2.37	1.09	3.90	2.62	0.00	3.45	1.52
14-May-15	1.00	19.75	2.97	1.34	3.40	2.35	0.00	5.95	1.78
15-May-15	0.99	7.00	2.37	0.13	3.90	2.98	0.00	3.24	1.53
16-May-15	0.90	6.10	2.63	2.10	2.90	2.34	0.00	3.45	1.56
17-May-15	0.80	5.59	1.68	1.45	3.20	2.18	0.00	3.03	1.22
18-May-15	0.80	5.10	2.01	0.81	3.90	2.27	0.00	5.11	1.64
19-May-15	0.90	8.00	2.44	1.18	2.51	2.06	0.00	5.32	1.61
20-May-15	0.91	5.69	2.45	0.90	3.75	2.19	0.00	5.95	1.54
21-May-15	1.10	5.49	2.51	0.90	3.01	2.33	0.00	5.74	2.01
22-May-15	1.40	5.30	2.55	0.50	3.75	2.57	0.00	5.95	2.09
23-May-15	1.00	5.50	2.42	0.50	4.00	2.40	0.00	3.45	1.70
24-May-15	0.80	5.52	1.85	1.20	3.00	2.09	0.00	3.45	1.51
25-May-15	0.90	5.55	2.34	0.50	4.00	2.19	0.00	6.36	2.77
26-May-15	1.50	5.60	2.58	1.00	4.00	2.81	0.00	8.24	2.89
27-May-15	1.10	6.50	2.62	2.55	2.55	2.55	0.00	5.95	2.14
28-May-15	1.70	16.00	3.01	1.75	4.00	2.49	0.00	8.24	3.12
29-May-15	1.50	15.00	3.20	1.75	3.88	2.75	0.00	5.32	1.84
30-May-15	0.80	15.00	2.67	1.70	3.60	2.77	0.00	6.36	1.95
31-May-15	0.80	8.00	2.34	0.60	2.79	1.83	0.00	5.95	1.18
	0.80#	20.00#	2.50*	0.13#	4.00#	2.35*	0.00#	8.24#	1.96

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.

