

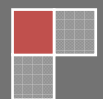


# Monthly Report on Short-term Transactions of Electricity in India

February, 2012



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## Abbreviations

<b>Abbreviation</b>	<b>Expanded Version</b>
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 Ltd
DCPP	Donga Mahua Captive Power Plant
DVC	Damodar Valley Corporation
IEX	Indian Energy Exchange Limited
JINDAL POWER	Jindal Power Limited
KARCHAM WANGTOO	Jaypee Karcham Hydro Corporation Limited
LANKO_AMK	Lanco Amarkantak Power Private Limited
LANKO_KONDAPALLY	Lanco Kondapalli Power Limited
MUs	Million Units
NEW Grid	North, East, North-East and Western Regional Grid
NLDC	National Load Despatch Centre
NSPCL	NTPC - SAIL Power Company Private Limited
PX	Power Exchange
PXIL	Power Exchange India Limited
RGPPL	Ratnagiri Gas and Power Private Limited
RLDC	Regional Load Despatch Centre
RTC	Round - the- Clock
SIMHAPURI	Simhapuri Energy Private Limited
SHREE CEMENT	Shree Cement Limited
SR Grid	Southern Regional Grid
STERLITE	Sterlite Energy Limited
UI	Unscheduled Interchange
UT	Union Territory

## **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 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; and (iii) to disclose/disseminate all relevant market information. The analysis of the report for the month of February 2012 is as under:

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

During the month of February 2012, total electricity generation excluding generation from renewable and captive power plants in India was 70999.60 MUs (Table-1).

Of the total electricity generation, 6441.56 MUs (9.07%) were transacted through short-term, comprising of 3206.00 MUs (4.52%) through Bilateral (through traders and term-ahead contracts on Power Exchanges and directly between distribution companies), followed by 2213.87 MUs (3.12%) through UI and 1021.69 MUs (1.44%) through day ahead collective transactions on Power Exchanges (IEX and PXIL) (Table-1 & Chart-2).

Of the total short-term transactions, Bilateral constitute 49.77% (30.53% through traders and term-ahead contracts on Power Exchanges and 19.24% directly between distribution companies) followed by 34.37% through UI and 15.86% through day ahead collective transactions on Power Exchanges (Table-1& Chart-1). Daily volume of short-term transactions is shown in Chart-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 & Chart-4. The trading licensees are undertaking 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 are 40 trading licensees as on 29.02.2012, of which only 16 have engaged in trading during

February 2012. Top 5 trading licenses had a share of 77.97% in the total volume traded by all the licensees.

Herfindahl-Hirschman Index (HHI) has been used for measuring the competition among the trading licensees. Increases in the HHI generally indicate a decrease in competition and an increase of market power, whereas decreases indicate the opposite. A HHI between 0.15 to 0.25 indicates moderate concentration. The HHI computed for volume of electricity traded by trading licensees was 0.1655 for the month of February 2012, which indicates moderate concentration of market power (Table-2).

The volume of electricity transacted through IEX and PXIL in the day ahead market was 970.07 MUs and 51.62 MUs respectively. The volume of total Buy bids and Sale bids was 2346.51 MUs and 1669.86 MUs respectively in IEX and 349.07 MUs and 245.20 MUs respectively in PXIL. The gap between the volume of buy bids and sale bids placed through power exchanges shows that there was more demand in IEX (1.41 times) and in PXIL (1.42 times) when compared with the supply offered through these exchanges.

The volume of electricity transacted in term-ahead market through weekly contracts of power exchanges was 3.63 MU in IEX (Table-6) and 0.45 MU in PXIL (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 ₹4.45/kWh. The weighted average sale price also computed for the transactions during Round the clock (RTC), Peak and Off-Peak periods separately and the sale price was ₹4.41/kWh, ₹5.93/kWh and ₹4.70/kWh respectively. Minimum and Maximum sale price was ₹2.96/kWh and ₹7.07/kWh respectively (Table-3 & 4).

**(ii) Price of electricity transacted Through Power Exchange:** The Minimum, Maximum and Weighted Average Price have been computed for the volume transacted through IEX and PXIL separately. The Minimum, Maximum and Weighted Average Price were ₹1.30/kWh, ₹20.00/kWh and ₹3.34/kWh respectively in IEX and ₹1.60/kWh, ₹15.00/kWh and ₹3.50/kWh respectively in PXIL (Table-5).

The weighted average prices of electricity transacted in term-ahead market through the weekly contracts were ₹4.92/kWh and ₹4.25/kWh in IEX (Table 6) and PXIL (Table 7) respectively.

**(iii) Price of electricity transacted Through UI:** All-India UI price has been computed for NEW Grid and SR Grid separately. The average UI price was ₹3.17/kWh in the NEW Grid and ₹5.09/kWh in the SR Grid. Minimum and Maximum price of UI was ₹0.00/kWh and ₹12.22/kWh respectively in the New Grid and ₹0.00/kWh and ₹17.46/kWh respectively in the SR Grid (Table-8).

The price of electricity transacted through trading licensees, power exchanges and UI and its comparison is shown in Chart-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 selling 50.18% of the volume are Gujarat, Jindal Power Ltd, Chattisgarh, Lanco Amarkantak Power Private Ltd and Delhi. Top 5 regional entities purchasing 47.99% of the volume are Maharashtra, Rajasthan, Uttarakhand, Himachal Pradesh and Uttar Pradesh (Table-9 & 10).

Of the total Power Exchange transactions, top 5 regional entities selling 69.77% of the volume are Gujarat, Chattisgarh, Delhi, Maharashtra and Jaypee Karcham Hydro Corporation Ltd. Top 5 regional entities purchasing 80.76% of the volume are Punjab, Rajasthan, Gujarat, Kerala and Maharashtra (Table-11 & 12).

Of the total UI transactions, top 5 regional entities under drawing 57.99% of the volume are Gujarat, Delhi, Maharashtra, West Bengal and Damodar Valley Corporation. Top 5 regional entities overdrawing 56.21% of the volume are Haryana, Rajasthan, Uttar Pradesh, Madhya Pradesh and Tamil Nadu (Table-13 & 14).

Regional entity-wise total volume of net short-term transactions of electricity i.e. volume of net transactions through bilateral, power exchange and UI is shown in Table-15. Top 5 regional entities selling electricity are Gujarat, Delhi, Chattisgarh, Jindal Power Ltd, and West Bengal. Top 5 regional entities purchasing electricity are Rajasthan, Uttar Pradesh, Haryana, Maharashtra and Madhya Pradesh.

