

# **MONTHLY REPORT ON SHORT-TERM TRANSACTIONS OF ELECTRICITY (January 2010)**

## **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. In this context, “short-term transactions of electricity” means 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 January 2010 is as under:

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

During the Month of January 2010, total electricity generation excluding generation from renewable and captive power plants in India was 64849.30 MUs (Table-1).

Of the total electricity generation, 6034.46 MUs (9.31%) were transacted through short-term, comprising of 2870.95 MUs (4.43%) through Bilateral (through traders and Power Exchanges and directly between distribution companies), followed by 2307.50 MUs (3.56%) through UI and 856.06 MUs (1.32%) through Power Exchanges (IEX and PXIL) (Table-1 & Chart-2).

Of the total short-term transactions, Bilateral constitute 47.58% (36.68% through traders and tem-ahead contracts on Power Exchanges and 10.90% direct between distribution companies) followed by 38.24% through UI and 14.19% through day ahead collective transactions over 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 38 trading licensees as on 31.1.2010, of which only 12 have engaged in trading during January 2010. Top 5 trading licenses had a share of 84.32% 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 above 0.18 indicates high concentration. The HHI computed for volume of electricity traded by trading licensees was 0.1784 shows moderate concentration/market power (Table-2).

The volume of electricity transacted through IEX and PXIL was 723.40 MUs and 132.65 MUs respectively. The volume of total Buy bids and Sale bids was 1254.13 MUs and 1300.50 MUs respectively in IEX and 223.78 MUs and 315.39 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 IEX (0.90 times) and in PXIL (0.71 times) when compared with the supply offered through these exchanges.

The volume of electricity transacted through IEX in the term-ahead contracts was 0.59 MU and the entire volume was in the 'day ahead contingency contracts' (Table-5A). There is no electricity transacted through PXIL in the term-ahead contracts.

## **II: Price of Short-term Transactions of Electricity**

(1) *Price of electricity transacted through Traders:* Weighted average sale price has been computed for the electricity transacted through traders and it was Rs.5.26. 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 Rs.5.34, Rs.5.01 and Rs.5.11 respectively. Minimum and Maximum sale price was Rs.1.84 and Rs.9.64 respectively (Table-3 & 4).

(2) *Price of electricity transacted Through Power Exchange:* The Minimum, Maximum and Weighted Average Price has been computed for the volume transacted through IEX and PXIL separately. The Minimum, Maximum and Weighted Average Price was Rs.0.10, Rs.6.75 and Rs.3.46 respectively in IEX and Rs.0.75, Rs.7.00 and Rs.3.33 respectively in PXIL (Table-5).

The weighted average price of electricity transacted through IEX in the term-ahead contracts i.e. in the 'day ahead contingency contracts' was Rs.3.46/KWh (Table-5A).

**(3) 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 Rs.3.84 in the NEW Grid and Rs.3.90 in the SR Grid. Minimum and Maximum price of UI was Rs.0.12 and Rs.10.29 respectively in the New Grid and Rs.0.12 and Rs.10.29 respectively in the SR Grid (Table-6).

The weighted average price/average 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 61.61% of the volume are West Bengal, Chattisgarh, Karnataka, Punjab and Jindal Power Ltd and top 5 regional entities purchasing 73.90% of the volume are Rajasthan, Tamil Nadu, Delhi, Jammu & Kashmir and Himachal Pradesh (Table-7 & 8).

Of the total Power Exchange transactions, top 5 regional entities selling 89.74% of the volume are Gujarat, Chattisgarh, Karnataka, Jindal Power Ltd and Delhi and top 5 regional entities purchasing 79.48% of the volume are Tamil Nadu, Maharashtra, Uttar Pradesh, Rajasthan and Kerala (Table-9 & 10).

Of the total UI transactions, top 5 regional entities underdrawing 47.08% of the volume are Gujarat, Damodar vally Corporation, Chattisgarh, Delhi and Jindal Power Ltd and top 5 regional entities overdrawing 59.44% of the volume are Haryana, Rajasthan, Uttar Pradesh, Punjab and Karnataka (Table-11 & 12).

Regional entity-wise total volume of net short-term transactions of electricity i.e. volume of net transactions through bilateral, power exchange and UI was shown in Table-13. Top 5 regional entities selling electricity are Gujarat, Chattisgarh, Jindal Power Ltd, West Bengal and Karnataka and top 5 regional entities purchasing electricity are Rajasthan, Tamil Nadu, Uttar Pradesh, Maharashtra and Jammu & Kashmir.

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

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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.*

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

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 Jan 2010, congestion occurred in both the power exchanges, the details of which are shown in Table-14. 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. The volume of electricity that could not be cleared due to congestion was about 11.5% of the actual cleared volume in IEX and about 8.6% of the actual cleared volume in PXIL.

In IEX congestion occurred in the Northern Region whereas in PXIL it occurred in Northern and Southern Regions. In IEX congestion occurred about 47% of the hourly time blocks whereas in PXIL it occurred about 21% of the hourly time blocks. Congestion occurred in most number of times during 6.00-12.00 hours of the day in both the exchanges.

#### **V: Inferences:**

- The percentage of short-term transactions of electricity to total electricity generation was 9.31%.
- Of the total short-term transactions of electricity, 47.58% transacted through bilateral (through traders and power exchanges and directly by distribution companies) followed by 38.24% through UI and 14.19% through Power Exchanges.

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<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.