# Maximum/Minimum in the month

**Table-19: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY\*-WISE)  
(MUs), MAY 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**	Export (Under Drawl)	Import (Over Drawl)	Net**	
PUNJAB	0.00	168.49	168.49	0.00	366.42	366.42	37.88	74.85	-36.97	497.95
HARYANA	4.00	61.23	57.23	31.74	146.40	114.66	61.42	75.61	-14.20	157.69
RAJASTHAN	237.45	0.13	-237.31	70.86	616.16	545.30	69.99	36.77	33.22	341.21
DELHI	10.54	355.67	345.13	39.37	115.89	76.52	29.18	53.05	-23.87	397.77
UTTAR PRADESH	0.00	617.32	617.32	0.00	15.04	15.04	74.73	107.83	-33.10	599.26
UTTARAKHAND	1.80	53.85	52.05	0.00	103.32	103.32	27.20	31.04	-3.84	151.53
HIMACHAL PRADESH	420.01	0.00	-420.01	383.10	27.42	-355.68	21.86	16.98	4.88	-770.81
J & K	301.39	0.00	-301.39	10.31	12.29	1.98	27.04	38.77	-11.73	-311.14
CHANDIGARH	0.00	7.44	7.44	0.13	7.53	7.39	9.90	2.42	7.48	22.31
MADHYA PRADESH	79.75	0.00	-79.75	105.53	55.49	-50.04	39.18	73.52	-34.34	-164.14
MAHARASHTRA	0.00	407.24	407.24	12.78	80.93	68.15	92.51	80.71	11.80	487.20
GUJARAT	364.23	33.15	-331.08	63.33	242.85	179.51	66.84	71.41	-4.58	-156.14
CHHATTISGARH	10.89	42.24	31.35	55.63	15.18	-40.45	48.26	34.64	13.63	4.53
GOA	0.00	29.97	29.97	9.56	3.15	-6.41	22.52	5.25	17.27	40.83
DAMAN AND DIU	0.00	0.00	0.00	0.00	33.41	33.41	2.17	8.94	-6.77	26.64
DADRA & NAGAR HAVELI	0.00	0.00	0.00	0.00	0.00	0.00	3.42	11.39	-7.98	-7.98
ANDHRA PRADESH	0.00	344.48	344.48	4.97	190.00	185.02	52.82	28.94	23.87	553.37
KARNATAKA	317.13	1.08	-316.06	116.08	102.17	-13.92	41.16	26.91	14.26	-315.71
KERALA	0.00	98.16	98.16	8.96	6.82	-2.14	52.94	3.28	49.66	145.69
TAMIL NADU	0.00	183.44	183.44	0.00	92.57	92.57	20.81	81.45	-60.64	215.38
PONDICHERRY	0.00	0.00	0.00	0.00	0.00	0.00	3.37	6.11	-2.74	-2.74
GOA	0.00	0.00	0.00	0.00	0.00	0.00	3.47	2.25	1.21	1.21
TELANGANA	11.76	700.39	688.63	75.51	80.99	5.48	36.26	33.51	2.76	696.87
WEST BENGAL	92.12	389.78	297.66	13.27	251.31	238.04	57.34	29.76	27.58	563.28
ODISHA	39.69	124.76	85.07	49.02	5.03	-43.99	56.59	17.21	39.37	80.46
BIHAR	0.00	266.58	266.58	0.00	33.77	33.77	58.25	49.03	9.21	309.56
JHARKHAND	0.00	137.87	137.87	0.00	0.00	0.00	14.39	28.90	-14.50	123.36
SIKKIM	0.00	0.00	0.00	28.76	0.00	-28.76	0.84	15.14	-14.29	-43.05
DVC	319.90	0.00	-319.90	9.09	0.00	-9.09	14.61	35.84	-21.22	-350.21
ARUNACHAL PRADESH	0.00	0.00	0.00	0.00	3.96	3.96	15.59	2.41	13.18	17.14
ASSAM	0.00	56.28	56.28	9.77	12.72	2.95	38.80	17.48	21.32	80.55
MANIPUR	0.00	29.45	29.45	13.00	0.00	-13.00	4.89	4.03	0.87	17.32
MEGHALAYA	0.00	11.52	11.52	4.65	14.48	9.83	3.91	9.67	-5.76	15.59
MIZORAM	0.00	0.00	0.00	3.16	0.00	-3.16	7.58	0.61	6.97	3.81
NAGALAND	0.00	0.00	0.00	0.00	9.65	9.65	10.65	0.48	10.17	19.82
TRIPURA	0.84	0.00	-0.84	40.03	0.00	-40.03	13.89	4.67	9.23	-31.65
NHPC STATIONS	0.00	0.00	0.00	146.38	0.00	-146.38	4.78	53.48	-48.71	-195.08
NJPC	0.00	0.00	0.00	57.94	0.00	-57.94	4.12	13.25	-9.13	-67.07
AD HYDRO	43.77	0.00	-43.77	65.57	0.00	-65.57	6.85	4.43	2.42	-106.92
KARCHAM WANGTOO	131.23	0.00	-131.23	242.27	0.00	-242.27	11.68	8.66	3.01	-370.49
SHREE CEMENT	150.20	0.00	-150.20	24.85	0.00	-24.85	2.88	2.92	-0.04	-175.09
LANCO BUDHIL	0.00	0.00	0.00	46.65	0.00	-46.65	1.79	0.83	0.96	-45.69
MALANA	0.00	0.00	0.00	5.15	0.00	-5.15	0.51	0.42	0.09	-5.06