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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.

#### **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 February 2012, 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 of 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 due to congestion was about 38% and 256% of the actual cleared volume in IEX and PXIL, respectively. Although the congestion occurred in power exchanges, in percentage of time terms it was 99.57 % in IEX and 100.00% in PXIL respectively.

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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.



## **V: Inferences:**

- The percentage of short-term transactions of electricity to total electricity generation was 9.07%.
- Of the total short-term transactions of electricity, 49.77% transacted through bilateral (through traders and term ahead contracts on power exchanges and directly by distribution companies) followed by 34.37% through UI and 15.86% through Power Exchanges.
- Top 5 trading licenses are having share of 77.97% in the total volume traded by all the trading licensees.
- The Herfindahl Hirschman Index computed for volume of electricity traded by trading licensees was 0.1655 indicates moderate concentration of market power.
- The price of electricity transacted through Trading Licensees (₹4.45/kWh) was higher when compared with the price of electricity transacted through Power Exchanges (₹3.34/kWh in IEX and ₹3.50/kWh in PXIL).
- The price of electricity transacted through UI was ₹3.17/kWh in the NEW Grid and ₹5.09/kWh in the SR Grid.
- The gap between the volume of sale bids and buy bids placed through power exchanges shows that there was more demand in IEX (1:1.41) and in PXIL (1:1.42) when compared with the supply offered through these exchanges.
- Top 5 regional entities selling electricity are Gujarat, Delhi, Chattisgarh, Jindal Power Ltd. and West Bengal. Top 5 regional entities purchasing electricity are Rajasthan, Uttar Pradesh, Haryana, Maharashtra and Madhya Pradesh.
- The volume of electricity that could not be cleared due to congestion was about 38% and 256% of the actual cleared volume in IEX and PXIL respectively. In percentage of time terms, congestion occurred 99.57% of the time (693 hrs in the month) in IEX and 100.00% of the time (696 hrs in the month) in PXIL.

<b>Format-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA (MUs), FEBRUARY 2012</b>						<b>Total Electricity Generation (MUs) as given at CEA Website*</b>
<b>Date</b>	<b>Bilateral</b>		<b>Power Exchange (Area Clearing Volume# of day ahead market)</b>		<b>Unscheduled Interchange (Over Drawl+Under Generation)</b>	
	<b>Through Traders and PXs**</b>	<b>Direct</b>	<b>IEX</b>	<b>PXI</b>		
1-Feb-12	68.05	45.21	30.14	0.76	71.27	2395.05
2-Feb-12	67.57	35.66	30.84	1.17	69.24	2395.60
3-Feb-12	68.31	39.77	28.63	1.55	63.79	2416.16
4-Feb-12	67.68	42.87	26.94	1.07	69.43	2416.89
5-Feb-12	71.03	42.87	33.06	1.68	69.74	2359.56
6-Feb-12	70.85	43.50	28.36	1.05	72.51	2398.93
7-Feb-12	69.49	43.73	34.84	3.14	74.57	2428.97
8-Feb-12	69.99	43.73	30.44	2.45	81.29	2430.83
9-Feb-12	69.96	44.44	33.30	2.32	78.64	2443.57
10-Feb-12	69.49	42.99	32.76	1.88	77.91	2428.35
11-Feb-12	66.91	44.44	33.59	1.58	81.43	2456.85
12-Feb-12	66.97	42.73	31.78	1.36	77.44	2397.36
13-Feb-12	66.93	42.11	31.27	1.01	72.07	2417.82
14-Feb-12	67.15	40.15	33.15	1.72	71.09	2462.53
15-Feb-12	63.91	40.36	32.77	1.98	73.48	2483.71
16-Feb-12	64.45	32.40	35.75	1.42	69.59	2455.07
17-Feb-12	64.25	37.09	34.49	1.40	70.05	2462.06
18-Feb-12	67.43	44.65	34.29	1.44	75.19	2476.99
19-Feb-12	67.60	44.48	38.17	2.13	71.37	2482.25
20-Feb-12	68.42	42.29	34.91	1.75	74.74	2481.00
21-Feb-12	67.96	42.25	33.46	1.45	74.54	2479.12
22-Feb-12	67.64	43.81	37.17	2.28	83.84	2505.54
23-Feb-12	70.15	45.10	36.62	2.53	81.37	2516.15
24-Feb-12	69.28	47.55	34.04	3.58	76.64	2485.70
25-Feb-12	70.11	47.55	32.22	2.04	91.27	2462.92
26-Feb-12	68.43	46.34	37.71	1.38	90.30	2430.25
27-Feb-12	65.08	40.80	35.61	1.67	82.84	2461.86
28-Feb-12	66.14	45.93	39.60	2.25	89.41	2477.82
29-Feb-12	65.54	44.43	34.17	1.57	78.85	2490.69
<b>Total</b>	<b>1966.74</b>	<b>1239.26</b>	<b>970.07</b>	<b>51.62</b>	<b>2213.87</b>	<b>70999.60</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.						

