MONTHLY REPORT ON
SHORT-TERM TRANSACTIONS OF ELECTRICITY
(May 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 May 2010 is as under:

I: Volume of Short-term Transactions of Electricity

During the Month of May 2010, total electricity generation excluding generation from renewable and captive power plants in India was 67980.40 MUs (Table-1).

Of the total electricity generation, 6394.67 MUs (9.41%) were transacted through short-term, comprising of 3194.72 MUs (4.70%) through Bilateral (through traders and tem-ahead contracts on Power Exchanges and directly between distribution companies), followed by 2529.56 MUs (3.72%) through UI and 670.39 MUs (0.99%) through Power Exchanges (IEX and PXIL) (Table-1 & Chart-2).

Of the total short-term transactions, Bilateral constitute 49.96% (40.04% through traders and term-ahead contracts on Power Exchanges and 9.92% direct between distribution companies) followed by 39.56% through UI and 10.48% 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 37 trading licensees as on 31.5.2010, of which only 15 have engaged in trading during May 2010. Top 5 trading licenses had a share of 87.46% 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 0.2188 shows high concentration/market power (Table-2).

The volume of electricity transacted through IEX and PXIL was 591.86 MUs and 78.53 MUs respectively. The volume of total Buy bids and Sale bids was 981.98 MUs and 1196.79 MUs respectively in IEX and 156.65 MUs and 177.42 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 (0.82 times) and in PXIL (0.88 times) when compared with the supply offered through these exchanges.

The volume of electricity transacted in the term-ahead contracts of power exchanges was 0.095 MU in IEX and 0.00 MU in PXIL (Table-5A).

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.6.17/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 Rs.6.26/kwh, Rs.6.39/kwh and Rs.5.88 respectively. Minimum and Maximum sale price was Rs.2.04/kwh and Rs.7.57/kwh 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.1.45/kwh, Rs.12.50/kwh and Rs.4.45/kwh respectively in IEX and Rs.1.97/kwh, Rs.12.00/kwh and Rs.4.65/kwh respectively in PXIL (Table-5).

The weighted average price of electricity transacted in the term-ahead contracts of power exchanges was Rs.3.50/kWh for Intra-Day Contracts in IEX (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.5.14/kWh in the NEW Grid and Rs.4.25/kWh in the SR Grid. Minimum and Maximum price of UI was Rs.0.00/kWh and Rs.17.46/kWh respectively in the New Grid and Rs.0.00/kWh and Rs.17.46/kWh 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[1]-Wise):

Of the total bilateral transactions, top 5 regional entities selling 59.12% of the volume are Jindal Power Ltd, Chattisgarh, Himachal Pradesh, Jammu & Kashmir and Gujarat and top 5 regional entities purchasing 73.29% of the volume are Delhi, Tamil Nadu, Maharashtra, Punjab and Andhra Pradesh (Table-7 & 8).

Of the total Power Exchange transactions, top 5 regional entities selling 68.00% of the volume are Gujarat, Delhi, Chattisgarh, Andhra Pradesh and Lanco Kondapalli Ltd and top 5 regional entities purchasing 80.24% of the volume are Maharashtra, Haryana, Rajasthan, Tamil Nadu and Uttar Pradesh (Table-9 & 10).

Of the total UI transactions, top 5 regional entities underdrawing 60.85% of the volume are Gujarat, Delhi, Chattisgarh, Lanco Amarkant Ltd and Andhra Pradesh and top 5 regional entities overdrawing 56.26% of the volume are Maharashtra, Haryana, Punjab, Uttar Pradesh and Orissa (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 Chattisgarh, Gujarat, Jindal Power Ltd, Himachal Pradesh and Jammu & Kashmir and top 5 regional entities purchasing electricity are Maharashtra, Tamil Nadu, Haryana, Punjab and Delhi.

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

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[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.*

[2] *"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"[3].

In the month of May 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 been 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 1% of the actual cleared volume in IEX and about 3% of the actual cleared volume in PXIL.

In IEX and PXIL congestion occurred in Southern Region. In IEX congestion occurred about 7.53% of the hourly time blocks, whereas in PXIL it occurred about 8.06% 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 9.41%.
- Of the total short-term transactions of electricity, 49.96% transacted through bilateral (through traders and term ahead contracts on power exchanges and directly by distribution companies) followed by 39.56% through UI and 10.48% through Power Exchanges.

[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.

