Monthly Report on Short-term Transactions of Electricity in India

November, 2014

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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 Aluminium Company Limited
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CGPL	Coastal Gujarat Power Limited
CHUZACHEN HEP	Chuzachen Hydro electric power project
DB Power	Diligent Power Pvt. Ltd.
DCPP	Donga Mahua Captive Power Plant
DHARIWAL POWER	Dhariwal Power Station
DVC	Damodar Valley Corporation
EMCO	EMCO Energy Limited
ESSAR STEEL	Essar Steel Ltd
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
KSK MAHANADI	KSK Mahanadi Power Ltd
LANCO BUDHIL	Lanco Budhil Hydro Power Private Limited
LANKO_AMK	Lanco Amarkantak Power Private 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
UI	Unscheduled Interchange
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 Unscheduled Interchange (UI). 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 November, 2014 is as under:

I: Volume of Short-term Transactions of Electricity

During the month of November 2014, total electricity generation excluding generation from renewable and captive power plants in India was 85273.56 MUs (Table-1).

Of the total electricity generation, 7415.79 MUs (8.70%) were transacted through short-term, comprising of 3682.64 MUs (4.32%) through Bilateral (through traders and term-ahead contracts on Power Exchanges and directly between distribution companies), followed by 2134.03 MUs (2.50%) through day ahead collective transactions on Power Exchanges (IEX and PXIL) and 1599.13 MUs (1.88%) through UI (Table-1 & Figure-2).

Of the total short-term transactions, Bilateral constitute 49.66% (34.38% through traders and term-ahead contracts on Power Exchanges and 15.28% directly between distribution companies) followed by 28.78% through day ahead collective transactions on Power Exchanges and 21.56% through UI (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 trading

licensees undertake electricity transactions through bilateral and through power exchanges. Here, 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 30.11.2014, of which only 21 have engaged in trading during November 2014. Top 5 trading licensees had a share of 68.49% in the total volume traded by all the licensees.

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 power, whereas decrease indicates the opposite. A HHI below 0.15 indicates non-concentration, a HHI between 0.15 to 0.25 indicates moderate concentration and a HHI above 0.25 indicates high concentration. The HHI computed for volume of electricity traded by trading licensees (inter-state & intra-state) was 0.1439 for the month of November 2014, which indicates that there was non-concentration of market power (Table-2).

The volume of electricity transacted through IEX and PXIL in the day ahead market was 2123.55 MUs and 10.48 MUs respectively. The volume of total Buy bids and Sale bids was 2842.45 MUs and 3573.99 MUs respectively in IEX and 34.43 MUs and 15.53 MUs respectively in PXIL. The gap between the volume of buy bids and sale bids placed through power exchanges shows that there was lesser demand in IEX (0.80 times) and there was higher demand in PXIL (2.22 times) in comparison to the electricity supply offered through these exchanges.

The volume of electricity transacted through IEX and PXIL in the term-ahead market was 6.17 MUs and 14.62 MUs respectively (Table-6 & Table-7).

II: Price of Short-term Transactions of Electricity

(i) ***Price of electricity transacted through Traders:*** Weighted average sale price has been computed for the electricity transacted through traders and it was ₹4.58/kWh. Weighted average sale price was also computed for the transactions during Round the Clock (RTC), Peak, and Off-Peak periods separately, and the sale prices were ₹4.66/kWh, ₹5.06/kWh and ₹3.48/kWh respectively. Minimum and Maximum sale prices were ₹2.64/kWh and ₹7.99/kWh respectively (Table-3 & 4).

(ii*) Price of electricity transacted Through Power Exchanges:* Minimum, Maximum and Weighted Average Prices have been computed for the electricity transacted through IEX and PXIL separately. The Minimum, Maximum and Weighted Average prices were ₹1.37/kWh, ₹20.00/kWh and ₹2.97/kWh respectively in IEX and ₹1.80/kWh, ₹3.70/kWh and ₹2.67/kWh respectively in PXIL (Table-5).

The price of electricity transacted through IEX and PXIL in the term-ahead market was ₹4.00/kWh and ₹3.09/kWh respectively (Table-6 and Table-7).

(iii*) Price of electricity transacted Through UI:* The average UI price was ₹1.54/kWh for all India grid. Minimum and Maximum UI prices were ₹0.00/kWh and ₹8.24/kWh respectively in the All India Grid.

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

III: Volume of Short-term Transactions of Electricity (Regional Entity[1]-Wise)

Of the total bilateral transactions, top 5 regional entities sold 65.05% of the volume, and these were Haryana, Delhi, Karnataka, Punjab and Simhapuri Energy Private Limited. Top 5 regional entities purchased 55.15% of the volume, and these were Madhya Pradesh, Andhra Pradesh, Rajasthan, Telangana and Himachal Pradesh. (Table-9, 10 & 19).

Of the total Power Exchange transactions, top 5 regional entities sold 46.20% of the volume, and these were Jindal Power Ltd, Chhattisgarh, Karnataka, Gujarat and Donga Mahua Captive Power Plant. Top 5 regional entities purchased 58.52% of the volume, and these were Rajasthan, Maharashtra, Gujarat, Essar Steel Ltd and Uttarakhand. (Table-11, 12 & 19).

Of the total UI transactions, top 5 regional entities underdrew 45.93% of the volume, and these were Maharashtra, Punjab, Bihar, Gujarat and Haryana. Top 5 regional entities overdrew 32.67% of the volume, and these were Uttar Pradesh, Rajasthan, Kerala, Gujarat and Orissa. (Table-13, 14 & 19).

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

Regional entity-wise total volume of net short-term transactions of electricity i.e. volume of net transactions through bilateral, power exchanges and UI is shown in Table-15 & 19. Top 5 electricity selling regional entities were Haryana, Delhi, Karnataka, Jindal Power Ltd and Chattisgarh. Top 5 electricity purchasing regional entities were Rajasthan, Madhya Pradesh, Andhra Pradesh, Uttarakhand and Telangana.

IV: Congestion[2] on Inter-state Transmission Corridor for Day-Ahead Market on Power Exchanges

Power Exchanges use a price discovery mechanism in which the aggregate demand and supply are matched to arrive at an unconstrained market price and volume. This step assumes that there is no congestion in the inter-state transmission system between different regions. However, in reality, the system operator, NLDC in coordination with RLDCs, limits the flow due to congestion in the inter-state transmission system. In such a situation, Power Exchanges adopt a mechanism called "Market Splitting"[3].

In the month of November 2014, congestion occurred in both the power exchanges, the details of which are shown in Table-16. The volume of electricity that could not be cleared due to congestion and could not be transacted through power exchanges is the difference between 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 the power exchanges due to congestion was 7.76% and -13.60% [4]of the unconstrained cleared volume

[2] "*Congestion" means a situation where the demand for transmission capacity exceeds the available transfer capability*

[3] *" Market Splitting" is a mechanism adopted by Power Exchange where the market is split in the event of transmission congestion, into predetermined (by NLDC) bid areas or zones, which are cleared individually at their respective area prices such that the energy balance in every bid area is reached based upon the demand and supply in individual bid areas and using the available transmission corridor capacity between various bid areas simultaneously"*
As a result of this market splitting the price of electricity in the importing region, where demand for electricity is more than supply, becomes relatively higher than the price of electricity in the exporting region.

[4] In some instances, after market splitting, the Actual Cleared Volume can be greater than the Unconstrained Cleared Volume.

in IEX and PXIL, respectively. In terms of time, congestion occurred was 100% in IEX and 44.17% in PXIL.

V: Analysis of Bilateral Contracts executed by Traders in December 2014[5]

(i) *Duration of bilateral contracts:*

During December, 2014, a total of 124 bilateral contracts (excluding banking/swap contracts) have been executed by traders for the volume of 1478 MUs. Figure-7 shows the percentage of contracts categorized according to the period of power supply. It can be observed from the figure that 80.6% of the contracts were executed for a duration of up to one week, followed by 16.1% of the contracts executed for a duration of more than a week and upto one month and with a small contribution of 1.6% each by the contracts executed for a duration more than one month and upto three months and three months and upto 12 months.

During the same period, 48 banking/swapping bilateral contracts were also executed for the volume of 859 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. For constructing the forward curve, the price of each contract is taken to be price for each day of that contract's period. 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 January 2015 to May 2016 based on bilateral contracts[6] executed till December, 2014. The forward curve drawn for November 2014 has also been depicted for the period January 2015 onwards for comparison purposes. It is observed that with the execution of new contracts in December 2014, there is a dip in the forward prices for the period from March 2015 to September 2015. However, forward prices remain same for period beyond September 2015.