**Format-2: PRICE OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (₹/kWh), FEBRAURY 2012**

Market Segment	Day ahead market of IEX			Day ahead market of PXIL			Under Drawl/Over Drawl from the Grid (UI)					
Date	Minimum ACP	Maximum ACP	Weighted Average Price*	Minimum ACP	Maximum ACP	Weighted Average Price*	NEW Grid			SR Grid		
							Minimum Price	Maximum Price	Average Price**	Minimum Price	Maximum Price	Average Price**
1-Feb-12	1.30	20.00	3.25	1.79	15.00	3.25	1.24	12.22	3.80	1.55	12.22	5.01
2-Feb-12	2.06	15.01	3.73	1.75	10.01	3.49	0.78	12.22	3.90	1.55	12.22	4.27
3-Feb-12	1.94	15.01	3.53	2.00	10.50	3.26	1.40	12.22	3.80	0.16	12.22	4.86
4-Feb-12	1.77	15.51	3.39	1.70	10.01	3.42	1.24	7.79	3.47	2.17	12.22	5.36
5-Feb-12	1.77	16.01	3.20	1.77	12.01	3.17	0.78	5.91	2.96	0.78	6.85	4.16
6-Feb-12	1.77	16.51	3.57	2.50	12.01	3.96	0.47	8.26	3.58	2.02	12.22	5.49
7-Feb-12	1.99	16.51	3.73	2.10	12.01	3.75	1.24	12.22	3.82	2.64	12.22	5.95
8-Feb-12	2.10	14.51	3.80	1.60	8.01	3.75	0.93	12.22	3.53	2.02	12.22	5.68
9-Feb-12	2.10	14.51	3.75	2.10	9.00	3.78	0.62	12.22	3.66	2.02	12.22	5.69
10-Feb-12	1.99	14.01	3.63	1.70	10.01	3.61	0.47	12.22	3.55	2.48	12.22	6.25
11-Feb-12	1.77	14.01	3.53	1.70	6.51	3.51	0.47	12.22	3.14	2.33	12.22	5.82
12-Feb-12	1.77	14.00	2.86	2.01	8.50	3.24	0.00	6.38	2.35	0.00	7.79	4.54
13-Feb-12	1.77	15.01	2.97	2.01	10.01	3.36	0.00	5.44	2.42	1.55	12.22	4.96
14-Feb-12	1.77	15.01	3.04	1.80	11.00	3.24	0.47	7.32	3.18	1.24	12.22	5.29
15-Feb-12	1.75	15.01	3.00	1.70	9.00	3.16	0.62	6.85	2.78	2.02	12.22	5.96
16-Feb-12	1.77	15.01	3.10	1.70	9.01	3.36	0.00	7.32	2.93	2.48	17.46	6.07
17-Feb-12	1.79	15.01	3.07	2.00	11.00	3.15	0.31	12.22	3.23	1.86	12.22	5.79
18-Feb-12	1.77	15.51	2.96	1.70	12.01	2.99	0.00	6.38	2.99	1.40	12.22	5.33
19-Feb-12	1.74	15.51	3.08	2.01	12.01	3.41	0.00	6.38	2.65	0.62	12.22	4.52
20-Feb-12	1.77	15.51	3.18	2.01	9.01	3.45	0.00	12.22	2.82	0.47	8.26	4.49
21-Feb-12	1.70	15.51	3.20	2.06	9.01	3.51	0.78	5.91	2.95	0.47	8.26	4.46
22-Feb-12	1.99	15.51	3.21	2.01	9.01	3.50	0.31	6.85	2.95	1.55	7.79	4.69
23-Feb-12	1.89	15.41	3.34	2.00	8.01	3.44	0.00	12.22	3.42	1.55	8.26	4.49
24-Feb-12	2.65	15.41	3.75	2.50	8.01	3.80	1.24	5.44	3.12	0.62	12.22	5.10
25-Feb-12	2.59	15.41	3.65	2.20	8.01	3.61	0.16	5.44	2.64	0.00	7.32	4.04
26-Feb-12	2.00	12.01	3.29	2.25	12.10	3.59	0.00	4.50	2.30	0.00	7.79	3.39
27-Feb-12	2.09	15.01	3.42	2.40	5.50	3.48	0.00	12.22	3.59	0.16	8.26	4.44
28-Feb-12	2.09	14.51	3.36	2.25	10.01	3.55	0.00	12.22	3.04	1.55	8.26	5.34
29-Feb-12	2.09	15.00	3.53	2.50	10.01	3.87	1.09	6.38	3.35	2.48	17.46	6.18
	<b>1.30#</b>	<b>20.00#</b>	<b>3.34</b>	<b>1.60#</b>	<b>15.00#</b>	<b>3.50</b>	<b>0.00#</b>	<b>12.22#</b>	<b>3.17</b>	<b>0.00#</b>	<b>17.46#</b>	<b>5.09</b>

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

**Format-3: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY\*-WISE) (MUs), FEBRUARY 2012**

Name of the State/UT/Other Regional Entity	Through Bilateral			Through Power Exchange			Through UI with Regional Grid			Total Net***
	Sale	Purchase	Net**	Sale	Purchase	Net**	Export (Under Drawl)	Import (Over Drawl)	Net**	
Punjab	199.75	0.00	-199.75	24.36	321.48	297.12	66.33	90.83	24.50	121.87
Haryana	178.73	89.29	-89.44	0.00	57.75	57.75	3.72	438.03	434.30	402.61
Rajasthan	110.75	255.77	145.02	35.95	176.03	140.08	14.11	255.21	241.09	526.19
Delhi	279.59	128.03	-151.56	147.07	1.62	-145.45	262.14	2.13	-260.01	-557.03
Uttar Pradesh	3.90	235.56	231.66	0.00	0.00	0.00	33.30	217.09	183.78	415.44
Uttarakhand	0.00	245.57	245.57	0.00	0.29	0.29	11.56	50.10	38.54	284.40
Himachal Pradesh	0.00	236.15	236.15	9.48	0.00	-9.48	37.04	36.88	-0.17	226.50
J & K	32.95	198.55	165.60	0.14	0.00	-0.14	8.21	115.63	107.43	272.89
UT Chandigarh	9.58	0.00	-9.58	0.00	0.00	0.00	3.79	10.21	6.41	-3.17
MP	0.00	187.72	187.72	6.12	7.75	1.63	43.68	141.13	97.45	286.79
Maharashtra	2.42	565.08	562.67	142.44	77.27	-65.17	176.97	64.30	-112.67	384.83
Gujarat	356.77	36.91	-319.86	170.64	155.48	-15.15	313.25	18.01	-295.24	-630.25
Chattisgarh	345.35	69.39	-275.96	150.96	0.00	-150.96	42.07	28.61	-13.46	-440.38
Daman and Diu	0.00	0.00	0.00	0.00	0.00	0.00	20.92	1.38	-19.54	-19.54
Dadra & Nagar Haveli	0.00	48.72	48.72	0.00	0.00	0.00	34.69	0.87	-33.82	14.90
Andhra Pradesh	3.86	133.04	129.19	11.25	29.08	17.83	32.37	24.55	-7.82	139.19
Karnataka	22.39	12.15	-10.23	0.00	10.65	10.65	15.75	34.72	18.97	19.39
Kerala	0.00	25.17	25.17	0.00	94.90	94.90	2.29	63.97	61.69	181.76
Tamilnadu	0.00	121.75	121.75	0.00	57.18	57.18	12.70	117.32	104.62	283.55
Pondicherry	0.00	0.00	0.00	0.00	0.00	0.00	70.93	0.00	-70.93	-70.93
West Bengal	240.62	102.56	-138.05	53.03	0.51	-52.52	175.48	15.92	-159.56	-350.14
Orissa	0.00	0.00	0.00	0.00	11.09	11.09	12.90	98.82	85.93	97.02
Bihar	0.00	209.77	209.77	0.00	0.00	0.00	36.31	6.37	-29.94	179.83
Jharkhand	0.00	69.60	69.60	0.00	0.00	0.00	10.35	40.84	30.49	100.09
Sikkim	0.00	1.42	1.42	11.66	0.00	-11.66	6.78	1.64	-5.14	-15.38
DVC	139.04	118.49	-20.55	1.51	0.00	-1.51	144.18	17.39	-126.79	-148.86
Arunachal Pradesh	0.00	0.00	0.00	0.00	4.32	4.32	0.22	18.55	18.34	22.66
Assam	0.00	77.15	77.15	12.96	12.87	-0.09	7.12	14.82	7.70	84.76
Manipur	0.00	0.00	0.00	0.00	0.00	0.00	2.34	5.90	3.56	3.56
Meghalaya	0.00	11.09	11.09	1.86	3.42	1.56	0.38	27.13	26.75	39.40
Mizoram	0.00	0.21	0.21	0.80	0.00	-0.80	0.11	8.45	8.34	7.75
Nagaland	0.00	0.00	0.00	0.00	0.00	0.00	0.05	16.96	16.91	16.91
Tripura	3.13	0.00	-3.13	0.17	0.00	-0.17	5.74	1.49	-4.25	-7.55
GOA	0.00	22.71	22.71	0.00	0.00	0.00	42.05	4.87	-37.18	-14.47
JINDAL POWER	351.33	0.00	-351.33	54.56	0.00	-54.56	11.11	10.38	-0.73	-406.63
LANCO_AMK	303.60	0.00	-303.60	0.00	0.00	0.00	11.69	4.00	-7.69	-311.28
LANCO_KONDAPALLY	112.14	0.00	-112.14	2.39	0.00	-2.39	1.87	5.17	3.30	-111.23
STERLITE	258.84	0.00	-258.84	7.40	0.00	-7.40	12.06	22.67	10.60	-255.63
AD HYDRO	0.83	0.00	-0.83	6.07	0.00	-6.07	0.21	0.39	0.18	-6.71
KARCHAM WANGTOO	40.23	0.00	-40.23	55.04	0.00	-55.04	4.43	1.93	-2.50	-97.76
SHREE CEMENT	55.95	0.00	-55.95	4.92	0.00	-4.89	1.35	1.12	-0.23	-61.07
NSPCL	0.00	0.00	0.00	0.00	0.00	0.00	2.65	1.15	-1.50	-1.50
MAITHON POWER LTD	209.65	0.00	-209.65	6.92	0.00	-6.92	4.30	15.64	11.33	-205.23
ACBIL	0.00	0.00	0.00	0.00	0.00	0.00	12.07	2.31	-9.76	-9.76
BALCO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RGPPL(Dabhol)	0.00	0.00	0.00	0.00	0.00	0.00	7.94	1.55	-6.39	-6.39
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	127.37	6.11	-121.26	-121.26
DCPP	0.00	0.00	0.00	37.02	0.00	-37.02	1.79	16.78	14.99	-22.03
SIMHAPURI	0.00	3.16	3.16	0.00	0.00	0.00	0.00	0.00	0.00	3.16