- Top 5 trading licenses are having share of 84.32% in the total volume traded by all the trading licensees.
- The price of electricity transacted through Trading Licensees was relatively high (Rs.5.26/KWh) when compared with the price of electricity transacted through Power Exchanges (Rs.3.46/KWh in IEX and Rs.3.33/KWh in PXIL) and the price of electricity transacted through UI (Rs.3.84/KWh in NEW Grid and Rs.3.90/KWh in SR Grid).
- The Herfindahl Hirschman Index computed for volume of electricity traded by trading licensees was 0.1784 shows moderate concentration/market power.
- The gap between the volume of buy bids and sale bids placed through power exchanges shows that there was less demand in IEX (0.90 times) and in PXIL (0.71 times) when compared with the supply offered through the exchanges.
- Top 5 regional entities selling electricity are Gujarat, Chattisgarh, Jindal Power Ltd, West Bengal and Karnataka and top 5 regional entities purchasing electricity are Rajasthan, Tamil Nadu, Uttar Pradesh, Maharashtra and Jammu & Kashmir.
- In the month of Jan 2010, congestion occurred in both the power exchanges. In IEX congestion occurred in the Northern Region whereas in PXIL it occurred in Northern and Southern Regions. In IEX congestion occurred about 47% of the hourly time blocks whereas in PXIL it occurred about 21% of the hourly time blocks. Congestion occurred in most number of times during 6.00-12.00 hours of the day in both the exchanges.
- Volume of electricity that could not be cleared due to congestion was about 11.5% of the actual cleared volume in IEX and about 8.6% of the actual cleared volume in PXIL.

VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (ALL INDIA) (MUs)							Total Electricity Generation (MUs) as given at CEA Website*
Month: Jan 2010							
Date	Bilateral		Power Exchange (Market Clearing Volume of day ahead market)		Unscheduled Interchange (Over Drawl+Under Generation)		
	Through Traders and PXs**	Direct	IEX	PXI			
1-Jan-10	65.26	19.24	21.59	5.16	76.97	2095.42	
2-Jan-10	65.59	19.44	26.74	4.86	87.37	2063.83	
3-Jan-10	68.10	19.73	14.94	2.85	79.00	2009.86	
4-Jan-10	69.52	22.03	16.98	2.79	74.81	2088.50	
5-Jan-10	69.70	21.85	20.28	3.28	73.66	2128.89	
6-Jan-10	67.38	22.03	22.45	5.08	68.94	2101.66	
7-Jan-10	70.54	21.81	20.19	4.58	71.99	2096.01	
8-Jan-10	71.51	21.78	21.63	3.54	73.02	2081.01	
9-Jan-10	71.05	18.20	23.17	3.52	75.49	2073.79	
10-Jan-10	69.73	17.40	25.85	4.18	76.41	2077.88	
11-Jan-10	70.52	18.36	26.24	4.77	71.47	2128.29	
12-Jan-10	69.36	19.45	27.78	5.27	69.90	2105.59	
13-Jan-10	68.31	19.29	27.76	7.01	72.42	2098.87	
14-Jan-10	68.70	18.49	28.19	6.76	79.35	1993.82	
15-Jan-10	71.24	18.83	20.84	2.45	76.38	2008.41	
16-Jan-10	69.27	18.84	22.02	3.16	76.11	2011.74	
17-Jan-10	66.11	18.07	16.06	0.78	75.56	2036.56	
18-Jan-10	72.30	22.44	24.32	6.87	69.21	2109.85	
19-Jan-10	75.58	22.46	24.18	6.59	67.07	2108.29	
20-Jan-10	78.17	22.47	21.87	5.89	69.98	2122.24	
21-Jan-10	76.57	22.40	25.11	4.72	67.70	2144.33	
22-Jan-10	76.86	22.80	23.91	5.22	67.69	2139.56	
23-Jan-10	75.37	22.81	20.33	4.18	75.94	2126.63	
24-Jan-10	74.40	23.10	15.09	2.12	78.65	2104.65	
25-Jan-10	77.10	23.90	23.47	4.93	77.95	2117.18	
26-Jan-10	73.11	21.75	27.86	4.13	77.40	2055.91	
27-Jan-10	75.27	23.90	23.92	3.43	75.22	2096.28	
28-Jan-10	73.84	23.90	27.65	3.43	71.07	2115.14	
29-Jan-10	71.79	23.90	29.05	3.30	74.24	2151.45	
30-Jan-10	70.72	23.90	27.81	5.21	73.74	2145.33	
31-Jan-10	70.35	23.10	26.14	2.61	82.75	2112.33	
<b>Total</b>	<b>2213.31</b>	<b>657.65</b>	<b>723.40</b>	<b>132.65</b>	<b>2307.45</b>	<b>64849.30</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.