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[5] *'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.*

[6] *Excluding Banking/Swapping contracts*

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 sources 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 market in electricity.

One REC is equivalent to 1 MWh of 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 November 2014 are shown in Table-20. The market clearing volume of Solar RECs transacted on IEX and PXIL were 245 and 904 respectively and the market clearing price of these RECs was ₹9300/MWh on both the power exchanges. Market clearing volume of Non-Solar RECs transacted on IEX and PXIL were 93100 and 102913 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 and sell bids was 0.001 and 0.003 in IEX and PXIL respectively. For Non-Solar RECs, the ratio of buy and sell bids was 0.019 and 0.018 in IEX and PXIL respectively

VII: Inferences:

- The percentage of short-term transactions of electricity to total electricity generation was 8.70%.

- Of the total short-term transactions of electricity, 49.66% was transacted through bilateral (through traders and term ahead contracts on power exchanges and directly by distribution companies), followed by 28.78% through Power Exchanges and 21.56% through UI.

- Top 5 trading licensees had a share of 68.49% in the total volume traded by all the trading licensees.

- The Herfindahl Hirschman Index computed for volume of electricity traded by trading licensees was 0.1439, indicating non-concentration of market power.

- The price of electricity transacted through trading licensees was ₹4.58/kWh. The price of electricity transacted through IEX and PXIL was ₹2.97/kWh and ₹2.67/kWh respectively.

- The price of electricity transacted through UI was ₹1.54/kWh

- The gap between the volume of buy bids and sale bids placed through power exchanges indicates that there was less demand in IEX (1: 0.80) and higher demand in PXIL (1: 2.22) when compared with the supply offered through these exchanges.

- Top 5 electricity selling regional entities were Haryana, Delhi, Karnataka, Jindal Power Ltd and Chattisgarh.. Top 5 electricity purchasing regional entities were Rajasthan, Madhya Pradesh, Andhra Pradesh, Uttarakhand and Telangana.

- The volume of electricity that could not be cleared in the power exchanges due to congestion was 7.76% and -13.60% of the unconstrained cleared volume in IEX and PXIL, respectively. In terms of time, congestion occurred was 100% in IEX and 44.17% in PXIL.

- In December 2014, 80.6% of the contracts were executed for a duration of up to one week, followed by 16.1% of the contracts executed for a duration of more than a week and upto one month and with a small contribution of 1.6% each of the contracts executed

for a duration more than one month and upto three months and three months and upto 12 months.

- There is a decreasing trend in the forward prices for the period from March 2015 to September 2015 because contracts executed in December 2014 for the delivery period were at lower prices when compared to contracts executed till November 2014. . However, forward prices remain same for period beyond September 2015.

- The market clearing volume of Solar RECs transacted on IEX and PXIL were 245 and 904 respectively and the market clearing price of these RECs was ₹9300/MWh on both the power exchanges. Market clearing volume of Non-Solar RECs transacted on IEX and PXIL were 93100 and 102913 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), NOVEMBER 2014				
Sr.No	**Short-term transactions**	**Volume (MUs)**	**% to Volume of short-term transactions**	**% to Total Generation**
1	Bilateral	3682.64	49.66%	4.32%
	(i) Through Traders and PXs	*2549.61*	34.38%	2.99%
	(ii) Direct	*1133.03*	15.28%	1.33%
2	Through Power Exchanges	2134.03	28.78%	2.50%
	(i) IEX	*2123.55*	28.64%	2.49%
	(ii) PXIL	*10.48*	0.14%	0.01%
3	Through UI	1599.13	21.56%	1.88%
	Total	**7415.79**	**100.00%**	**8.70%**
	Total Generation	**85273.56**	_	_
Source: NLDC				

Figure-1: Volume of Short-term Transactions of Electricity, November 2014

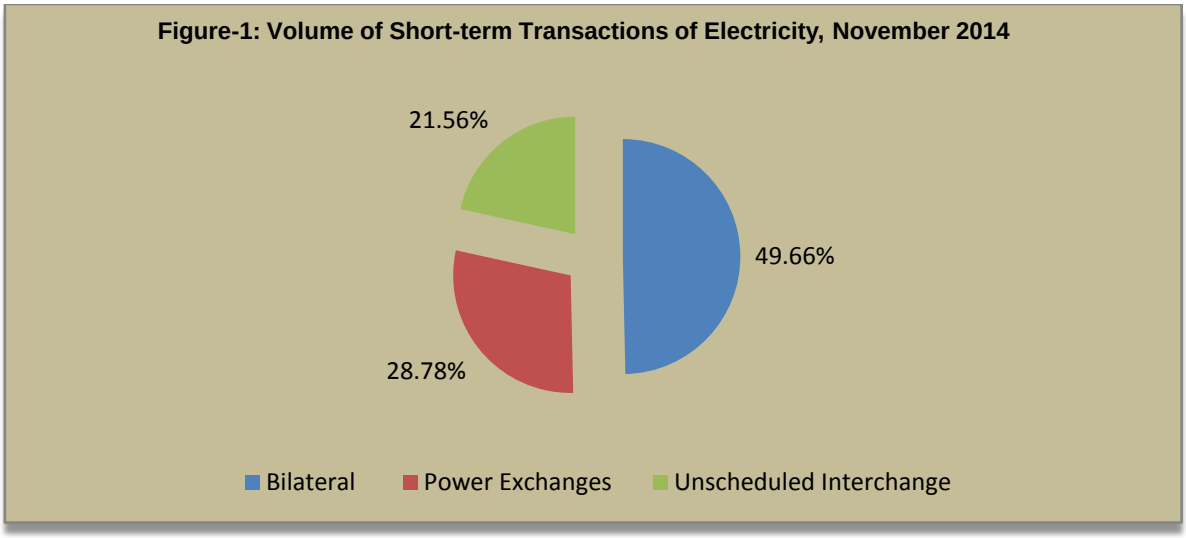
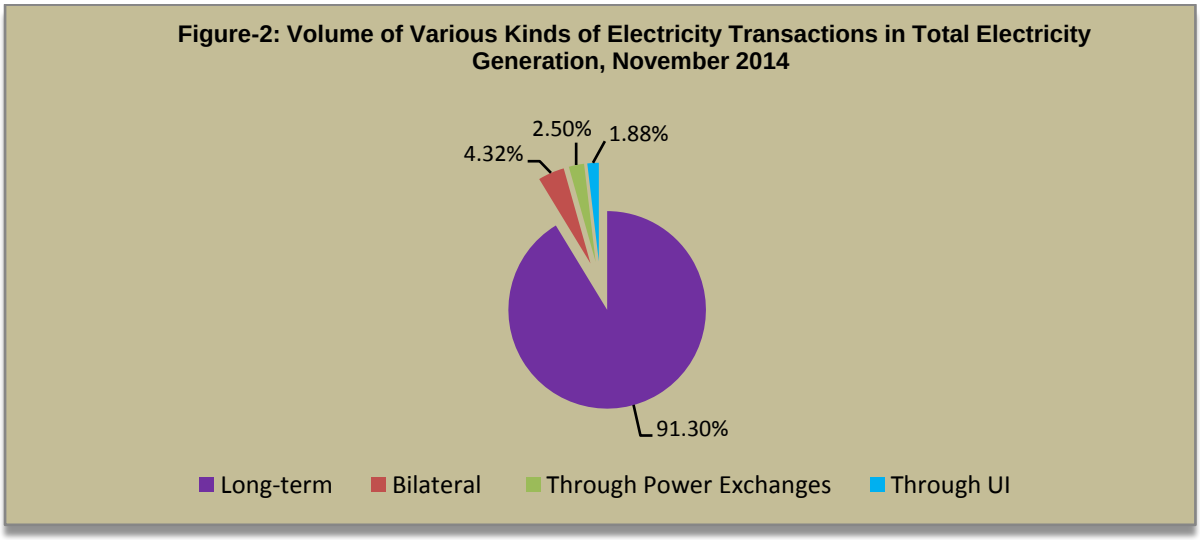


Figure-2: Volume of Various Kinds of Electricity Transactions in Total Electricity Generation, November 2014