Source: NLDC

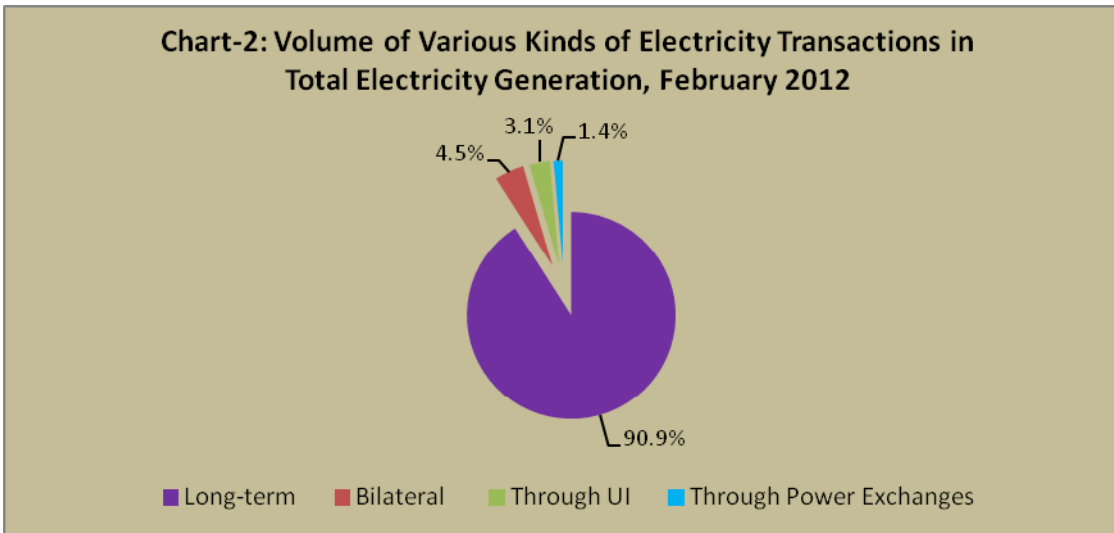
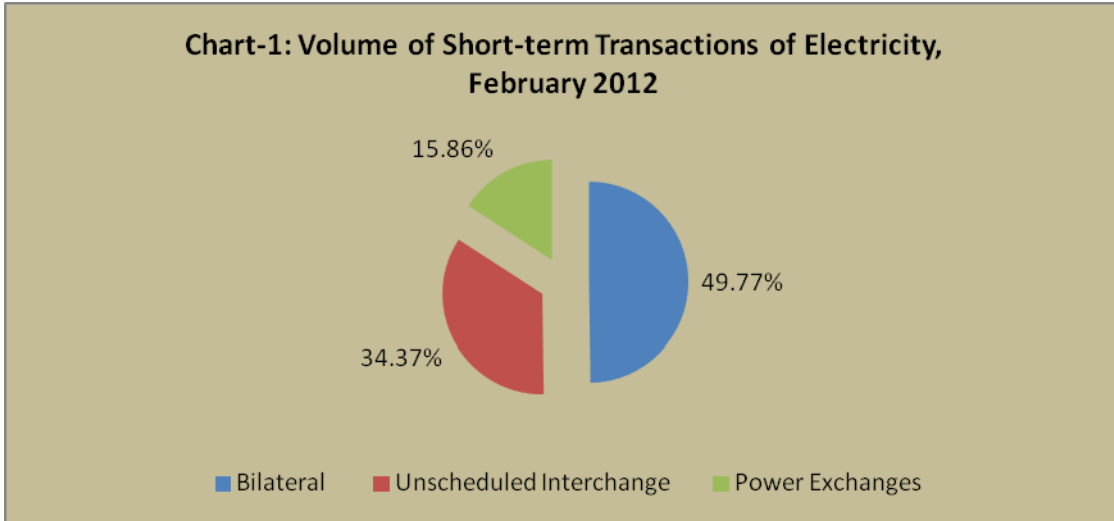
\* in case of a state, the entities which are "selling" also include generators connected to state grid and the entities which are "buying" also include open access consumers.