- Top 5 trading licenses are having share of 87.46% in the total volume traded by all the trading licensees.
- The price of electricity transacted through Trading Licensees was relatively high (Rs.6.17/KWh) when compared with the price of electricity transacted through Power Exchanges (Rs.4.54/KWh in IEX and Rs.4.65/KWh in PXIL) and the price of electricity transacted through UI (Rs.5.14/KWh in NEW Grid and Rs.4.25/KWh in SR Grid).
- The Herfindahl Hirschman Index computed for volume of electricity traded by trading licensees was 0.2188 shows high 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 (0.82 times) and in PXIL (0.88 times) when compared with the supply offered through these exchanges.
- Top 5 regional entities selling electricity are Chattisgarh, Gujarat, Jindal Power Ltd, Himachal Pradesh and Jammu & Kashmir and top 5 regional entities purchasing electricity are Maharashtra, Tamil Nadu, Haryana, Punjab and Delhi.
- In IEX and PXIL congestion occurred in Southern Region. In IEX congestion occurred about 7.53% of the hourly time blocks, whereas in PXIL it occurred about 8.06% 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 1% of the actual cleared volume in IEX and about 3% of the actual cleared volume in PXIL.

Format-1

VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (ALL INDIA) (MUs)						
Month: May 2010						
Date	**Bilateral**		**Power Exchange (Market Clearing Volume of day ahead market)**		**Unscheduled Interchange (Over Drawl+Under Generation)**	**Total Electricity Generation (MUs) as given at CEA Website***
	Through Traders and PXs**	**Direct**	**IEX**	**PXI**		
1-May-10	79.97	17.80	15.46	3.62	86.72	2182.95
2-May-10	80.50	18.24	12.49	2.13	87.26	2128.32
3-May-10	77.55	19.82	21.87	3.63	73.16	2179.56
4-May-10	79.58	19.65	16.38	1.95	79.81	2198.96
5-May-10	80.71	20.33	11.95	0.80	83.75	2215.57
6-May-10	85.20	20.21	12.81	1.02	80.76	2228.14
7-May-10	86.89	20.51	18.84	2.81	84.70	2213.74
8-May-10	91.68	20.53	17.38	2.48	81.63	2209.99
9-May-10	86.30	20.12	21.71	3.06	74.66	2173.94
10-May-10	85.59	20.73	15.11	2.59	71.62	2232.77
11-May-10	86.74	21.07	15.48	1.48	77.89	2278.81
12-May-10	88.05	21.53	18.35	3.61	62.23	2288.42
13-May-10	88.81	21.23	12.63	2.97	63.47	2271.16
14-May-10	87.45	21.05	16.78	3.49	68.04	2224.09
15-May-10	86.16	20.66	17.09	3.79	86.21	2248.84
16-May-10	84.37	20.79	23.62	4.20	86.17	2186.48
17-May-10	85.17	21.61	18.05	3.19	69.65	2210.88
18-May-10	86.78	21.24	15.43	1.99	69.12	2218.09
19-May-10	86.71	20.53	16.88	1.83	89.41	2130.84
20-May-10	88.37	21.25	22.55	2.44	90.10	2120.04
21-May-10	88.43	20.90	27.30	3.77	87.67	2108.48
22-May-10	80.69	19.93	29.33	4.22	90.84	2117.02
23-May-10	85.37	19.28	29.99	3.86	99.84	2109.27
24-May-10	81.95	19.48	31.07	2.89	90.55	2166.32
25-May-10	78.44	20.85	26.80	2.72	88.61	2177.09
26-May-10	78.33	21.13	22.36	0.72	88.94	2194.67
27-May-10	79.65	22.26	19.84	2.12	92.65	2190.75
28-May-10	73.83	20.99	15.24	1.27	103.81	2200.04
29-May-10	73.13	20.38	15.80	1.38	78.10	2218.56
30-May-10	69.38	20.08	15.22	1.10	82.04	2158.10
31-May-10	68.54	20.24	18.07	1.44	60.11	2198.51
Total	**2560.29**	**634.43**	**591.86**	**78.53**	**2529.56**	**67980.40**