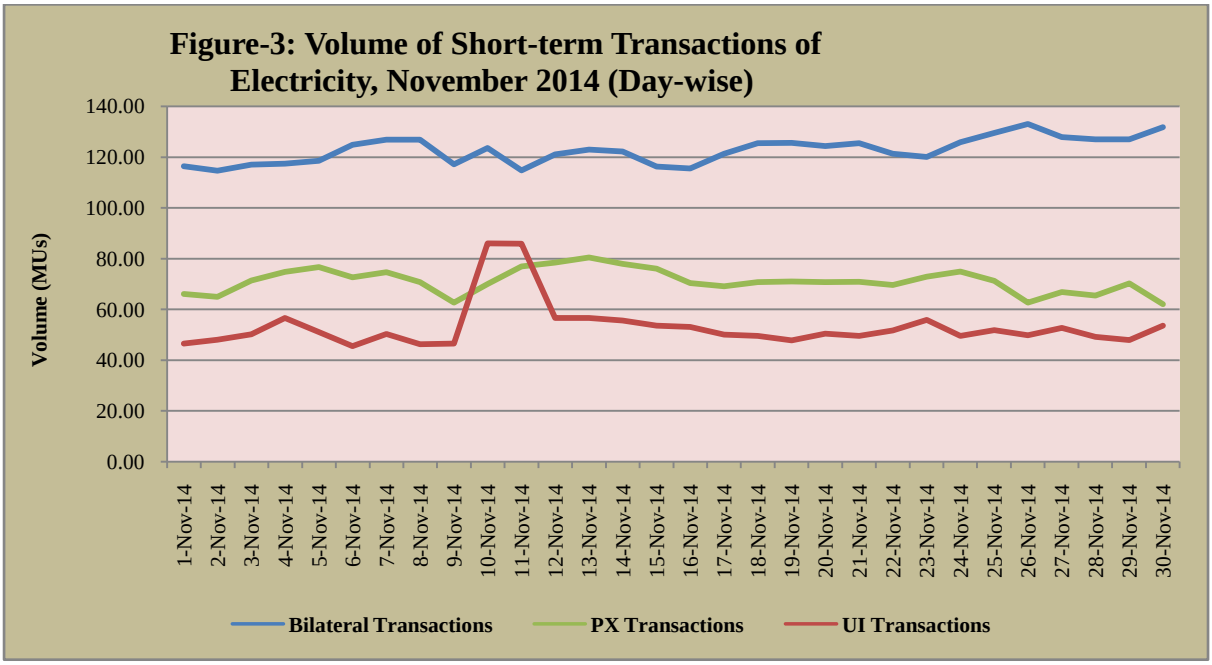


Figure-3: Volume of Short-term Transactions of Electricity, November 2014 (Day-wise)
Volume (MUs)
140.00
120.00
100.00
80.00
60.00
40.00
20.00
0.00
1-Nov-14
2-Nov-14
3-Nov-14
4-Nov-14
5-Nov-14
6-Nov-14
7-Nov-14
8-Nov-14
9-Nov-14
10-Nov-14
11-Nov-14
12-Nov-14
13-Nov-14
14-Nov-14
15-Nov-14
16-Nov-14
17-Nov-14
18-Nov-14
19-Nov-14
20-Nov-14
21-Nov-14
22-Nov-14
23-Nov-14
24-Nov-14
25-Nov-14
26-Nov-14
27-Nov-14
28-Nov-14
29-Nov-14
30-Nov-14
Bilateral Transactions
PX Transactions
UI Transactions

Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, NOVEMBER 2014			
Sr.No	**Name of the Trading Licensee**	**% Share in total Volume transacted by Trading Licensees**	**Herfindahl-Hirschman Index**
1	PTC India Ltd.	30.99%	0.0960
2	JSW Power Trading Company Ltd	10.35%	0.0107
3	Mittal Processors (P) Ltd.	9.99%	0.0100
4	GMR Energy Trading Ltd.	9.52%	0.0091
5	Tata Power Trading Company (P) Ltd.	7.64%	0.0058
6	Adani Enterprises Ltd.	5.70%	0.0033
7	Manikaran Power Ltd.	5.27%	0.0028
8	Knowledge Infrastructure Systems (P) Ltd	4.71%	0.0022
9	Shree Cement Ltd.	4.02%	0.0016
10	NTPC Vidyut Vyapar Nigam Ltd.	3.76%	0.0014
11	Jaiprakash Associates Ltd.	2.16%	0.0005
12	Instinct Infra & Power Ltd.	1.31%	0.0002
13	RPG Power Trading Company Ltd.	1.14%	0.0001
14	Reliance Energy Trading (P) Ltd	0.98%	0.0001
15	National Energy Trading & Services Ltd.	0.76%	0.0001
16	Arunachal Pradesh Power Corporation (P) ltd	0.70%	0.0000
17	My Home Power Private Ltd.	0.48%	0.0000
18	SN Power Markets Pvt. Ltd.	0.30%	0.0000
19	Essar Electric Power Development Corp. Ltd.	0.17%	0.0000
20	Pune Power Development (P) Ltd.	0.04%	0.0000
21	Customized Energy Solutions India (P) Ltd.	0.00%	0.0000
TOTAL		**100.00%**	**0.1439**
Top 5 trading licensees		**68.49%**	
Note 1: Volume of electricity transacted by the trading licensees includes bilateral transactions (inter-state & intra-state) and the transactions undertaken through power exchanges.			
Note 2: Volume of electricity transacted by Global Energy Ltd is not included.			
Source: Information submitted by trading licensees			

Figure- 4 : Percentage Share of Electricity Transacted by Trading Licensees, November 2014

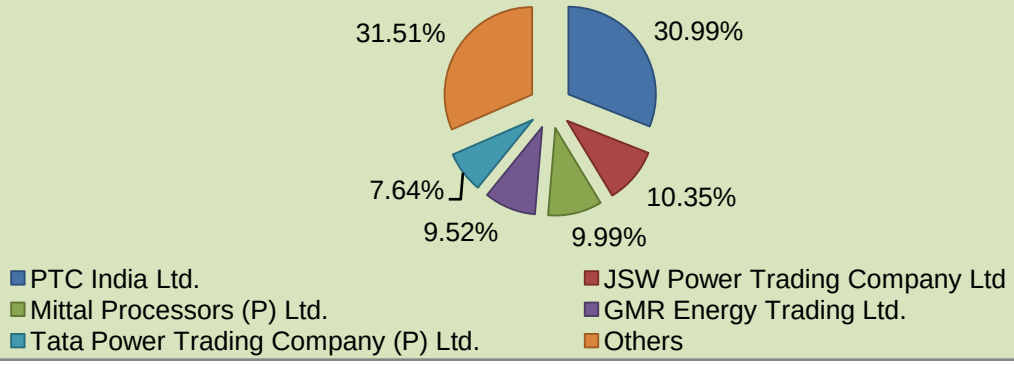


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, NOVEMBER 2014		
Sr.No		**Sale Price of Traders (₹/kWh)**
1	Minimum	2.64
2	Maximum	7.99
3	Weighted Average	4.58

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), NOVEMBER 2014		
Sr.No	**Period of Trade**	**Sale Price of Traders (₹/kWh)**
1	RTC	4.66
2	PEAK	5.06
3	OFF PEAK	3.48

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, NOVEMBER 2014			
Sr.No	**ACP**	**Price in IEX (₹/kWh)**	**Price in PXIL (₹/kWh)**
1	Minimum	1.37	1.80
2	Maximum	20.00	3.70
3	Weighted Average	2.97	2.67

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, NOVEMBER 2014			
Sr.No	**Term ahead contracts**	**Actual Scheduled Volume (MUs)**	**Weighted Average Price (₹/kWh)**
1	Intra-Day Contracts	6.17	4.00
	Total	**6.17**	**4.00**

Source: IEX

Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, NOVEMBER 2014			
Sr.No	**Term ahead contracts**	**Actual Scheduled Volume (MUs)**	**Weighted Average Price (₹/kWh)**
1	Intra-Day Contracts	0.22	3.28
2	Daily Contracts	14.40	3.09
	Total	**14.62**	**3.09**

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH UI, NOVEMBER 2014		
Sr.No		**Price in All India Grid (₹/kWh)**
1	Minimum	0.00
2	Maximum	8.24
3	Average	1.54