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

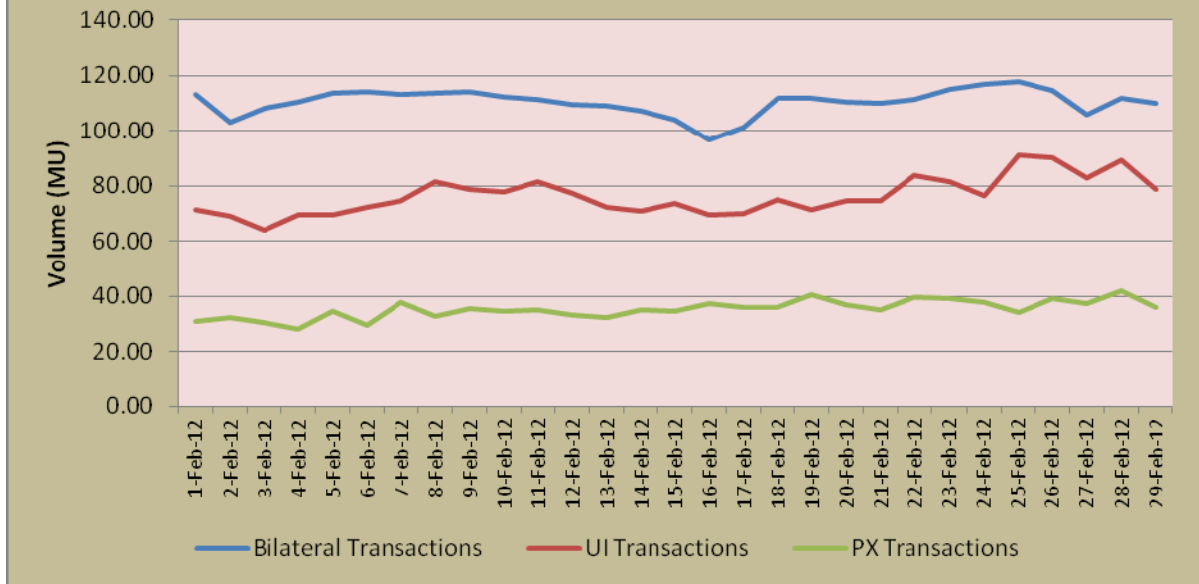
\*\*\* Total net includes net of transactions through bilateral, power exchange and UI

Table-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (ALL INDIA), FEBRUARY 2012				
Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	3206.00	49.77%	4.52%
	(i) Through Traders and PXs	1966.74	30.53%	2.77%
	(ii) Direct	1239.26	19.24%	1.75%
2	Through Power Exchanges	1021.69	15.86%	1.44%
	IEX	970.07	15.06%	1.37%
	PXIL	51.62	0.80%	0.07%
3	Through UI	2213.87	34.37%	3.12%
	<b>Total</b>	<b>6441.56</b>	<b>100.00%</b>	<b>9.07%</b>
	<b>Total Generation</b>	<b>70999.60</b>	–	–

Source: NLDC



**Chart-3: Volume of Short-term Transactions of Electricity, February 2012 (Day-wise)**



<b>Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, FEBRUARY 2012</b>			
<b>Sr.No</b>	<b>Name of the Trading Licensee</b>	<b>% Share in total Volume transacted by Trading Licensees</b>	<b>Herfindahl-Hirschman Index</b>
1	PTC India Ltd	30.21%	0.0913
2	NTPC Vidyut Vyapar Nigam Ltd	18.82%	0.0354
3	Knowledge Infrastructure Systems (P) Ltd	10.07%	0.0101
4	National Energy Trading & Services Ltd	10.04%	0.0101
5	Reliance Energy Trading (P) Ltd	8.82%	0.0078
6	Tata Power Trading Company (P) Ltd	8.46%	0.0072
7	Shree Cement Ltd.	4.28%	0.0018
8	Instinct Infra & Power Ltd.	2.60%	0.0007
9	Adani Enterprises Ltd	2.34%	0.0005
10	Jaiprakash Associate Ltd.	2.06%	0.0004
11	Global Energy (P) Ltd.	0.87%	0.0001
12	GMR Energy Trading Ltd	0.59%	0.0000
13	JSW Power Trading Company Ltd	0.49%	0.0000
14	RPG Power Trading Company Ltd.	0.30%	0.0000
15	Essar Electric Power Development Corp. Ltd.	0.03%	0.0000
16	Jindal Power Trading Company Ltd.	0.01%	0.0000
	<b>TOTAL</b>	<b>100.00%</b>	<b>0.1655</b>
	<b>Top 5 trading licensees</b>	<b>77.97%</b>	
<i>Note: Volume of electricity transacted by the trading licensees includes bilateral transactions (inter-state) and the transactions undertaken through power exchanges.</i>			
<i>Source: Information submitted by trading licensees</i>			

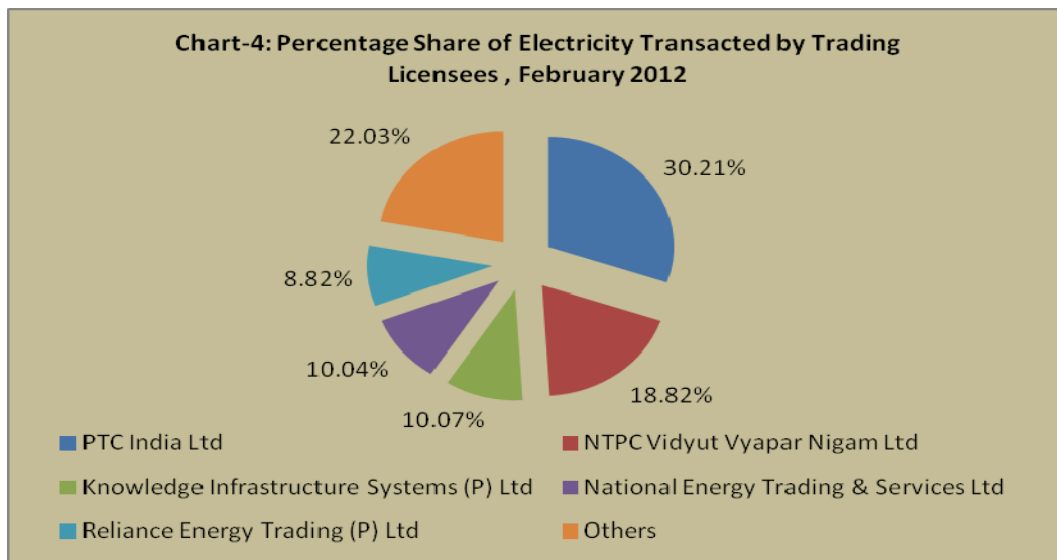


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, FEBRUARY 2012		
Sr.No		Sale Price of Traders (₹/kWh)
1	Minimum	2.96
2	Maximum	7.07
3	Weighted Average	4.45