Source: NLDC

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

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

Format-2

PRICE OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (Rs/KWh)												
Month: May 2010												
Market Segment	**Day ahead market of IEX**			**Day ahead market of PXIL**			**Under Drawl/Over Drawl from the Grid (UI)**					
Date	**Mini-mum MCP**	**Maxi-mum MCP**	**Weighted Average***	**Mini-mum MCP**	**Maxi-mum MCP**	**Weighted Average***	**NEW Grid**			**SR Grid**		
							Mini-mum Price	**Maxi-mum Price**	**Ave-rage Price****	**Mini-mum Price**	**Maxi-mum Price**	**Ave-rage Price****
1-May-10	7.50	10.50	8.39	7.00	9.50	7.74	0.00	10.29	4.11	0.00	4.68	3.01
2-May-10	5.00	8.00	6.70	4.75	8.00	6.51	0.00	7.01	3.47	0.60	6.16	3.31
3-May-10	4.81	12.50	8.50	4.00	12.00	8.27	0.00	12.22	4.05	0.00	4.03	2.60
4-May-10	4.38	8.80	5.99	4.00	8.50	7.30	0.00	12.22	4.17	0.31	7.32	3.03
5-May-10	2.50	5.15	4.23	3.90	5.00	4.29	0.16	12.22	3.18	1.24	6.85	3.36
6-May-10	2.00	3.15	2.82	2.50	2.90	2.69	0.00	17.46	4.87	1.71	12.22	4.92
7-May-10	2.50	3.60	2.99	2.50	3.15	2.86	0.00	12.22	3.02	2.17	12.22	5.00
8-May-10	2.83	4.00	3.36	2.50	3.50	3.04	0.00	12.22	3.43	0.00	17.46	5.38
9-May-10	2.50	4.00	2.90	2.40	3.75	2.85	0.16	12.22	3.83	1.55	17.46	6.27
10-May-10	2.92	9.10	4.53	3.75	5.00	4.17	3.10	12.22	6.30	0.31	12.22	7.78
11-May-10	2.87	8.70	5.00	4.00	5.50	4.71	2.33	12.22	5.82	2.48	17.46	9.33
12-May-10	2.95	9.60	5.17	2.70	5.75	4.77	3.10	17.46	8.41	2.33	17.46	8.40
13-May-10	4.00	10.00	5.99	2.70	6.00	5.14	1.40	17.46	7.47	1.55	12.22	5.84
14-May-10	2.99	8.00	5.58	3.50	6.50	5.26	1.40	17.46	8.52	2.02	12.22	5.13
15-May-10	3.00	7.00	5.54	3.60	7.00	5.29	0.78	17.46	6.62	1.86	12.22	5.33
16-May-10	3.00	6.24	4.86	2.90	6.00	4.09	0.00	12.22	7.43	0.00	12.22	4.45
17-May-10	3.00	7.00	5.43	3.50	6.00	4.74	2.33	17.46	8.62	0.47	17.46	4.79
18-May-10	3.37	6.90	5.63	3.49	7.30	5.71	4.03	17.46	11.48	0.00	12.22	3.79
19-May-10	4.00	7.49	6.02	3.99	7.00	5.69	0.93	17.46	8.54	0.00	4.50	2.31
20-May-10	4.60	8.00	6.28	4.00	7.10	5.37	1.24	12.22	6.80	0.00	5.44	2.58
21-May-10	4.00	7.00	5.23	4.00	5.50	5.02	1.71	17.46	6.57	0.00	4.97	2.78
22-May-10	3.50	6.00	4.42	3.50	5.15	4.52	0.00	12.22	4.64	0.47	5.44	2.75
23-May-10	2.70	5.00	3.59	2.70	4.30	3.50	0.00	7.32	2.55	0.00	3.88	2.14
24-May-10	2.70	5.00	3.80	2.49	4.90	3.75	0.00	12.22	2.85	0.00	6.85	2.77
25-May-10	2.50	5.00	3.79	2.99	3.99	3.47	0.00	7.79	2.67	0.31	6.85	3.23
26-May-10	2.00	4.01	2.96	2.49	3.25	2.91	0.00	8.26	2.54	0.78	6.38	3.07
27-May-10	2.40	3.72	2.74	2.50	2.90	2.62	0.00	7.32	2.58	0.00	7.79	3.52
28-May-10	2.00	3.50	2.54	2.29	2.90	2.74	0.00	6.38	1.70	0.78	6.85	3.44
29-May-10	1.45	2.90	2.17	2.25	2.94	2.74	0.31	8.26	3.78	0.00	7.32	3.81
30-May-10	1.71	2.90	2.21	1.97	2.35	2.11	0.47	12.22	3.54	0.00	6.85	3.13
31-May-10	2.00	3.64	2.61	2.15	3.00	2.84	2.02	12.22	5.68	0.00	12.22	4.40
	1.45#	12.50#	4.54	1.97#	12.00#	4.65	0.00#	17.46#	5.14	0.00#	17.46#	4.25