PRICE OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (Rs/KWh)												
Month: Jan 2010												
Market Segment	Day ahead market of IEX			Day ahead market of PXIL			Under Drawl/Over Drawl from the Grid (UI)					
Date	Minimum MCP	Maximum MCP	Weighted Average*	Minimum MCP	Maximum MCP	Weighted Average*	NEW Grid			SR Grid		
							Minimum Price	Maximum Price	Average Price**	Minimum Price	Maximum Price	Average Price**
1-Jan-10	0.50	3.10	2.07	1.15	4.25	2.72	0.12	6.50	2.52	0.12	6.33	3.37
2-Jan-10	1.12	3.20	2.40	1.12	4.25	2.98	0.12	5.99	2.37	0.12	5.14	3.06
3-Jan-10	0.50	3.25	2.28	1.12	4.10	2.77	0.36	6.33	2.64	0.12	4.97	2.86
4-Jan-10	0.10	3.35	2.39	1.11	3.15	2.73	0.12	6.84	3.36	0.48	10.29	3.69
5-Jan-10	1.00	3.60	2.41	0.95	3.30	2.73	1.68	10.29	4.89	0.96	7.01	4.16
6-Jan-10	1.25	4.50	3.00	1.20	4.00	2.87	1.68	10.29	5.49	1.56	10.29	4.43
7-Jan-10	1.65	5.00	3.45	1.50	4.50	3.16	0.96	10.29	4.99	1.32	7.01	4.32
8-Jan-10	2.00	5.00	3.77	2.00	5.00	3.21	0.84	10.29	4.83	1.08	10.29	4.24
9-Jan-10	2.00	6.00	3.88	2.10	6.00	3.45	1.56	10.29	5.28	0.96	6.84	4.18
10-Jan-10	2.00	5.80	3.53	1.50	6.10	3.52	1.32	10.29	4.58	1.92	6.33	4.45
11-Jan-10	2.00	6.11	3.98	2.00	6.10	3.70	1.08	10.29	4.37	1.68	10.29	5.20
12-Jan-10	1.99	6.11	3.95	2.40	6.80	3.80	0.48	10.29	3.93	3.00	10.29	5.09
13-Jan-10	1.99	6.20	4.06	1.99	5.00	3.72	0.12	10.29	3.32	1.56	10.29	4.47
14-Jan-10	1.33	5.50	3.66	1.99	6.00	3.55	0.24	5.99	2.74	0.48	4.97	2.75
15-Jan-10	1.02	6.75	3.90	1.25	6.75	3.37	0.12	6.50	2.88	0.12	4.80	2.32
16-Jan-10	0.35	4.05	2.86	1.00	4.00	2.78	0.72	7.18	3.76	0.48	10.29	3.09
17-Jan-10	1.10	4.05	2.63	1.90	4.00	3.13	0.72	10.29	4.05	0.96	10.29	4.24
18-Jan-10	1.07	5.00	3.42	1.75	5.00	3.08	0.48	10.29	4.30	0.96	7.18	3.94
19-Jan-10	0.95	5.30	3.58	1.20	5.30	3.10	0.60	6.67	3.99	0.96	10.29	4.14
20-Jan-10	0.91	5.50	3.81	1.15	5.50	3.46	0.84	10.29	4.44	0.60	6.84	3.44
21-Jan-10	1.10	5.50	3.84	0.75	5.30	3.55	1.32	10.29	3.92	0.36	5.65	3.65
22-Jan-10	1.50	5.50	3.78	1.59	5.55	3.54	0.84	10.29	4.25	0.36	5.82	3.62
23-Jan-10	1.40	6.11	3.87	1.40	5.60	3.20	1.08	10.29	4.59	1.08	10.29	3.50
24-Jan-10	1.50	5.50	3.64	2.00	3.49	2.85	1.32	7.18	3.64	1.44	6.50	3.85
25-Jan-10	1.50	6.11	4.09	1.75	6.50	3.47	0.60	5.48	3.32	1.80	6.50	4.26
26-Jan-10	1.40	4.00	3.23	1.70	7.00	3.09	0.12	10.29	3.32	1.44	6.16	3.90
27-Jan-10	1.50	5.75	3.78	1.50	5.65	3.77	0.72	10.29	3.75	1.08	6.50	4.18
28-Jan-10	1.50	5.75	3.77	1.85	6.00	3.73	1.32	10.29	4.10	1.92	10.29	4.89
29-Jan-10	1.60	6.00	3.68	2.00	5.70	3.87	0.48	6.67	3.19	1.56	10.29	4.15
30-Jan-10	1.70	6.11	3.72	1.70	6.60	3.90	0.84	6.67	3.52	1.08	5.99	3.74
31-Jan-10	1.80	4.40	3.30	2.00	4.50	3.31	0.24	5.82	2.72	0.60	5.31	3.71
	<b>0.10#</b>	<b>6.75#</b>	<b>3.46</b>	<b>0.75#</b>	<b>7.00#</b>	<b>3.33</b>	<b>0.12#</b>	<b>10.29#</b>	<b>3.84</b>	<b>0.12#</b>	<b>10.29#</b>	<b>3.90</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 Market Clearing Volume (MCV) and Market Clearing Price (MCP) for each hour of the day

\*\* 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

VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY*-WISE) (MUs)										
Month: Jan 2010										
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	327.90	26.78	-301.12	3.17	35.24	32.07	12.21	184.66	172.45	-96.60
Haryana	127.08	10.59	-116.49	0.66	25.89	25.22	6.73	295.92	289.19	197.92
Rajasthan	54.22	724.66	670.43	5.72	103.33	97.61	21.23	281.08	259.85	1027.90
Delhi	205.67	346.79	141.12	52.38	31.18	-21.20	188.77	8.74	-180.03	-60.10
Uttar Pradesh	10.82	116.05	105.24	0.00	107.64	107.64	55.52	195.69	140.18	353.05
Uttarakhand	0.00	105.96	105.96	0.00	0.00	0.00	4.21	103.93	99.72	205.68
Himachal Pradesh	5.75	226.14	220.39	0.00	0.00	0.00	31.50	28.25	-3.25	217.14
J & K	32.29	230.32	198.03	0.00	0.00	0.00	33.17	80.54	47.37	245.40
UT Chandigarh	5.43	13.88	8.46	0.00	0.00	0.00	3.78	22.34	18.56	27.02
MP	9.47	171.66	162.19	10.40	0.19	-10.20	95.90	69.24	-26.66	125.33
Maharashtra	28.23	210.17	181.94	1.82	112.64	110.82	122.75	84.45	-38.30	254.46
Gujarat	173.30	0.00	-173.30	327.47	0.00	-327.47	277.02	10.69	-266.33	-767.10
Chattisgarh	390.72	0.00	-390.72	173.82	0.00	-173.82	204.92	15.72	-189.20	-753.73
Daman and Diu	0.00	0.00	0.00	0.00	0.00	0.00	60.42	0.00	-60.42	-60.42
Dadra & Nagar Haveli	0.00	0.00	0.00	0.00	0.00	0.00	49.77	1.16	-48.61	-48.61
Andhra Pradesh	101.37	0.00	-101.37	2.89	52.24	49.35	68.50	50.99	-17.51	-69.54
Karnataka	336.03	1.78	-334.25	117.68	0.00	-117.68	9.08	151.25	142.17	-309.76
Kerala	78.61	14.35	-64.26	0.00	69.12	69.12	5.39	49.91	44.52	49.38
Tamilnadu	37.20	566.02	528.82	0.00	287.64	287.64	67.70	70.78	3.08	819.53
Pondicherry	0.00	0.00	0.00	0.00	0.00	0.00	30.34	0.09	-30.25	-30.25
West Bengal	452.35	23.41	-428.94	27.24	11.24	-15.99	46.17	52.08	5.90	-439.03
Orissa	34.83	0.00	-34.83	2.95	1.39	-1.55	142.02	17.49	-124.53	-160.92
Bihar	0.00	0.00	0.00	0.00	0.00	0.00	67.31	4.18	-63.13	-63.13
Jharkhand	0.00	37.43	37.43	0.00	0.00	0.00	42.97	2.20	-40.77	-3.34
Sikkim	5.96	1.92	-4.04	9.89	0.00	-9.89	6.16	9.81	3.65	-10.28
DVC	61.89	0.00	-61.89	0.00	0.00	0.00	240.71	0.17	-240.54	-302.44
Arunachal Pradesh	0.00	0.00	0.00	0.00	3.35	3.35	0.66	5.67	5.02	8.37
Assam	0.00	0.00	0.00	0.00	0.00	0.00	22.20	5.40	-16.80	-16.80
Manipur	0.00	0.00	0.00	0.00	0.00	0.00	2.13	9.15	7.03	7.03
Meghalaya	0.00	5.58	5.58	0.00	14.79	14.79	0.36	26.00	25.64	46.00
Mizoram	0.00	0.12	0.12	0.00	0.03	0.03	0.08	7.29	7.21	7.36
Nagaland	0.00	0.00	0.00	0.00	0.00	0.00	0.20	9.75	9.55	9.55
Tripura	11.35	0.00	-11.35	6.99	0.13	-6.86	5.05	1.95	-3.11	-21.32
GOA	0.00	0.00	0.00	0.00	0.00	0.00	34.71	3.44	-31.28	-31.28
JINDAL POWER	245.04	0.00	-245.04	96.88	0.00	-96.88	160.09	1.11	-158.98	-500.89
LANKO_AMK	0.00	0.00	0.00	0.00	0.00	0.00	142.71	0.17	-142.55	-142.55
MUNDRA APL	32.74	0.00	-32.74	0.00	0.00	0.00	9.97	1.31	-8.66	-41.40
LANKO_KONDAPALLY	75.50	0.00	-75.50	16.11	0.00	-16.11	3.54	2.64	-0.90	-92.51