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), FEBRUARY 2012		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	4.41
2	PEAK	5.93
3	OFF PEAK	4.70

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, FEBRUARY 2012			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	1.30	1.60
2	Maximum	20.00	15.00
3	Weighted Average	3.34	3.50

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, FEBRUARY 2012			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
	Intra-Day Contracts	2.30	4.46
	Daily Contracts	7.89	4.50
	Weekly Contracts	3.63	4.92
	<b>Total</b>	<b>13.83</b>	<b>4.60</b>

Source: IEX

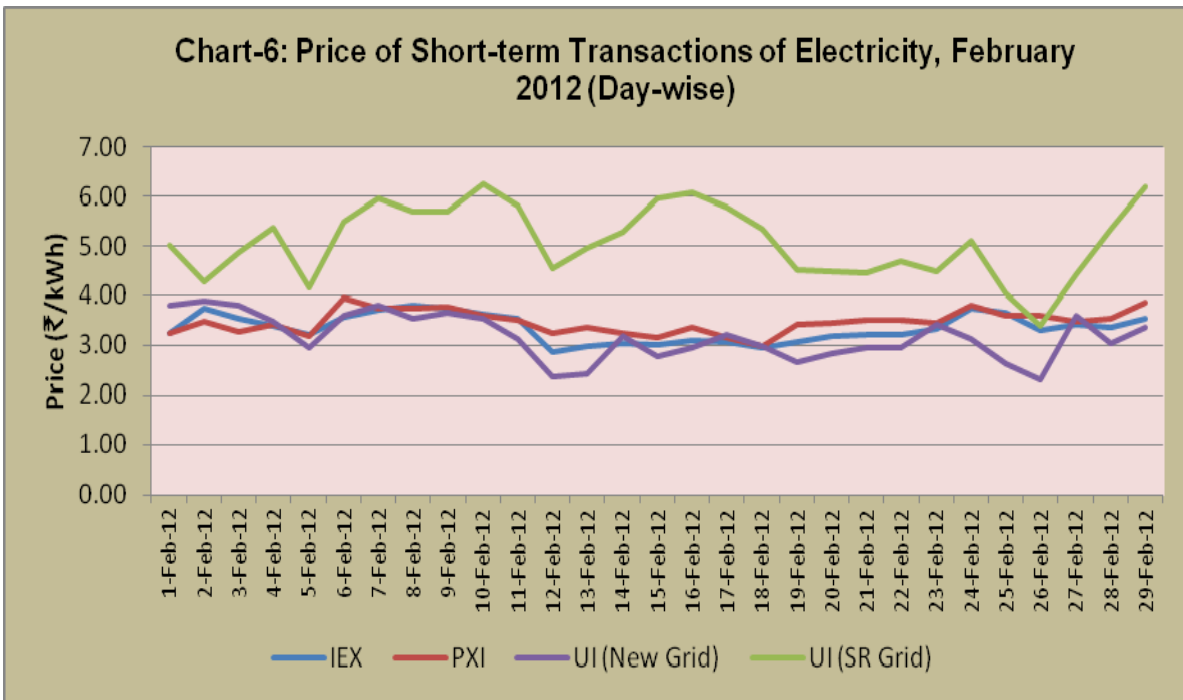
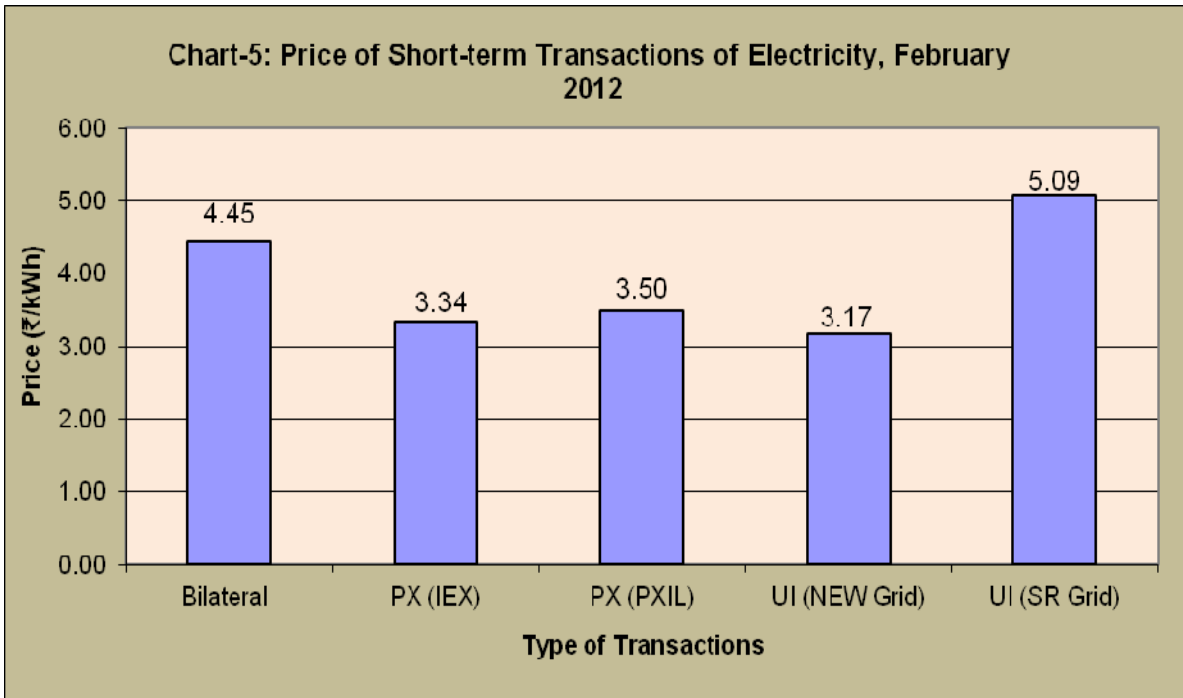
Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, FEBRUARY 2012			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Weekly Contracts	0.45	4.25
	<b>Total</b>	<b>0.45</b>	<b>4.25</b>