Source: NLDC

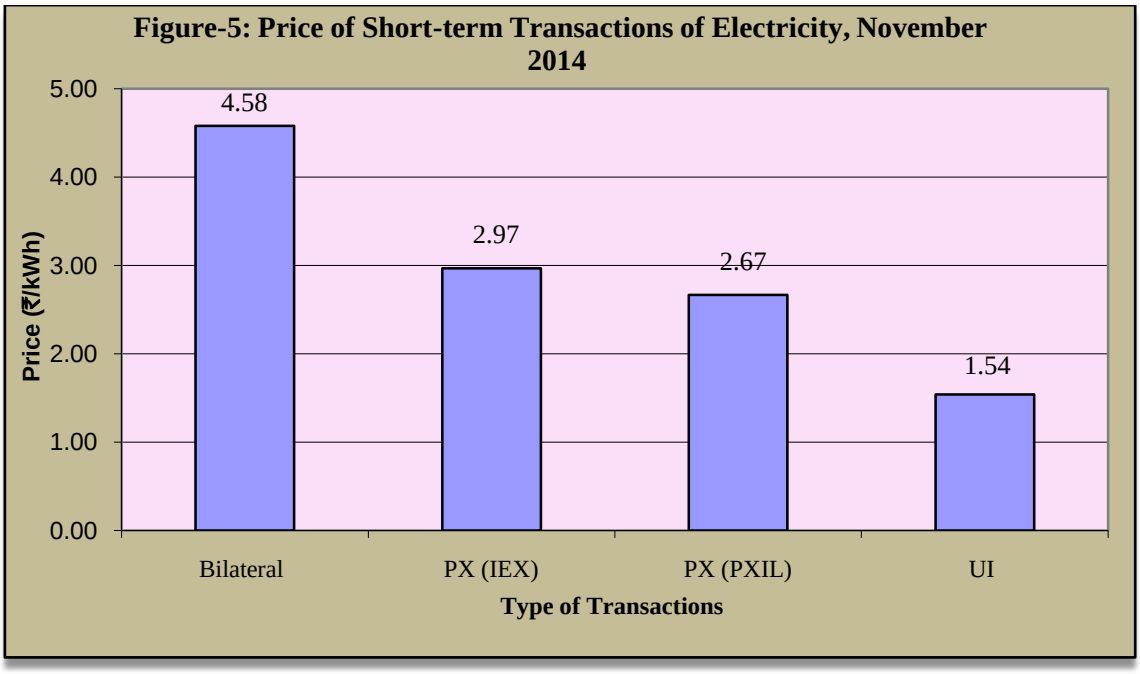


Figure-5: Price of Short-term Transactions of Electricity, November 2014
5.00
4.00
3.00
2.00
1.00
0.00
Price (₹/kWh)
4.58
2.97
2.67
1.54
Bilateral
PX (IEX)
PX (PXIL)
UI
Type of Transactions

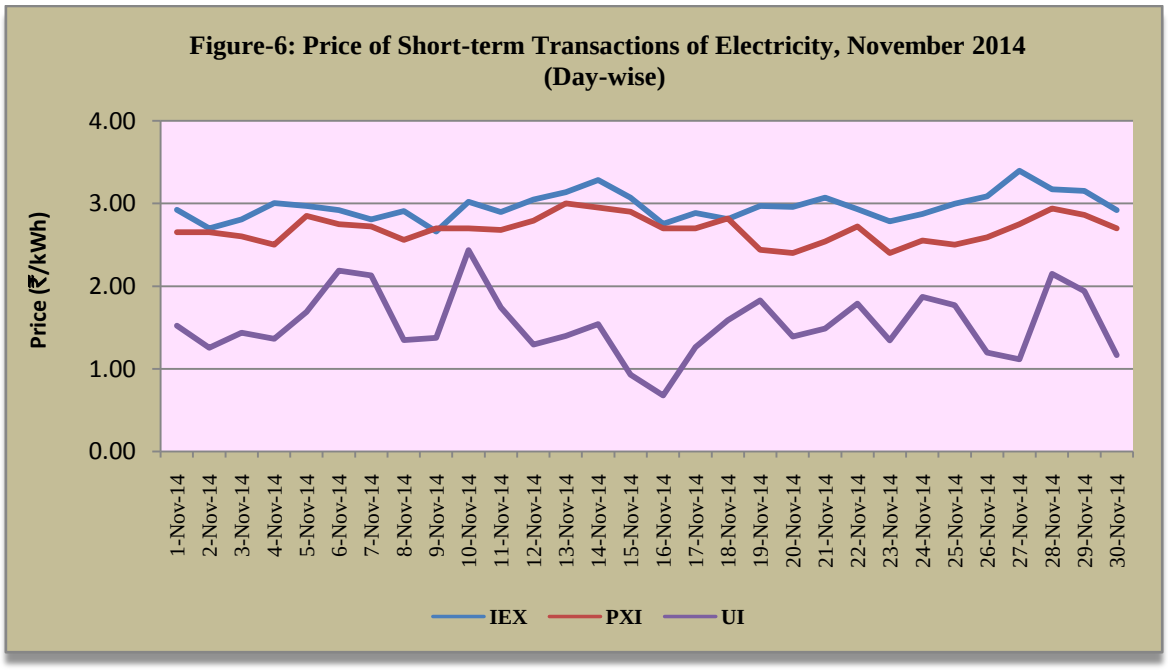


Figure-6: Price of Short-term Transactions of Electricity, November 2014 (Day-wise)
4.00
3.00
2.00
1.00
0.00
Price (₹/kWh)
1-Nov-14
2-Nov-14
3-Nov-14
4-Nov-14
5-Nov-14
6-Nov-14
7-Nov-14
8-Nov-14
9-Nov-14
10-Nov-14
11-Nov-14
12-Nov-14
13-Nov-14
14-Nov-14
15-Nov-14
16-Nov-14
17-Nov-14
18-Nov-14
19-Nov-14
20-Nov-14
21-Nov-14
22-Nov-14
23-Nov-14
24-Nov-14
25-Nov-14
26-Nov-14
27-Nov-14
28-Nov-14
29-Nov-14
30-Nov-14
IEX
PXI
UI

Table-9: VOLUME OF ELECTRICITY SALE THROUGH BILATERAL, NOVEMBER 2014		
Name of the State/UT/Other Regional Entity	**Volume of Sale (MUs)**	**% of Volume**
Haryana	750.96	24.75%
Delhi	424.74	14.00%
Karnataka	332.32	10.95%
Punjab	243.15	8.01%
SIMHAPURI	222.46	7.33%
JINDAL POWER	187.93	6.19%
Gujarat	164.60	5.42%
STERLITE	159.48	5.26%
West Bengal	131.37	4.33%
Chattisgarh	72.00	2.37%
Rajasthan	69.45	2.29%
SHREE CEMENT	68.60	2.26%
Orissa	46.89	1.55%
MAITHON POWER LTD	40.29	1.33%
Uttar Pradesh	28.37	0.94%
ACBIL	19.63	0.65%
J & K	16.70	0.55%
Telangana	14.52	0.48%
Meghalaya	12.65	0.42%
DVC	11.40	0.38%
UT Chandigarh	7.20	0.24%
MP	6.00	0.20%
AD HYDRO	1.84	0.06%
Tripura	0.84	0.03%
Goa	0.72	0.02%
KARCHAM WANGTOO	0.06	0.00%
Total	**3034.19**	**100.00%**
Volume of sale by top 5 States	**1973.63**	**65.05%**

Table-10: VOLUME OF ELECTRICITY PURCHASE THROUGH BILATERAL, NOVEMBER 2014		
Name of the State/UT/Other Regional Entity	**Volume of Purchase (MUs)**	**% of Volume**
MP	612.98	17.74%
Andhra Pradesh	368.93	10.68%
Rajasthan	362.58	10.50%
Telangana	302.73	8.76%
Himachal Pradesh	257.95	7.47%
Maharashtra	245.23	7.10%
Bihar	239.45	6.93%
J & K	231.89	6.71%
Uttarakhand	184.29	5.33%
Haryana	166.37	4.82%
Jharkhand	111.43	3.23%
Uttar Pradesh	108.76	3.15%
Orissa	100.71	2.92%
Meghalaya	40.57	1.17%
Kerala	29.15	0.84%
Gujarat	20.08	0.58%
Chattisgarh	18.78	0.54%
Goa	16.82	0.49%
Manipur	13.98	0.40%
Assam	8.60	0.25%
West Bengal	8.33	0.24%
Sikkim	3.69	0.11%
Meenakshi	0.95	0.03%
Tamilnadu	0.33	0.01%
Delhi	0.18	0.01%
Total	**3454.76**	**100.00%**
Volume of Purchase by top 5 States	**1905.16**	**55.15%**