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) DURING JAN 2010				
Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	2870.95	47.58%	4.43%
	(i) Through Traders and PXs	2213.3	36.68%	3.41%
	(ii) Direct	657.6	10.90%	1.01%
2	Through Power Exchanges	856.06	14.19%	1.32%
	IEX	723.40	11.99%	1.12%
	PXIL	132.65	2.20%	0.20%
3	Through UI	2307.5	38.24%	3.56%
	<b>Total</b>	<b>6034.46</b>	<b>100.00%</b>	<b>9.31%</b>
	<b>Total Generation</b>	<b>64849.30</b>		

Source: NLDC

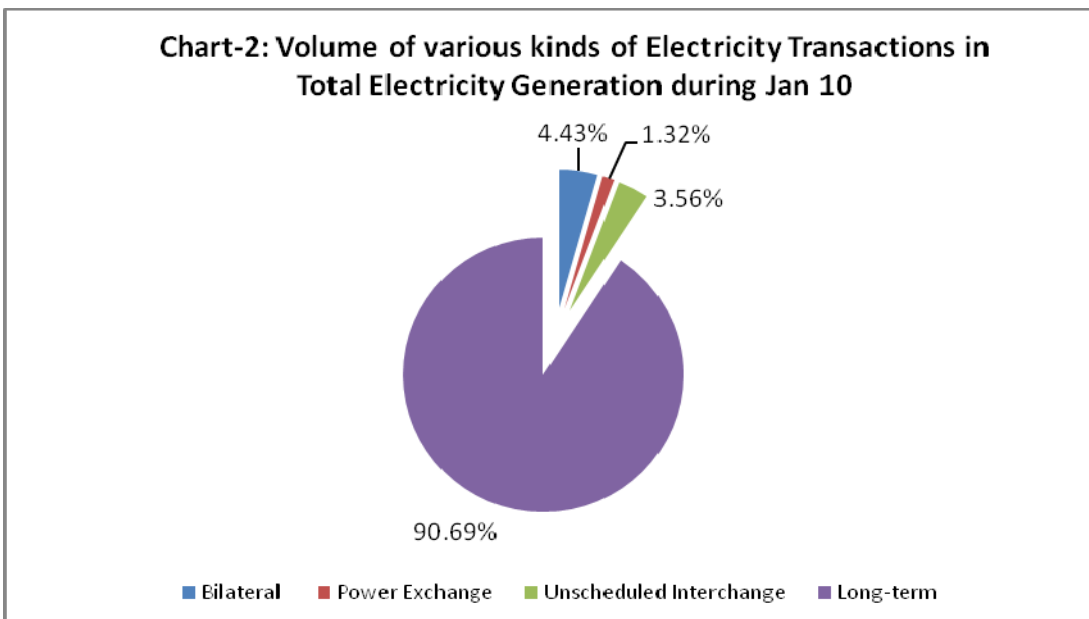
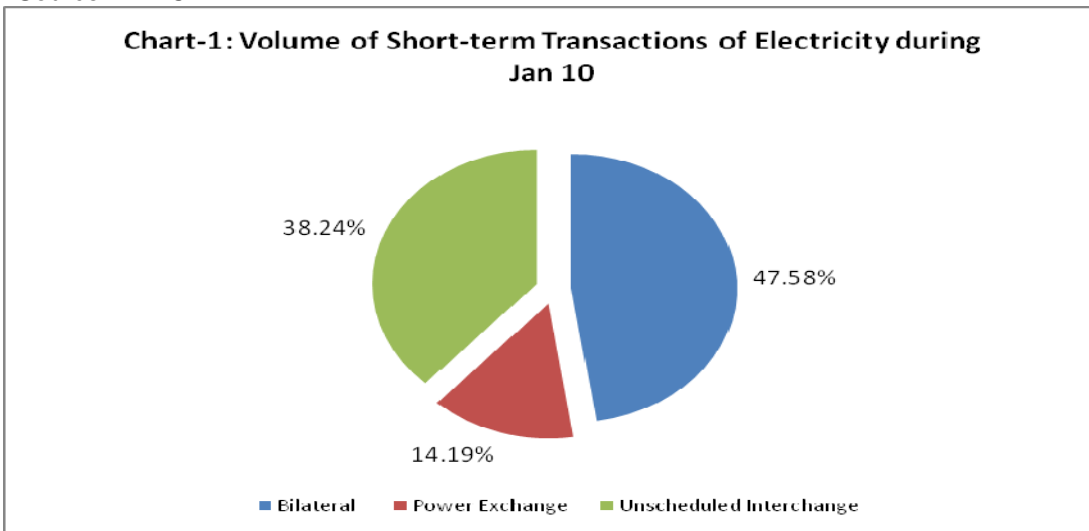
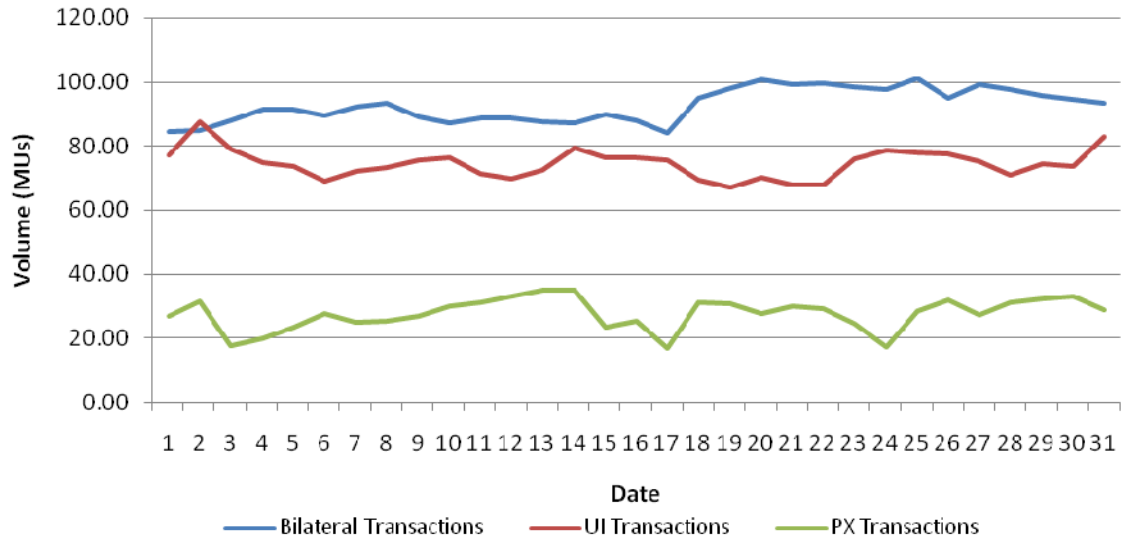