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH UI, FEBRUARY 2012			
Sr.No		Price in NEW Grid (₹/kWh)	Price in SR Grid (₹/kWh)
1	Minimum	0.00	0.00
2	Maximum	12.22	17.46
3	Average	3.17	5.09

Source: NLDC





<b>Table-9: VOLUME OF ELECTRICITY SALE THROUGH BILATERAL, FEBRUARY 2012</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Sale (MUs)</b>	<b>% of Volume</b>
Gujarat	356.77	10.94%
JINDAL POWER	351.33	10.77%
Chattisgarh	345.35	10.59%
LANKO_AMK	303.60	9.31%
Delhi	279.59	8.57%
STERLITE	258.84	7.94%
West Bengal	240.62	7.38%
MAITHON POWER LTD	209.65	6.43%
Punjab	199.75	6.12%
Haryana	178.73	5.48%
DVC	139.04	4.26%
LANKO_KONDAPALLY	112.14	3.44%
Rajasthan	110.75	3.40%
SHREE CEMENT	55.95	1.72%
KARCHAM WANGTOO	40.23	1.23%
J & K	32.95	1.01%
Karnataka	22.39	0.69%
UT Chandigarh	9.58	0.29%
Uttar Pradesh	3.90	0.12%
Andhra Pradesh	3.86	0.12%
Tripura	3.13	0.10%
Maharashtra	2.42	0.07%
AD HYDRO	0.83	0.03%
<b>Total</b>	<b>3261.38</b>	<b>100.00%</b>
<b>Volume of sale by top 5 States</b>	<b>1636.64</b>	<b>50.18%</b>

<b>Table-10: VOLUME OF ELECTRICITY PURCHASE THROUGH BILATERAL, FEBRUARY 2012</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Purchase (MUs)</b>	<b>% of Volume</b>
Maharashtra	565.08	17.63%
Rajasthan	255.77	7.98%
Uttarakhand	245.57	7.66%
Himachal Pradesh	236.15	7.37%
Uttar Pradesh	235.56	7.35%
Bihar	209.77	6.55%
J & K	198.55	6.20%
MP	187.72	5.86%
Andhra Pradesh	133.04	4.15%
Delhi	128.03	3.99%
Tamilnadu	121.75	3.80%
DVC	118.49	3.70%
West Bengal	102.56	3.20%
Haryana	89.29	2.79%
Assam	77.15	2.41%
Jharkhand	69.60	2.17%
Chattisgarh	69.39	2.17%
Dadra & Nagar Haveli	48.72	1.52%
Gujarat	36.91	1.15%
Kerala	25.17	0.79%
GOA	22.71	0.71%
Karnataka	12.15	0.38%
Meghalaya	11.09	0.35%
SIMHAPURI	3.16	0.10%
Sikkim	1.42	0.04%
Mizoram	0.21	0.01%
<b>Total</b>	<b>3205.02</b>	<b>100.00%</b>
<b>Volume of sale by top 5 States</b>	<b>1538.13</b>	<b>47.99%</b>

<b>Table-11: VOLUME OF ELECTRICITY SALE THROUGH POWER EXCHANGES, FEBRUARY 2012</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Sale (MUs)</b>	<b>% of Volume</b>
Gujarat	170.64	17.87%
Chattisgarh	150.96	15.81%
Delhi	147.07	15.40%
Maharashtra	142.44	14.92%
KARCHAM WANGTOO	55.04	5.76%
JINDAL POWER	54.56	5.71%
West Bengal	53.03	5.55%
DCPP	37.02	3.88%
Rajasthan	35.95	3.77%
Punjab	24.36	2.55%
Assam	12.96	1.36%
Sikkim	11.66	1.22%
Andhra Pradesh	11.25	1.18%
Himachal Pradesh	9.48	0.99%
STERLITE	7.40	0.77%
MAITHON POWER LTD	6.92	0.72%
MP	6.12	0.64%
AD HYDRO	6.07	0.64%
SHREE CEMENT	4.92	0.52%
LANKO_KONDAPALLY	2.39	0.25%
Meghalaya	1.86	0.20%
DVC	1.51	0.16%
Mizoram	0.80	0.08%
Tripura	0.17	0.02%
J & K	0.14	0.01%
<b>Total</b>	<b>954.72</b>	<b>100.00%</b>
<b>Volume of sale by top 5 States</b>	<b>666.15</b>	<b>69.77%</b>

<b>Table-12: VOLUME OF ELECTRICITY PURCHASE THROUGH POWER EXCHANGES, FEBRUARY 2012</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Purchase (MUs)</b>	<b>% of Volume</b>
Punjab	321.48	31.47%
Rajasthan	176.03	17.23%
Gujarat	155.48	15.22%
Kerala	94.90	9.29%
Maharashtra	77.27	7.56%
Haryana	57.75	5.65%
Tamilnadu	57.18	5.60%
Andhra Pradesh	29.08	2.85%
Assam	12.87	1.26%
Orissa	11.09	1.09%
Karnataka	10.65	1.04%
MP	7.75	0.76%
Arunachal Pradesh	4.32	0.42%
Meghalaya	3.42	0.33%
Delhi	1.62	0.16%
West Bengal	0.51	0.05%
Uttarakhand	0.29	0.03%
<b>Total</b>	<b>1021.69</b>	<b>100.00%</b>
<b>Volume of purchase by top 5 States</b>	<b>825.16</b>	<b>80.76%</b>