Table-11: VOLUME OF ELECTRICITY SALE THROUGH POWER EXCHANGES, NOVEMBER 2014		
Name of the State/UT/Other Regional Entity	**Volume of Sale (MUs)**	**% of Volume**
JINDAL POWER	233.48	10.94%
Chattisgarh	226.04	10.59%
Karnataka	194.71	9.12%
Gujarat	169.64	7.95%
DCPP	162.07	7.59%
STERLITE	118.97	5.57%
Himachal Pradesh	95.05	4.45%
West Bengal	76.81	3.60%
KARCHAM WANGTOO	70.43	3.30%
JINDAL STAGE-II	68.61	3.22%
ADHUNIK POWER LTD	65.71	3.08%
Maharashtra	64.20	3.01%
Rajasthan	59.70	2.80%
Tripura	56.20	2.63%
GMR KAMALANGA	52.74	2.47%
JAYPEE NIGRIE	47.68	2.23%
MP	38.13	1.79%
ONGC PALATANA	27.42	1.28%
Delhi	26.53	1.24%
Telangana	26.41	1.24%
Orissa	21.89	1.03%
Haryana	20.05	0.94%
ACBIL	19.04	0.89%
CHUZACHEN HEP	18.22	0.85%
Meenakshi	17.68	0.83%
AD HYDRO	16.67	0.78%
Andhra Pradesh	15.91	0.75%
SHREE CEMENT	15.85	0.74%
TEESTA HEP	15.53	0.73%
Sikkim	14.36	0.67%
DVC	11.47	0.54%
MAITHON POWER LTD	11.10	0.52%
Goa	8.09	0.38%
Uttarakhand	7.48	0.35%
NJPC	6.29	0.29%
RANGIT HEP	5.33	0.25%
LANCO BUDHIL	4.66	0.22%
Manipur	4.09	0.19%
Assam	4.09	0.19%
SIMHAPURI	3.92	0.18%
Kerala	3.03	0.14%
Mizoram	2.98	0.14%
J & K	2.66	0.12%
NEEPCO Stations	2.07	0.10%
EMCO	0.61	0.03%
Arunachal Pradesh	0.25	0.01%
MALANA	0.11	0.01%
UT Chandigarh	0.06	0.00%
Meghalaya	0.03	0.00%
Total	**2134.03**	**100.00%**
Volume of sale by top 5 States	**985.94**	**46.20%**

Table-12: VOLUME OF ELECTRICITY PURCHASE THROUGH POWER EXCHANGES, NOVEMBER 2014		
Name of the State/UT/Other Regional Entity	**Volume of Purchase (MUs)**	**% of Volume**
Rajasthan	387.93	18.18%
Maharashtra	244.95	11.48%
Gujarat	241.44	11.31%
ESSAR STEEL	213.42	10.00%
Uttarakhand	161.12	7.55%
Kerala	111.13	5.21%
Punjab	100.89	4.73%
Haryana	96.14	4.51%
West Bengal	86.28	4.04%
MP	74.03	3.47%
Telangana	54.91	2.57%
Bihar	46.75	2.19%
Delhi	42.41	1.99%
Andhra Pradesh	41.34	1.94%
BALCO	36.69	1.72%
Karnataka	31.82	1.49%
Daman and Diu	30.33	1.42%
J & K	25.16	1.18%
Tamilnadu	24.47	1.15%
Meghalaya	22.08	1.03%
Himachal Pradesh	16.36	0.77%
Assam	15.44	0.72%
Goa	8.47	0.40%
Arunachal Pradesh	8.28	0.39%
Manipur	7.66	0.36%
UT Chandigarh	3.43	0.16%
Orissa	0.79	0.04%
Chattisgarh	0.27	0.01%
Nagaland	0.05	0.00%
Total	**2134.03**	**100.00%**
Volume of purchase by top 5 States	**1248.87**	**58.52%**

Table-13: VOLUME OF ELECTRICITY EXPORT THROUGH UI, NOVEMBER 2014		
Name of the State/UT/Other Regional Entity	**Volume of Export (MUs)**	**% of Volume**
Maharashtra	178.01	16.14%
Punjab	103.06	9.34%
Bihar	95.37	8.64%
Gujarat	66.80	6.06%
Haryana	63.46	5.75%
Tamilnadu	55.25	5.01%
Delhi	54.57	4.95%
Rajasthan	52.49	4.76%
MP	47.21	4.28%
Chattisgarh	39.33	3.57%
Uttar Pradesh	38.18	3.46%
NHPC Stations	32.60	2.96%
Assam	31.12	2.82%
Jharkhand	26.39	2.39%
Andhra Pradesh	17.13	1.55%
JINDAL POWER	16.84	1.53%
Goa	14.49	1.31%
J & K	14.27	1.29%
West Bengal	13.80	1.25%
DVC	11.83	1.07%
Meghalaya	11.81	1.07%
Orissa	11.54	1.05%
Telangana	9.55	0.87%
Sikkim	9.26	0.84%
Karnataka	8.94	0.81%
CGPL	7.51	0.68%
Himachal Pradesh	7.13	0.65%
Uttarakhand	6.27	0.57%
Manipur	5.75	0.52%
NEEPCO Stations	5.45	0.49%
Daman and Diu	4.88	0.44%
Dadra & Nagar Haveli	4.32	0.39%
NJPC	4.30	0.39%
Pondicherry	3.90	0.35%
ACBIL	3.81	0.35%
STERLITE	3.74	0.34%
KARCHAM WANGTOO	3.62	0.33%
UT Chandigarh	3.18	0.29%
MAITHON POWER LTD	3.01	0.27%
DCPP	2.49	0.23%
Kerala	2.08	0.19%
LANKO_AMK	1.83	0.17%
SHREE CEMENT	1.28	0.12%
NSPCL	1.28	0.12%
BALCO	1.19	0.11%
SIMHAPURI	1.13	0.10%
Tripura	0.67	0.06%
AD HYDRO	0.42	0.04%
Arunachal Pradesh	0.28	0.03%
Nagaland	0.22	0.02%
Mizoram	0.13	0.01%
RGPPL	0.02	0.00%
Total	**1103.20**	**100.00%**
Volume of Export by top 5 States	**506.69**	**45.93%**

Table-14: VOLUME OF ELECTRICITY IMPORT THROUGH UI, NOVEMBER 2014		
Name of the State/UT/Other Regional Entity	**Volume of Import (MUs)**	**% of Volume**
Uttar Pradesh	127.53	9.76%
Rajasthan	108.29	8.28%
Kerala	66.52	5.09%
Gujarat	63.49	4.86%
Orissa	61.25	4.69%
Telangana	61.17	4.68%
J & K	60.04	4.59%
West Bengal	58.64	4.49%
Karnataka	56.94	4.36%
Haryana	50.36	3.85%
Andhra Pradesh	45.61	3.49%
Punjab	43.08	3.30%
DVC	39.00	2.98%
Uttarakhand	37.94	2.90%
Tripura	35.24	2.70%
MP	33.32	2.55%
Assam	31.31	2.40%
Chattisgarh	30.62	2.34%
Himachal Pradesh	30.23	2.31%
Maharashtra	30.08	2.30%
Arunachal Pradesh	22.38	1.71%
Bihar	20.14	1.54%
Tamilnadu	16.87	1.29%
STERLITE	15.56	1.19%
NEEPCO Stations	15.07	1.15%
CGPL	14.97	1.15%
Delhi	12.11	0.93%
Goa	11.73	0.90%
Nagaland	10.95	0.84%
UT Chandigarh	9.72	0.74%
Jharkhand	8.30	0.64%
NHPC Stations	7.77	0.59%
Mizoram	7.68	0.59%
Dadra & Nagar Haveli	7.38	0.56%
BALCO	7.13	0.55%
RGPPL	5.87	0.45%
SIMHAPURI	5.16	0.39%
MAITHON POWER LTD	4.52	0.35%
DCPP	4.51	0.34%
Manipur	4.23	0.32%
KARCHAM WANGTOO	4.01	0.31%
NJPC	3.39	0.26%
Pondicherry	3.11	0.24%
JINDAL POWER	3.08	0.24%
Meghalaya	2.79	0.21%
LANKO_AMK	1.79	0.14%
Daman and Diu	1.39	0.11%
NSPCL	1.33	0.10%
ACBIL	1.15	0.09%
SHREE CEMENT	1.11	0.08%
Sikkim	1.04	0.08%
AD HYDRO	0.34	0.03%
Total	**1307.24**	**100.00%**
Volume of Import by top 5 States	**427.08**	**32.67%**