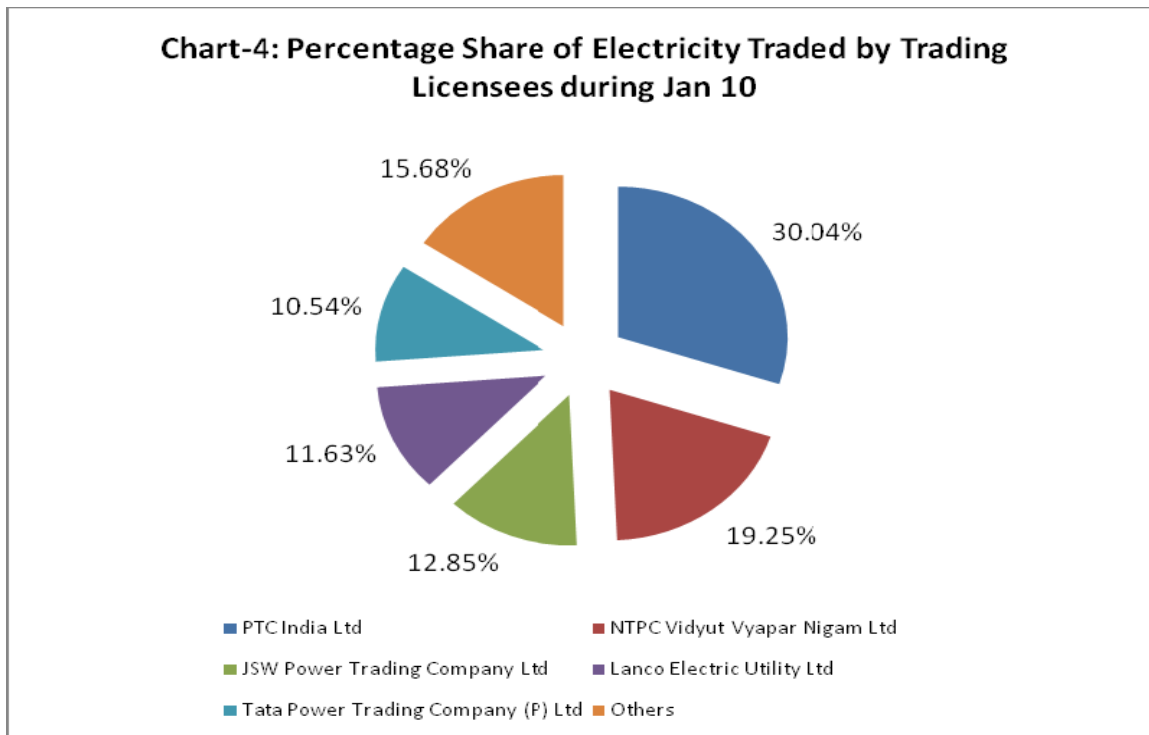
Chart-3: Volume of Short-term Transactions of Electricity, Jan 2010



<b>Sr.No</b>	<b>Name of the Trading Licensee</b>	<b>% Share in total Volume traded by Licensees</b>	<b>Herfindahl-Hirschman Index</b>
1	PTC India Ltd	30.04%	0.0903
2	NTPC Vidyut Vyapar Nigam Ltd	19.25%	0.0371
3	JSW Power Trading Company Ltd	12.85%	0.0165
4	Lanco Electric Utility Ltd	11.63%	0.0135
5	Tata Power Trading Company (P) Ltd	10.54%	0.0111
6	Reliance Energy Trading (P) Ltd	9.54%	0.0091
7	Knowledge Infrastructure Systems (P) Ltd	2.29%	0.0005
8	Adani Enterprises Ltd	1.10%	0.0001
9	Instinct Advertisement & Marketing Ltd	0.87%	0.0001
10	Pune Power Development (P) Ltd	0.74%	0.0001
11	RPG Power Trading Company Ltd	0.69%	0.0000
12	GMR Energy Trading Ltd	0.45%	0.0000
	<b>Total</b>	<b>100.00%</b>	<b>0.1784</b>
	<b>Top 5 trading licensees</b>	<b>84.32%</b>	

Note: Volume of electricity traded by the licensees includes bilateral transactions (inter-state) and the transactions undertaken through power exchanges.