JINDAL POWER	93.33	0.00	-93.33	0.59	0.00	-0.59	7.72	6.23	1.49	-92.43
LANKO_AMK	0.00	0.00	0.00	0.00	0.00	0.00	0.64	1.47	-0.82	-0.82
NSPCL	0.00	0.00	0.00	0.00	0.00	0.00	1.66	3.63	-1.97	-1.97
ACBIL	9.67	0.00	-9.67	41.07	0.00	-41.07	11.99	0.54	11.45	-39.29
BALCO	0.00	0.00	0.00	0.00	0.00	0.00	5.78	1.31	4.47	4.47
RGPPL(DABHOL)	0.00	0.00	0.00	0.00	0.00	0.00	5.96	0.24	5.72	5.72
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	5.86	15.02	-9.16	-9.16
DCPP	0.00	0.00	0.00	116.91	0.00	-116.91	5.85	4.73	1.12	-115.79
EMCO	0.15	0.00	-0.15	0.18	0.00	-0.18	2.75	1.71	1.04	0.70
VANDANA VIDYUT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	-0.23	-0.23
ESSAR STEEL	0.00	7.52	7.52	0.00	268.47	268.47	19.81	13.25	6.55	282.54
KSK MAHANADI	0.00	0.00	0.00	0.00	0.00	0.00	0.13	2.90	-2.77	-2.77
ESSAR POWER	0.00	0.00	0.00	0.00	0.00	0.00	1.29	0.00	1.29	1.29
JINDAL STAGE-II	122.55	0.00	-122.55	40.42	0.00	-40.42	0.00	0.00	0.00	-162.98
DB POWER	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.00	0.52	0.52
DHARIWAL POWER	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.00	0.52	0.52
JAYPEE NIGRIE	0.00	0.00	0.00	6.42	0.00	-6.42	11.30	4.47	6.83	0.41
DGEN MEGA POWER	0.00	0.00	0.00	0.00	0.00	0.00	3.60	0.00	3.60	3.60
GMR CHHATTISGARH	0.00	0.00	0.00	0.00	0.00	0.00	2.59	30.43	-27.85	-27.85
KORBA WEST POWER	33.22	0.00	-33.22	99.90	0.00	-99.90	7.09	2.58	4.50	-128.62
MB POWER	0.00	0.00	0.00	6.34	0.00	-6.34	0.00	0.00	0.00	-6.34
SIMHAPURI	182.65	0.00	-182.65	132.57	0.00	-132.57	3.10	3.19	-0.09	-315.31
MEENAKSHI	93.86	0.00	-93.86	25.79	0.00	-25.79	2.68	2.16	0.52	-119.12
COASTGEN	180.58	0.00	-180.58	0.00	0.00	0.00	3.67	2.41	1.26	-179.32
THERMAL POWERTECH	214.95	0.00	-214.95	18.01	0.00	-18.01	22.27	2.43	19.84	-213.12
STERLITE	390.66	0.00	-390.66	88.25	0.00	-88.25	19.65	20.01	-0.36	-479.26
MAITHON POWER LTD	61.96	0.00	-61.96	16.55	0.00	-16.55	4.42	6.40	-1.98	-80.49
ADHUNIK POWER LTD	87.27	0.00	-87.27	19.07	0.00	-19.07	2.70	2.29	0.41	-105.93
CHUZACHEN HEP	0.00	0.00	0.00	42.51	0.00	-42.51	5.26	6.10	-0.85	-43.36
RANGIT HEP	0.00	0.00	0.00	3.42	0.00	-3.42	0.76	1.34	-0.58	-4.00
GMR KAMALANGA	199.88	0.00	-199.88	2.02	0.00	-2.02	2.62	3.04	-0.42	-202.32
JITPL	31.14	0.00	-31.14	478.62	0.00	-478.62	15.06	15.28	-0.22	-509.98
TEESTA HEP	0.00	0.00	0.00	26.18	0.00	-26.18	1.53	8.42	-6.89	-33.07
DAGACHU	15.72	0.00	-15.72	0.00	0.00	0.00	0.79	1.79	-1.00	-16.72
RANGANADI HEP	0.00	0.00	0.00	0.00	0.00	0.00	1.37	2.80	-1.43	-1.43
DOYANG HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.27	-0.02	-0.02
LOKTAK	0.00	0.00	0.00	1.17	0.00	-1.17	0.00	0.00	0.00	-1.17
<b>Total</b>	<b>4254.3</b>	<b>4128.0</b>	<b>-126.3</b>	<b>2913.4</b>	<b>2913.4</b>	<b>0.0</b>	<b>1356.1</b>	<b>1371.5</b>	<b>-15.5</b>	<b>-141.7</b>