Table-15: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY-WISE), NOVEMBER 2014		
Sr.No.	**Name of the State/UT/Other Regional Entity**	**Total volume of net short-term transactions of electricity***
1	Rajasthan	677.16
2	MP	629.00
3	Andhra Pradesh	422.84
4	Uttarakhand	369.60
5	Telangana	368.32
6	J & K	283.46
7	Maharashtra	278.05
8	ESSAR STEEL	213.42
9	Bihar	210.98
10	Himachal Pradesh	202.36
11	Kerala	201.69
12	Uttar Pradesh	169.73
13	Jharkhand	93.35
14	Orissa	82.42
15	BALCO	42.62
16	Meghalaya	40.94
17	Arunachal Pradesh	30.12
18	Daman and Diu	26.83
19	Assam	20.15
20	Manipur	16.03
21	Goa	13.71
22	Nagaland	10.78
23	NEEPCO Stations	7.55
24	CGPL	7.46
25	RGPPL	5.85
26	Mizoram	4.57
27	DVC	4.31
28	Dadra & Nagar Haveli	3.06
29	UT Chandigarh	2.72
30	NSPCL	0.04
31	LANKO_AMK	-0.04
32	MALANA	-0.11
33	EMCO	-0.61
34	Pondicherry	-0.80
35	LANCO BUDHIL	-4.66
36	RANGIT HEP	-5.33
37	NJPC	-7.20
38	Tamilnadu	-13.58
39	TEESTA HEP	-15.53
40	Meenakshi	-16.73
41	CHUZACHEN HEP	-18.22
42	AD HYDRO	-18.59
43	Sikkim	-18.89
44	Tripura	-22.46
45	NHPC Stations	-24.83
46	ONGC PALATANA	-27.42

47	ACBIL	-41.34
48	JAYPEE NIGRIE	-47.68
49	MAITHON POWER LTD	-49.88
50	GMR KAMALANGA	-52.74
51	ADHUNIK POWER LTD	-65.71
52	JINDAL STAGE-II	-68.61
53	West Bengal	-68.74
54	KARCHAM WANGTOO	-70.10
55	Gujarat	-76.04
56	SHREE CEMENT	-84.64
57	DCPP	-160.05
58	Punjab	-202.24
59	SIMHAPURI	-222.35
60	STERLITE	-266.62
61	Chattisgarh	-287.70
62	JINDAL POWER	-435.18
63	Karnataka	-447.20
64	Delhi	-451.15
65	Haryana	-521.59
** Total volume of net short-term transactions of electricity includes net of transactions of electricity through bilateral, power exchange and UI*		
(-) indicates sale and (+) indicates purchase		

Table-16: DETAILS OF CONGESTION IN POWER EXCHANGES, NOVEMBER 2014			
	Details of Congestion	**IEX**	**PXIL**
A	Unconstrained Cleared Volume* (MUs)	2302.32	9.23
B	Actual Cleared Volume and hence scheduled[#] (MUs)	2123.55	10.48
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	178.77	-1.25
D	Volume of electricity that could not be cleared as % to Unconstrained Cleared Volume	7.76%	-13.60%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	100.00%	44.17%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	25.00%	12.58%
	6.00 - 12.00 hours	25.00%	33.65%
	12.00 - 18.00 hours	25.00%	32.70%
	18.00 - 24.00 hours	25.00%	21.07%
** This power would have been scheduled had there been no congestion.* *[#] In some instances, after market splitting the Actual Cleared Volume can be greater than the Unconstrained Cleared Volume.*			
Source: IEX & PXIL & NLDC			

Table-17: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA (MUs), NOVEMBER 2014 (DAY-WISE)						Total Electricity Generation (MU) as given at CEA Website
Date	Bilateral		Power Exchange (Area Clearing Volume# of Day Ahead Market)		Unscheduled Interchange (Over Drawl+ Under Generation)	
	Through Traders and PXs**	Direct	IEX	PXI		
1-Nov-14	82.49	33.95	65.68	0.40	46.61	2845.37
2-Nov-14	78.49	36.18	64.75	0.22	48.07	2775.34
3-Nov-14	83.59	33.53	71.29	0.15	50.24	2854.41
4-Nov-14	83.98	33.44	74.36	0.47	56.61	2885.61
5-Nov-14	84.62	33.91	76.49	0.21	51.15	2952.62
6-Nov-14	88.65	36.25	72.23	0.46	45.56	2958.74
7-Nov-14	88.81	38.09	74.38	0.23	50.32	2672.00
8-Nov-14	87.81	39.05	70.23	0.49	46.37	2898.47
9-Nov-14	78.28	38.89	62.56	0.23	46.55	2850.23
10-Nov-14	86.00	37.64	69.82	0.23	86.02	2901.75
11-Nov-14	83.26	31.58	76.50	0.45	85.90	2912.91
12-Nov-14	83.31	37.80	78.14	0.30	56.66	2871.00
13-Nov-14	85.01	37.98	80.19	0.24	56.67	2861.33
14-Nov-14	81.93	40.28	77.60	0.27	55.60	2818.37
15-Nov-14	77.63	38.70	75.78	0.28	53.58	2810.57
16-Nov-14	74.50	41.03	70.08	0.36	53.18	2740.85
17-Nov-14	83.03	38.30	68.86	0.33	50.07	2783.15
18-Nov-14	87.19	38.37	70.41	0.35	49.59	2805.81
19-Nov-14	86.10	39.51	70.61	0.43	47.82	2811.91
20-Nov-14	83.52	40.83	70.48	0.35	50.42	2836.65
21-Nov-14	85.50	39.96	70.45	0.48	49.66	2904.29
22-Nov-14	81.57	39.75	69.36	0.33	51.78	2861.79
23-Nov-14	80.45	39.70	72.38	0.47	55.91	2743.46
24-Nov-14	85.85	40.01	74.38	0.50	49.56	2829.60
25-Nov-14	89.43	40.06	70.85	0.45	51.89	2866.47
26-Nov-14	92.49	40.56	62.47	0.32	49.80	2864.35
27-Nov-14	90.39	37.55	66.49	0.36	52.72	2874.45
28-Nov-14	92.20	34.86	65.09	0.36	49.17	2871.78
29-Nov-14	89.64	37.41	69.91	0.37	47.96	2831.69
30-Nov-14	93.89	37.85	61.74	0.37	53.69	2778.59
Total	**2549.61**	**1133.03**	**2123.55**	**10.48**	**1599.13**	**85273.56**