Source: Information submitted by trading licensees



<b>Table-3: PRICE OF POWER TRANSACTED THROUGH TRADERS</b>		
<b>Sr.No</b>	<b>Period of Trade</b>	<b>Weighted Average Sale Price (Rs)</b>
1	RTC	5.34
2	PEAK	5.01
3	OFF PEAK	5.11
	<b>Total</b>	<b>5.26</b>

Source: Information submitted by trading licensees

<b>Table-4: PRICE OF POWER TRANSACTED THROUGH TRADERS</b>		
<b>Sr.No</b>		<b>Sale Price (Rs/KWh)</b>
1	Minimum	1.84
2	Maximum	9.64
3	Weighted Average	<b>5.26</b>

Source: Information submitted by trading licensees

<b>Table-5: PRICE OF POWER TRANSACTED THROUGH POWER EXCHANGE (Rs/KWh)</b>			
<b>Sr.No</b>	<b>MCP</b>	<b>IEX</b>	<b>PXIL</b>
1	Minimum	0.10	0.75
2	Maximum	6.75	7.00
3	Weighted Average	3.46	3.33

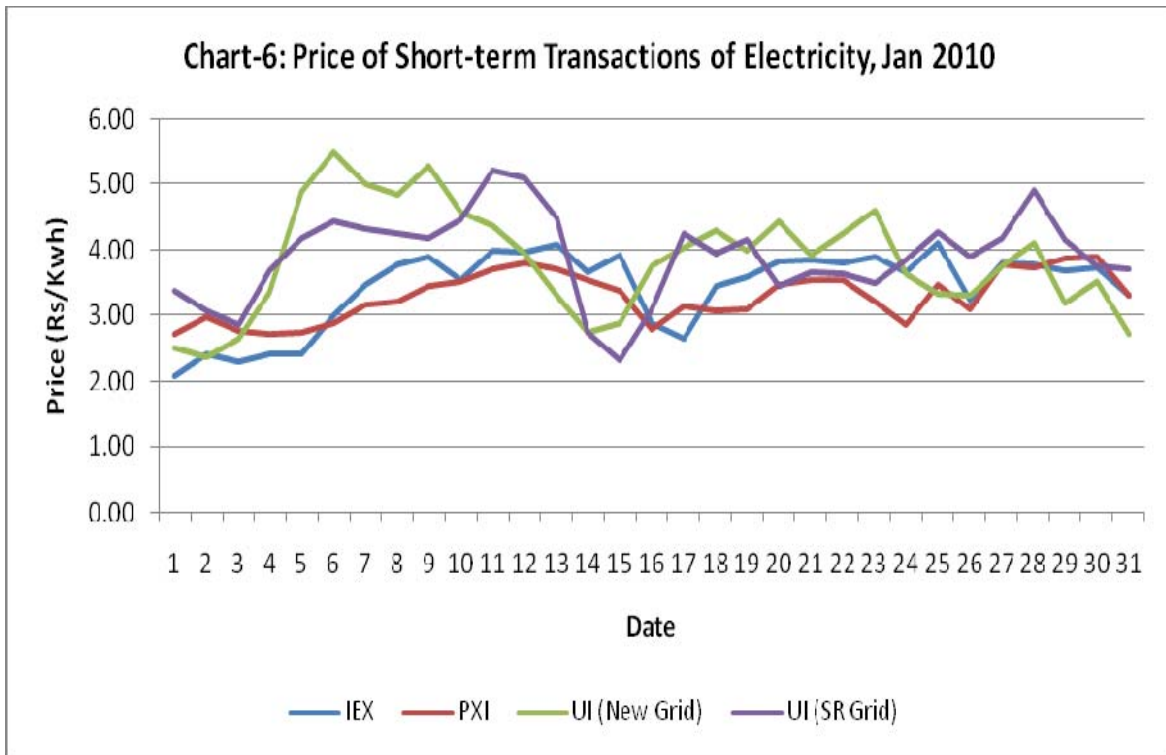
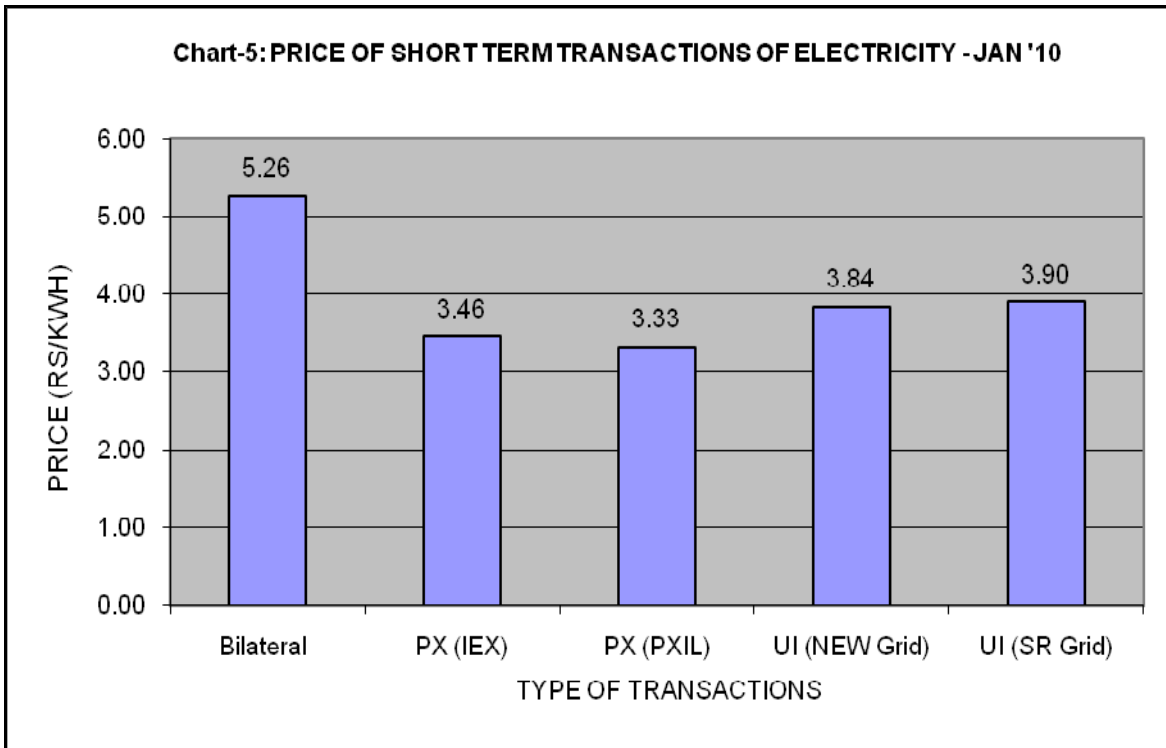
Source: Information submitted by IEX and PXIL