<b>Table-13: VOLUME OF ELECTRICITY EXPORT THROUGH UI, FEBRUARY 2012</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Export (MUs)</b>	<b>% of Volume</b>
Gujarat	313.25	16.94%
Delhi	262.14	14.18%
Maharashtra	176.97	9.57%
West Bengal	175.48	9.49%
DVC	144.18	7.80%
CGPL	127.37	6.89%
Pondicherry	70.93	3.84%
Punjab	66.33	3.59%
MP	43.68	2.36%
Chattisgarh	42.07	2.28%
GOA	42.05	2.27%
Himachal Pradesh	37.04	2.00%
Bihar	36.31	1.96%
Dadra & Nagar Haveli	34.69	1.88%
Uttar Pradesh	33.30	1.80%
Andhra Pradesh	32.37	1.75%
Daman and Diu	20.92	1.13%
Karnataka	15.75	0.85%
Rajasthan	14.11	0.76%
Orissa	12.90	0.70%
Tamilnadu	12.70	0.69%
ACBIL	12.07	0.65%
STERLITE	12.06	0.65%
LANKO_AMK	11.69	0.63%
Uttarakhand	11.56	0.63%
JINDAL POWER	11.11	0.60%
Jharkhand	10.35	0.56%
J & K	8.21	0.44%
RGPPPL(Dabhol)	7.94	0.43%
Assam	7.12	0.39%
Sikkim	6.78	0.37%
Tripura	5.74	0.31%
KARCHAM WANGTOO	4.43	0.24%
MAITHON POWER LTD	4.30	0.23%
UT Chandigarh	3.79	0.21%
Haryana	3.72	0.20%
NSPCL	2.65	0.14%
Manipur	2.34	0.13%
Kerala	2.29	0.12%
LANKO_KONDAPALLY	1.87	0.10%
DCPP	1.79	0.10%
SHREE CEMENT	1.35	0.07%
Meghalaya	0.38	0.02%
Arunachal Pradesh	0.22	0.01%
AD HYDRO	0.21	0.01%
Mizoram	0.11	0.01%
Nagaland	0.05	0.00%
<b>Total</b>	<b>1848.69</b>	<b>100.00%</b>
<b>Volume of Export by top 5 States</b>	<b>1072.02</b>	<b>57.99%</b>

<b>Table-14: VOLUME OF ELECTRICITY IMPORT THROUGH UI, FEBRUARY 2012</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Import (MUs)</b>	<b>% of Volume</b>
Haryana	438.03	21.07%
Rajasthan	255.21	12.27%
Uttar Pradesh	217.09	10.44%
MP	141.13	6.79%
Tamilnadu	117.32	5.64%
J & K	115.63	5.56%
Orissa	98.82	4.75%
Punjab	90.83	4.37%
Maharashtra	64.30	3.09%
Kerala	63.97	3.08%
Uttarakhand	50.10	2.41%
Jharkhand	40.84	1.96%
Himachal Pradesh	36.88	1.77%
Karnataka	34.72	1.67%
Chattisgarh	28.61	1.38%
Meghalaya	27.13	1.30%
Andhra Pradesh	24.55	1.18%
STERLITE	22.67	1.09%
Arunachal Pradesh	18.55	0.89%
Gujarat	18.01	0.87%
DVC	17.39	0.84%
Nagaland	16.96	0.82%
DCPP	16.78	0.81%
West Bengal	15.92	0.77%
MAITHON POWER LTD	15.64	0.75%
Assam	14.82	0.71%
JINDAL POWER	10.38	0.50%
UT Chandigarh	10.21	0.49%
Mizoram	8.45	0.41%
Bihar	6.37	0.31%
CGPL	6.11	0.29%
Manipur	5.90	0.28%
LANKO_KONDAPALLY	5.17	0.25%
GOA	4.87	0.23%
LANKO_AMK	4.00	0.19%
ACBIL	2.31	0.11%
Delhi	2.13	0.10%
KARCHAM WANGTOO	1.93	0.09%
Sikkim	1.64	0.08%
RGPPL(Dabhol)	1.55	0.07%
Tripura	1.49	0.07%
Daman and Diu	1.38	0.07%
NSPCL	1.15	0.06%
SHREE CEMENT	1.12	0.05%
Dadra & Nagar Haveli	0.87	0.04%
AD HYDRO	0.39	0.02%
<b>Total</b>	<b>2079.33</b>	<b>100.00%</b>
<b>Volume of Export by top 5 States</b>	<b>1168.76</b>	<b>56.21%</b>

**Table-15: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY  
(REGIONAL ENTITY-WISE), FEBRUARY 2012**

Sr.No	Name of the State/UT/Other Regional Entity	Total volume of net short-term transactions of electricity*
1	Rajasthan	526.19
2	Uttar Pradesh	415.44
3	Haryana	402.61
4	Maharashtra	384.83
5	MP	286.79
6	Uttarakhand	284.40
7	Tamilnadu	283.55
8	J & K	272.89
9	Himachal Pradesh	226.50
10	Kerala	181.76
11	Bihar	179.83
12	Andhra Pradesh	139.19
13	Punjab	121.87
14	Jharkhand	100.09
15	Orissa	97.02
16	Assam	84.76
17	Meghalaya	39.40
18	Arunachal Pradesh	22.66
19	Karnataka	19.39
20	Nagaland	16.91
21	Dadra & Nagar Haveli	14.90
22	Mizoram	7.75
23	Manipur	3.56
24	SIMHAPURI	3.16
25	BALCO	0.00
26	NSPCL	-1.50
27	UT Chandigarh	-3.17
28	RGPPL(Dabhol)	-6.39
29	AD HYDRO	-6.71
30	Tripura	-7.55
31	ACBIL	-9.76
32	GOA	-14.47
33	Sikkim	-15.38
34	Daman and Diu	-19.54
35	DCPP	-22.03
36	SHREE CEMENT	-61.07
37	Pondicherry	-70.93
38	KARCHAM WANGTOO	-97.76
39	LANKO_KONDAPALLY	-111.23
40	CGPL	-121.26
41	DVC	-148.86
42	MAITHON POWER LTD	-205.23
43	STERLITE	-255.63
44	LANKO_AMK	-311.28
45	West Bengal	-350.14
46	JINDAL POWER	-406.63
47	Chattisgarh	-440.38
48	Delhi	-557.03
49	Gujarat	-630.25

\* 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



<b>Table-16: DETAILS OF CONGESTION IN POWER EXCHANGES, FEBRUARY 2012</b>			
	<b>Details of Congestion</b>	<b>IEX</b>	<b>PXIL</b>
A	Unconstrained Cleared Volume* (MUs)	1334.30	183.94
B	Actual Cleared Volume and hence scheduled (MUs)	970.07	51.62
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	364.23	132.32
D	Volume of electricity that could not be cleared as % to Actual Cleared Volume	38%	256%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	99.57%	100.00%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	25%	25%
	6.00 - 12.00 hours	25%	25%
	12.00 - 18.00 hours	25%	25%
	18.00 - 24.00 hours	25%	25%
<i>* This power would have been scheduled had there been no congestion.</i>			
<i>Source: IEX &amp; PXIL</i>			