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), NOVEMBER 2014 (DAY-WISE)									
Market Segment	**Day ahead market of IEX**			**Day ahead market of PXIL**			**Under Drawl/Over Drawl from the Grid (UI)**		
Date	**Mini-mum ACP**	**Maxi-mum ACP**	**Weighted Average Price***	**Mini-mum ACP**	**Maxi-mum ACP**	**Weighted Average Price***	**All India Grid**		
							Mini-mum Price	**Maxi-mum Price**	**Average Price****
1-Nov-14	1.55	17.50	2.92	2.65	2.65	2.65	0.00	6.16	1.52
2-Nov-14	1.66	20.00	2.70	2.65	2.65	2.65	0.00	5.11	1.25
3-Nov-14	1.48	20.00	2.81	2.60	2.60	2.60	0.00	7.82	1.44
4-Nov-14	2.20	20.00	3.01	2.50	2.50	2.50	0.00	3.45	1.36
5-Nov-14	2.20	13.00	2.97	2.85	2.85	2.85	0.00	6.16	1.69
6-Nov-14	1.75	20.00	2.92	2.75	2.75	2.75	0.00	6.16	2.19
7-Nov-14	1.60	20.00	2.81	2.72	2.72	2.72	0.00	8.03	2.13
8-Nov-14	1.50	20.00	2.91	2.56	2.56	2.56	0.00	5.95	1.35
9-Nov-14	1.72	10.02	2.66	2.70	2.70	2.70	0.00	5.95	1.37
10-Nov-14	2.08	10.02	3.02	2.70	2.70	2.70	0.00	8.24	2.43
11-Nov-14	1.54	10.02	2.90	2.68	2.68	2.68	0.00	6.36	1.74
12-Nov-14	1.72	10.02	3.05	2.56	3.20	2.79	0.00	5.32	1.29
13-Nov-14	2.20	10.02	3.14	3.00	3.00	3.00	0.00	6.36	1.40
14-Nov-14	2.20	10.02	3.29	2.95	2.95	2.95	0.00	7.20	1.54
15-Nov-14	2.20	10.02	3.07	2.90	2.90	2.90	0.00	5.74	0.93
16-Nov-14	1.90	10.02	2.75	2.70	2.70	2.70	0.00	3.24	0.68
17-Nov-14	1.80	10.02	2.88	2.70	3.01	2.70	0.00	3.45	1.26
18-Nov-14	1.60	10.02	2.81	2.70	3.05	2.82	0.00	5.95	1.59
19-Nov-14	1.48	10.02	2.97	2.00	2.80	2.44	0.00	6.36	1.83
20-Nov-14	1.54	12.00	2.96	1.80	3.20	2.40	0.00	4.91	1.39
21-Nov-14	1.50	10.02	3.07	1.80	3.00	2.54	0.00	5.11	1.49
22-Nov-14	1.61	10.52	2.93	1.95	3.50	2.72	0.00	3.45	1.79
23-Nov-14	1.72	10.52	2.78	1.80	3.00	2.40	0.00	4.91	1.34
24-Nov-14	1.42	10.02	2.87	2.00	2.90	2.55	0.00	5.32	1.87
25-Nov-14	1.60	10.52	3.00	1.95	3.01	2.50	0.00	5.74	1.77
26-Nov-14	1.45	10.52	3.09	1.80	3.35	2.59	0.00	5.95	1.20
27-Nov-14	1.45	9.52	3.40	2.00	3.30	2.75	0.00	7.20	1.12
28-Nov-14	2.00	10.02	3.17	1.95	3.70	2.94	0.00	6.36	2.15
29-Nov-14	1.45	9.52	3.15	2.86	2.86	2.86	0.00	7.20	1.94
30-Nov-14	1.37	9.52	2.92	2.70	2.70	2.70	0.00	3.45	1.17
	1.37#	**20.00#**	**2.97**	**1.80#**	**3.70#**	**2.67**	**0.00#**	**8.24#**	**1.54**

Source: Data on price of PX transactions from IEX and PXIL and data on UI Price from NLDC.

* Weighted average price computed based on Area Clearing Volume (ACV) and Area Clearing Price (ACP) for each hour of the day. Here, ACV and ACP represent the scheduled volume and weighted average price of all the bid areas of power exchanges.

** Simple average price of UI of 96 time blocks of 15 minutes each in a day. UI price includes Ceiling UI Rate +40% additional UI charge.

Maximum/Minimum in the month

Table-19: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY*-WISE) (MUs), NOVEMBER 2014										
Name of the State/UT/Other Regional Entity	Through Bilateral			Through Power Exchange			Through UI with Regional Grid			Total Net***
	Sale	Pur-chase	Net**	Sale	Pur-chase	Net**	Export (Under Drawl)	Import (Over Drawl)	Net**	
Punjab	243.15	0.00	-243.15	0.00	100.89	100.89	103.06	43.08	-59.98	-202.24
Haryana	750.96	166.37	-584.59	20.05	96.14	76.10	63.46	50.36	-13.09	-521.59
Rajasthan	69.45	362.58	293.12	59.70	387.93	328.23	52.49	108.29	55.80	677.16
Delhi	424.74	0.18	-424.56	26.53	42.41	15.88	54.57	12.11	-42.47	-451.15
Uttar Pradesh	28.37	108.76	80.39	0.00	0.00	0.00	38.18	127.53	89.35	169.73
Uttarakhand	0.00	184.29	184.29	7.48	161.12	153.64	6.27	37.94	31.67	369.60
Himachal Pradesh	0.00	257.95	257.95	95.05	16.36	-78.69	7.13	30.23	23.10	202.36
J & K	16.70	231.89	215.19	2.66	25.16	22.50	14.27	60.04	45.77	283.46
UT Chandigarh	7.20	0.00	-7.20	0.06	3.43	3.38	3.18	9.72	6.55	2.72
MP	6.00	612.98	606.98	38.13	74.03	35.90	47.21	33.32	-13.88	629.00
Maharashtra	0.00	245.23	245.23	64.20	244.95	180.74	178.01	30.08	-147.92	278.05
Gujarat	164.60	20.08	-144.53	169.64	241.44	71.80	66.80	63.49	-3.31	-76.04
Chattisgarh	72.00	18.78	-53.22	226.04	0.27	-225.77	39.33	30.62	-8.71	-287.70
Daman and Diu	0.00	0.00	0.00	0.00	30.33	30.33	4.88	1.39	-3.49	26.83
Dadra & Nagar Haveli	0.00	0.00	0.00	0.00	0.00	0.00	4.32	7.38	3.06	3.06
Andhra Pradesh	0.00	368.93	368.93	15.91	41.34	25.43	17.13	45.61	28.48	422.84
Karnataka	332.32	0.00	-332.32	194.71	31.82	-162.89	8.94	56.94	48.01	-447.20
Kerala	0.00	29.15	29.15	3.03	111.13	108.10	2.08	66.52	64.44	201.69
Tamilnadu	0.00	0.33	0.33	0.00	24.47	24.47	55.25	16.87	-38.38	-13.58
Pondicherry	0.00	0.00	0.00	0.00	0.00	0.00	3.90	3.11	-0.80	-0.80
Telangana	14.52	302.73	288.21	26.41	54.91	28.50	9.55	61.17	51.62	368.32
West Bengal	131.37	8.33	-123.05	76.81	86.28	9.47	13.80	58.64	44.84	-68.74
Orissa	46.89	100.71	53.83	21.89	0.79	-21.10	11.54	61.25	49.70	82.42
Bihar	0.00	239.45	239.45	0.00	46.75	46.75	95.37	20.14	-75.23	210.98
Jharkhand	0.00	111.43	111.43	0.00	0.00	0.00	26.39	8.30	-18.08	93.35
Sikkim	0.00	3.69	3.69	14.36	0.00	-14.36	9.26	1.04	-8.22	-18.89
DVC	11.40	0.00	-11.40	11.47	0.00	-11.47	11.83	39.00	27.17	4.31
Arunachal Pradesh	0.00	0.00	0.00	0.25	8.28	8.02	0.28	22.38	22.10	30.12
Assam	0.00	8.60	8.60	4.09	15.44	11.36	31.12	31.31	0.19	20.15
Manipur	0.00	13.98	13.98	4.09	7.66	3.57	5.75	4.23	-1.52	16.03
Meghalaya	12.65	40.57	27.92	0.03	22.08	22.05	11.81	2.79	-9.03	40.94
Mizoram	0.00	0.00	0.00	2.98	0.00	-2.98	0.13	7.68	7.55	4.57
Nagaland	0.00	0.00	0.00	0.00	0.05	0.05	0.22	10.95	10.73	10.78
Tripura	0.84	0.00	-0.84	56.20	0.00	-56.20	0.67	35.24	34.57	-22.46
Goa	0.72	16.82	16.10	8.09	8.47	0.37	14.49	11.73	-2.75	13.71
NHPC Stations	0.00	0.00	0.00	0.00	0.00	0.00	32.60	7.77	-24.83	-24.83
NJPC	0.00	0.00	0.00	6.29	0.00	-6.29	4.30	3.39	-0.92	-7.20