<b>Table-5A: Term ahead market of IEX</b>			
<b>Sr.No</b>	<b>Term ahead contracts</b>	<b>Actual Scheduled Volume (MUs)</b>	<b>Weighted Average Price (Rs/kwh)</b>
1	Day-Ahead Contingency Contracts	0.59	3.46

Source: IEX

<b>Table-6: PRICE OF POWER TRANSACTED THROUGH UI (Rs/KWh)</b>			
<b>Sr.No</b>		<b>NEW Grid</b>	<b>SR Grid</b>
1	Minimum	0.12	0.12
2	Maximum	10.29	10.29
3	Average	3.84	3.90

Source: NLDC



<b>Table-7: VOLUME OF ELECTRICITY SALE THROUGH BILATERAL</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Sale (MUs)</b>	<b>% of Volume</b>
West Bengal	452.35	15.91%
Chattisgarh	390.72	13.74%
Karnataka	336.03	11.82%
Punjab	327.90	11.53%
JINDAL POWER	245.04	8.62%
Delhi	205.67	7.23%
Gujarat	173.30	6.09%
Haryana	127.08	4.47%
Andhra Pradesh	101.37	3.56%
Kerala	78.61	2.76%
LANKO_KONDAPALLY	75.50	2.65%
DVC	61.89	2.18%
Rajasthan	54.22	1.91%
Tamilnadu	37.20	1.31%
Orissa	34.83	1.22%
MUNDRA APL	32.74	1.15%
J & K	32.29	1.14%
Maharashtra	28.23	0.99%
Tripura	11.35	0.40%
Uttar Pradesh	10.82	0.38%
MP	9.47	0.33%
Sikkim	5.96	0.21%
Himachal Pradesh	5.75	0.20%
UT Chandigarh	5.43	0.19%
<b>Total</b>	<b>2843.75</b>	<b>100.00%</b>
<b>Volume of sale by top 5 States</b>	<b>1752.03</b>	<b>61.61%</b>

<b>Table-8: VOLUME OF ELECTRICITY PURCHASE THROUGH BILATERAL</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Purchase (MUs)</b>	<b>% of Volume</b>
Rajasthan	724.66	25.57%
Tamilnadu	566.02	19.98%
Delhi	346.79	12.24%
J & K	230.32	8.13%
Himachal Pradesh	226.14	7.98%
Maharashtra	210.17	7.42%
MP	171.66	6.06%
Uttar Pradesh	116.05	4.10%
Uttarakhand	105.96	3.74%
Jharkhand	37.43	1.32%
Punjab	26.78	0.94%
West Bengal	23.41	0.83%
Kerala	14.35	0.51%
UT Chandigarh	13.88	0.49%
Haryana	10.59	0.37%
Meghalaya	5.58	0.20%
Sikkim	1.92	0.07%
Karnataka	1.78	0.06%
Mizoram	0.12	0.00%
<b>Total</b>	<b>2833.61</b>	<b>100.00%</b>
<b>Volume of purchase by top 5 States</b>	<b>2093.93</b>	<b>73.90%</b>

<b>Table-9: VOLUME OF ELECTRICITY SALE THROUGH POWER EXCHANGE</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Sale (MUs)</b>	<b>% of Volume</b>
Gujarat	327.47	38.25%
Chattisgarh	173.82	20.30%
Karnataka	117.68	13.75%
JINDAL POWER	96.88	11.32%
Delhi	52.38	6.12%
West Bengal	27.24	3.18%
LANKO_KONDAPALLY	16.11	1.88%
MP	10.40	1.21%
Sikkim	9.89	1.15%
Tripura	6.99	0.82%
Rajasthan	5.72	0.67%
Punjab	3.17	0.37%
Orissa	2.95	0.34%
Andhra Pradesh	2.89	0.34%
Maharashtra	1.82	0.21%
Haryana	0.66	0.08%
<b>Total</b>	<b>856.06</b>	<b>100.00%</b>
<b>Volume of sale by top 5 States</b>	<b>768.22</b>	<b>89.74%</b>

<b>Table-10: VOLUME OF ELECTRICITY PURCHASE THROUGH POWER EXCHANGE</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Purchase (MUs)</b>	<b>% of Volume</b>
Tamilnadu	287.64	33.60%
Maharashtra	112.64	13.16%
Uttar Pradesh	107.64	12.57%
Rajasthan	103.33	12.07%
Kerala	69.12	8.07%
Andhra Pradesh	52.24	6.10%
Punjab	35.24	4.12%
Delhi	31.18	3.64%
Haryana	25.89	3.02%
Meghalaya	14.79	1.73%
West Bengal	11.24	1.31%
Arunachal Pradesh	3.35	0.39%
Orissa	1.39	0.16%
MP	0.19	0.02%
Tripura	0.13	0.02%
Mizoram	0.03	0.00%
<b>Total</b>	<b>856.06</b>	<b>100.00%</b>
<b>Volume of purchase by top 5 States</b>	<b>680.38</b>	<b>79.48%</b>