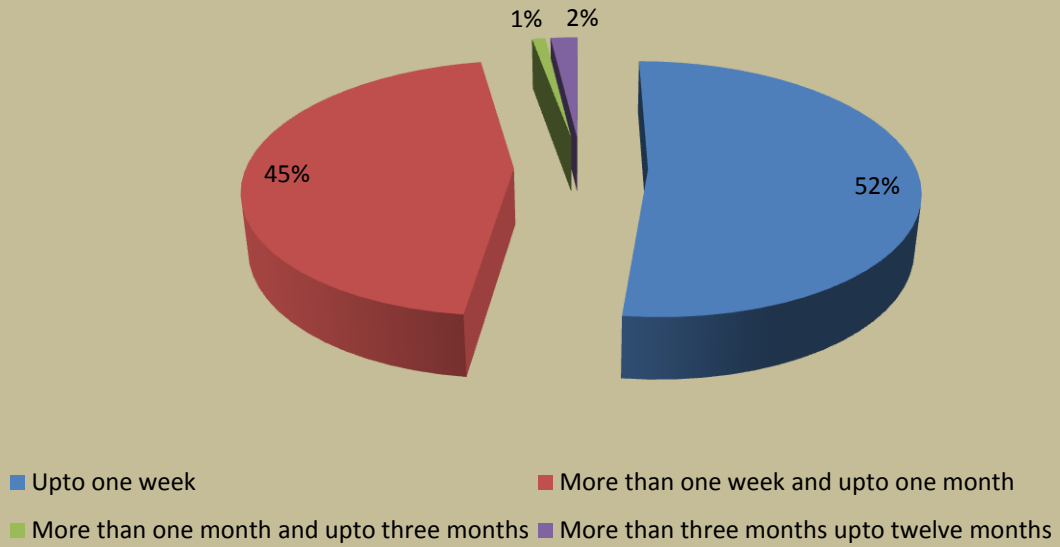
Source: NLDC

\* 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.

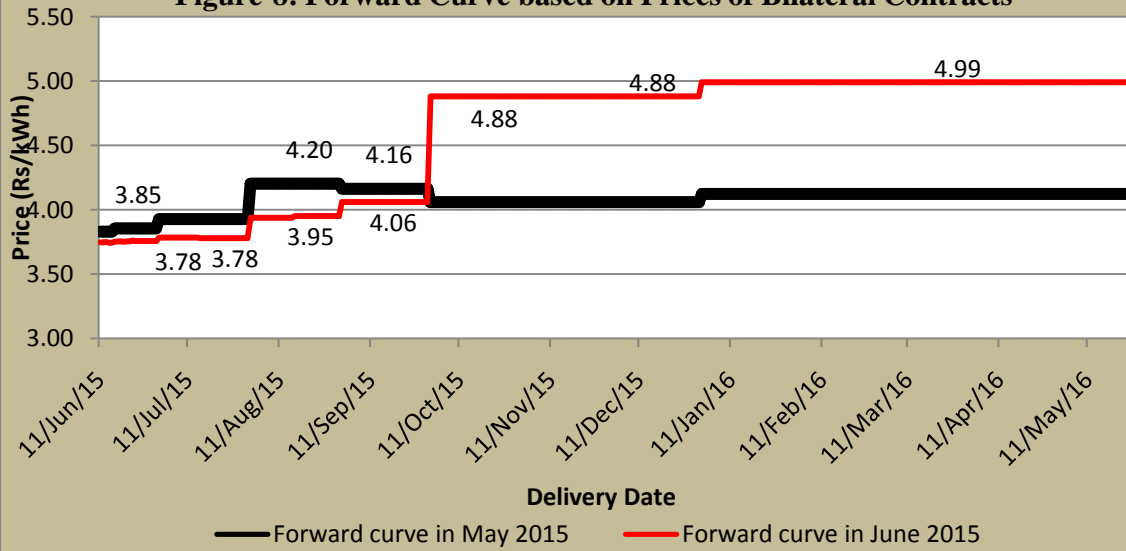
\*\* (-) indicates sale and (+) indicates purchase,

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

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

Sr.No.	Details of REC Transactions	IEX		PXIL	
		Solar	Non-Solar	Solar	Non Solar
A	Volume of Buy Bid	80867	211533	2322	45046
B	Volume of Sell Bid	1466946	5814861	573982	5050498
C	Ratio of Buy Bid to Sell Bid Volume	0.06	0.04	0.004	0.009
D	Market Clearing Volume (MWh)	80867	211533	2322	45046
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>