AD HYDRO	1.84	0.00	-1.84	16.67	0.00	-16.67	0.42	0.34	-0.08	-18.59
KARCHAM WANGTOO	0.06	0.00	-0.06	70.43	0.00	-70.43	3.62	4.01	0.39	-70.10
SHREE CEMENT	68.60	0.00	-68.60	15.85	0.00	-15.85	1.28	1.11	-0.18	-84.64
LANCO BUDHIL	0.00	0.00	0.00	4.66	0.00	-4.66	0.00	0.00	0.00	-4.66
MALANA	0.00	0.00	0.00	0.11	0.00	-0.11	0.00	0.00	0.00	-0.11
JINDAL POWER	187.93	0.00	-187.93	233.48	0.00	-233.48	16.84	3.08	-13.77	-435.18
LANKO_AMK	0.00	0.00	0.00	0.00	0.00	0.00	1.83	1.79	-0.04	-0.04
NSPCL	0.00	0.00	0.00	0.00	0.00	0.00	1.28	1.33	0.04	0.04
ACBIL	19.63	0.00	-19.63	19.04	0.00	-19.04	3.81	1.15	-2.67	-41.34
BALCO	0.00	0.00	0.00	0.00	36.69	36.69	1.19	7.13	5.94	42.62
RGPPL	0.00	0.00	0.00	0.00	0.00	0.00	0.02	5.87	5.85	5.85
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	7.51	14.97	7.46	7.46
DCPP	0.00	0.00	0.00	162.07	0.00	-162.07	2.49	4.51	2.02	-160.05
EMCO	0.00	0.00	0.00	0.61	0.00	-0.61	0.00	0.00	0.00	-0.61
VANDANA VIDYUT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ESSAR STEEL	0.00	0.00	0.00	0.00	213.42	213.42	0.00	0.00	0.00	213.42
JINDAL STAGE-II	0.00	0.00	0.00	68.61	0.00	-68.61	0.00	0.00	0.00	-68.61
JAYPEE NIGRIE	0.00	0.00	0.00	47.68	0.00	-47.68	0.00	0.00	0.00	-47.68
SIMHAPURI	222.46	0.00	-222.46	3.92	0.00	-3.92	1.13	5.16	4.03	-222.35
Meenakshi	0.00	0.95	0.95	17.68	0.00	-17.68	0.00	0.00	0.00	-16.73
STERLITE	159.48	0.00	-159.48	118.97	0.00	-118.97	3.74	15.56	11.83	-266.62
MAITHON POWER LTD	40.29	0.00	-40.29	11.10	0.00	-11.10	3.01	4.52	1.51	-49.88
ADHUNIK POWER LTD	0.00	0.00	0.00	65.71	0.00	-65.71	0.00	0.00	0.00	-65.71
CHUZACHEN HEP	0.00	0.00	0.00	18.22	0.00	-18.22	0.00	0.00	0.00	-18.22
RANGIT HEP	0.00	0.00	0.00	5.33	0.00	-5.33	0.00	0.00	0.00	-5.33
GMR KAMALANGA	0.00	0.00	0.00	52.74	0.00	-52.74	0.00	0.00	0.00	-52.74
TEESTA HEP	0.00	0.00	0.00	15.53	0.00	-15.53	0.00	0.00	0.00	-15.53
NEEPCO Stations	0.00	0.00	0.00	2.07	0.00	-2.07	5.45	15.07	9.62	7.55
ONGC PALATANA	0.00	0.00	0.00	27.42	0.00	-27.42	0.00	0.00	0.00	-27.42

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 UI

Figure 7: Bilateral Contracts executed by Traders in December, 2014

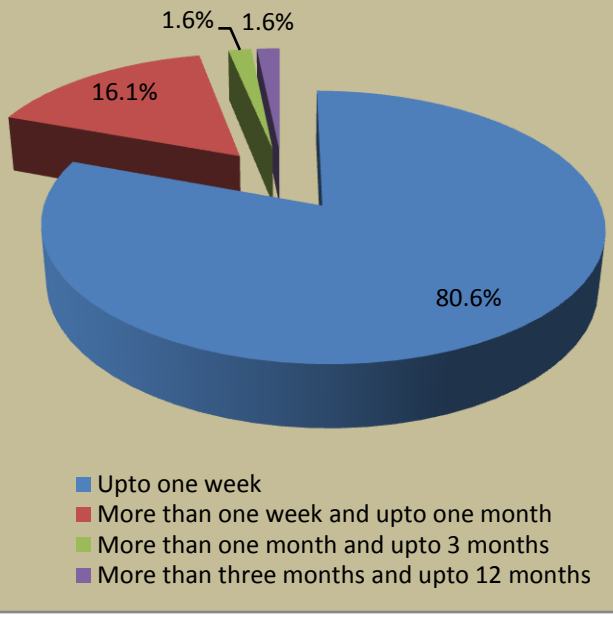


Figure-8: Forward Curve based on Prices of Bilateral Contracts

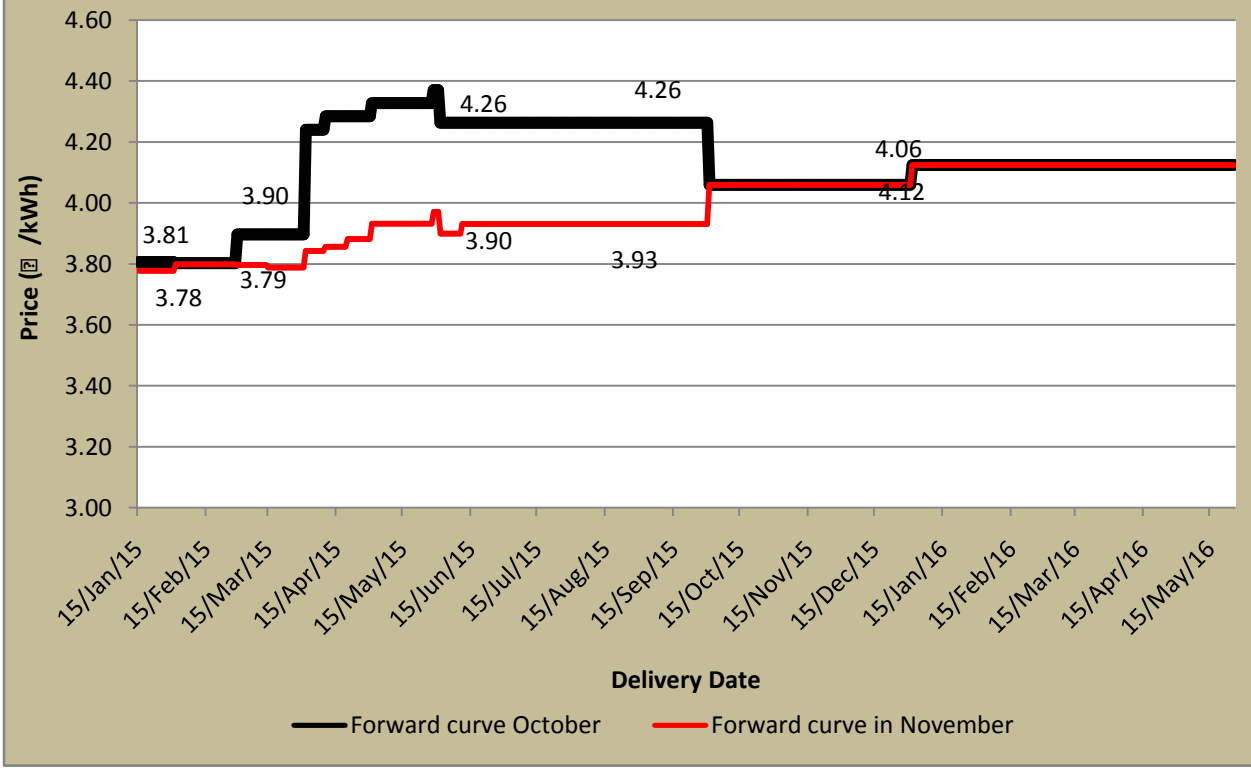


Table-20 : VOLUME AND PRICE OF RENEWABLE ENERGY CERTIFICATES (RECs) TRANSACTED THROUGH POWER EXCHANGES, NOVEMBER 2014					
Sr.No.	**Details of REC Transactions**	**IEX**		**PXIL**	
		Solar	**Non-Solar**	**Solar**	**Non Solar**
A	Volume of Buy Bid	245	93100	904	102913
B	Volume of Sell Bid	241063	4946763	2,71,209	55,77,324
C	Ratio of Buy Bid to Sell Bid Volume	0.001	0.019	0.003	0.018
D	Market Clearing Volume (MWh)	245	93100	904	102913
E	Market Clearing Price (₹/MWh)	9300	1500	9300	1500

Source: IEX and PXIL

Note 1: 1 REC = 1 MWh

Note 2:

Forbearance and Floor Price w.e.f 1st April 2012		
Type of REC	*Floor Price (₹/MWh)*	*Forbearance Price (₹/MWh)*
Solar	*9300.00*	*13400.00*
Non-Solar	*1500.00*	*3300.00*