<b>Table-11: VOLUME OF ELECTRICITY EXPORT THROUGH UI</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Export (MUs)</b>	<b>% of Volume</b>
Gujarat	277.02	12.17%
DVC	240.71	10.58%
Chattisgarh	204.92	9.00%
Delhi	188.77	8.29%
JINDAL POWER	160.09	7.03%
LANKO_AMK	142.71	6.27%
Orissa	142.02	6.24%
Maharashtra	122.75	5.39%
MP	95.90	4.21%
Andhra Pradesh	68.50	3.01%
Tamilnadu	67.70	2.97%
Bihar	67.31	2.96%
Daman and Diu	60.42	2.65%
Uttar Pradesh	55.52	2.44%
Dadra & Nagar Haveli	49.77	2.19%
West Bengal	46.17	2.03%
Jharkhand	42.97	1.89%
GOA	34.71	1.53%
J & K	33.17	1.46%
Himachal Pradesh	31.50	1.38%
Pondicherry	30.34	1.33%
Assam	22.20	0.98%
Rajasthan	21.23	0.93%
Punjab	12.21	0.54%
MUNDRA APL	9.97	0.44%
Karnataka	9.08	0.40%
Haryana	6.73	0.30%
Sikkim	6.16	0.27%
Kerala	5.39	0.24%
Tripura	5.05	0.22%
Uttarakhand	4.21	0.19%
UT Chandigarh	3.78	0.17%
LANKO_KONDAPALLY	3.54	0.16%
Manipur	2.13	0.09%
Arunachal Pradesh	0.66	0.03%
Meghalaya	0.36	0.02%
Nagaland	0.20	0.01%
Mizoram	0.08	0.00%
<b>Total</b>	<b>2275.95</b>	<b>100.00%</b>
<b>Volume of Export by top 5 States</b>	<b>1071.50</b>	<b>47.08%</b>

<b>Table-12: VOLUME OF ELECTRICITY IMPORT THROUGH UI</b>		
<b>Name of the State/UT/Other Regional Entity</b>	<b>Volume of Import (MUs)</b>	<b>% of Volume</b>
Haryana	295.92	15.86%
Rajasthan	281.08	15.07%
Uttar Pradesh	195.69	10.49%
Punjab	184.66	9.90%
Karnataka	151.25	8.11%
Uttarakhand	103.93	5.57%
Maharashtra	84.45	4.53%
J & K	80.54	4.32%
Tamilnadu	70.78	3.79%
MP	69.24	3.71%
West Bengal	52.08	2.79%
Andhra Pradesh	50.99	2.73%
Kerala	49.91	2.68%
Himachal Pradesh	28.25	1.51%
Meghalaya	26.00	1.39%
UT Chandigarh	22.34	1.20%
Orissa	17.49	0.94%
Chattisgarh	15.72	0.84%
Gujarat	10.69	0.57%
Sikkim	9.81	0.53%
Nagaland	9.75	0.52%
Manipur	9.15	0.49%
Delhi	8.74	0.47%
Mizoram	7.29	0.39%
Arunachal Pradesh	5.67	0.30%
Assam	5.40	0.29%
Bihar	4.18	0.22%
GOA	3.44	0.18%
LANKO_KONDAPALLY	2.64	0.14%
Jharkhand	2.20	0.12%
Tripura	1.95	0.10%
MUNDRA APL	1.31	0.07%
Dadra & Nagar Haveli	1.16	0.06%
JINDAL POWER	1.11	0.06%
LANKO_AMK	0.17	0.01%
DVC	0.17	0.01%
Pondicherry	0.09	0.01%
Daman and Diu	0.00	0.00%
<b>Total</b>	<b>1865.22</b>	<b>100.00%</b>
<b>Volume of Export by top 5 States</b>	<b>1108.60</b>	<b>59.44%</b>

<b>Table-13: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY-WISE)</b>		
<b>Sr.No</b>	<b>Name of the State/UT/Other Regional Entity</b>	<b>Total volume of net short-term transactions of electricity*</b>
1	Rajasthan	1027.90
2	Tamilnadu	819.53
3	Uttar Pradesh	353.05
4	Maharashtra	254.46
5	J & K	245.40
6	Himachal Pradesh	217.14
7	Uttarakhand	205.68
8	Haryana	197.92
9	MP	125.33
10	Kerala	49.38
11	Meghalaya	46.00
12	UT Chandigarh	27.02
13	Nagaland	9.55
14	Arunachal Pradesh	8.37
15	Mizoram	7.36
16	Manipur	7.03
17	Jharkhand	-3.34
18	Sikkim	-10.28
19	Assam	-16.80
20	Tripura	-21.32
21	Pondicherry	-30.25
22	GOA	-31.28
23	MUNDRA APL	-41.40
24	Dadra & Nagar Haveli	-48.61
25	Delhi	-60.10
26	Daman and Diu	-60.42
27	Bihar	-63.13
28	Andhra Pradesh	-69.54
29	LANKO_KONDAPALLY	-92.51
30	Punjab	-96.60
31	LANKO_AMK	-142.55
32	Orissa	-160.92
33	DVC	-302.44
34	Karnataka	-309.76
35	West Bengal	-439.03
36	JINDAL POWER	-500.89
37	Chattisgarh	-753.73
38	Gujarat	-767.10
* 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-14: Details of Congestion in Power Exchanges for Jan 2010</b>			
	<b>Details of Congestion</b>	<b>IEX</b>	<b>PXIL</b>
A	Unconstrained Cleared Volume* (MU)	806.43	144.01
B	Actual Cleared Volume and hence scheduled (MU)	723.40	132.65
C	Volume of electricity that could not be cleared as hence not scheduled because of congestion (MU) (A-B)	83.03	11.36
D	Volume of electricity that could not be cleared as % to Actual Cleared Volume	11.5%	8.6%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	47%	21%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	2.60%	0.00%
	6.00 - 12.00 hours	49.40%	46.10%
	12.00 - 18.00 hours	42.80%	36.70%
	18.00 - 24.00 hours	5.20%	17.20%

\* This power would have been scheduled had there been no congestion.