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

Format-3

VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY*-WISE) (MUs)										
Month: May 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	97.00	217.86	120.87	3.05	29.84	26.79	31.54	323.31	291.77	439.43
Haryana	7.12	38.60	31.48	0.75	143.55	142.80	3.06	406.58	403.51	577.80
Rajasthan	31.54	205.02	173.48	3.67	95.27	91.60	59.66	190.94	131.28	396.36
Delhi	3.64	817.53	813.90	132.46	9.98	-122.47	275.46	9.76	-265.70	425.73
Uttar Pradesh	43.74	121.52	77.78	0.00	57.64	57.64	56.83	237.34	180.51	315.92
Uttarakhand	57.66	0.00	-57.66	0.00	0.00	0.00	12.28	84.81	72.52	14.86
Himachal Pradesh	335.93	0.00	-335.93	30.53	0.00	-30.53	45.54	17.12	-28.42	-394.88
J & K	315.40	0.00	-315.40	2.41	0.00	-2.41	31.49	45.87	14.38	-303.42
UT Chandigarh	0.00	32.96	32.96	0.00	0.00	0.00	9.26	10.92	1.66	34.62
MP	217.50	59.08	-158.42	21.17	14.06	-7.11	19.46	135.55	116.08	-49.45
Maharashtra	54.31	414.28	359.97	17.16	151.69	134.53	13.39	417.74	404.36	898.86
Gujarat	236.63	0.00	-236.63	167.86	28.31	-139.55	299.02	13.32	-285.69	-661.87
Chattisgarh	476.97	48.35	-428.62	65.88	0.00	-65.88	221.97	11.46	-210.50	-704.99
Daman and Diu	0.00	0.00	0.00	0.00	0.13	0.13	4.06	10.38	6.32	6.45
Dadra & Nagar Haveli	0.00	0.00	0.00	0.72	13.39	12.67	4.16	14.38	10.23	22.90
Andhra Pradesh	66.47	206.47	139.99	47.40	16.83	-30.57	134.62	31.56	-103.07	6.36
Karnataka	127.57	106.10	-21.47	0.00	0.00	0.00	16.02	140.84	124.82	103.35
Kerala	95.67	72.01	-23.66	0.69	13.96	13.27	4.33	80.78	76.45	66.06
Tamilnadu	4.20	685.16	680.96	0.00	89.78	89.78	127.43	76.77	-50.67	720.07
Pondicherry	0.00	0.00	0.00	0.00	0.00	0.00	18.56	0.46	-18.11	-18.11
West Bengal	133.27	45.07	-88.20	42.08	2.30	-39.78	35.75	103.59	67.85	-60.14
Orissa	49.98	28.78	-21.20	31.22	0.00	-31.22	0.89	208.26	207.37	154.95
Bihar	0.00	0.00	0.00	0.00	0.00	0.00	14.61	68.68	54.07	54.07
Jharkhand	0.00	74.40	74.40	0.00	0.00	0.00	4.71	77.57	72.85	147.25
Sikkim	21.73	1.49	-20.24	21.37	0.00	-21.37	2.44	7.15	4.70	-36.90
DVC	160.14	0.75	-159.39	0.00	0.00	0.00	77.92	24.56	-53.36	-212.75
Arunachal Pradesh	5.51	0.00	-5.51	1.65	0.37	-1.28	6.84	3.15	-3.69	-10.48
Assam	0.66	0.48	-0.18	0.69	0.00	-0.69	31.97	8.95	-23.02	-23.89
Manipur	0.00	0.00	0.00	0.00	0.00	0.00	7.17	2.20	-4.97	-4.97
Meghalaya	0.00	10.71	10.71	1.89	2.85	0.95	6.39	6.09	-0.30	11.36
Mizoram	0.00	0.00	0.00	0.00	0.00	0.00	2.45	2.56	0.11	0.11
Nagaland	0.00	0.00	0.00	0.00	0.00	0.00	2.12	7.97	5.85	5.85
Tripura	0.27	8.09	7.82	4.93	0.05	-4.88	18.67	0.46	-18.21	-15.26
GOA	0.00	0.00	0.00	0.69	0.40	-0.29	8.92	30.38	21.45	21.17
JINDAL POWER	487.92	0.00	-487.92	30.78	0.00	-30.78	7.56	3.12	-4.44	-523.14
LANKO_AMK	0.00	0.00	0.00	0.00	0.00	0.00	154.17	0.00	-154.17	-154.17
MUNDRA APL	53.04	0.00	-53.04	0.00	0.00	0.00	0.00	11.48	0.00	-53.04
LANKO_KONDAPALLY	50.03	0.00	-50.03	44.24	0.00	-44.24	12.72	6.01	-6.71	-100.98

Source: NLDC

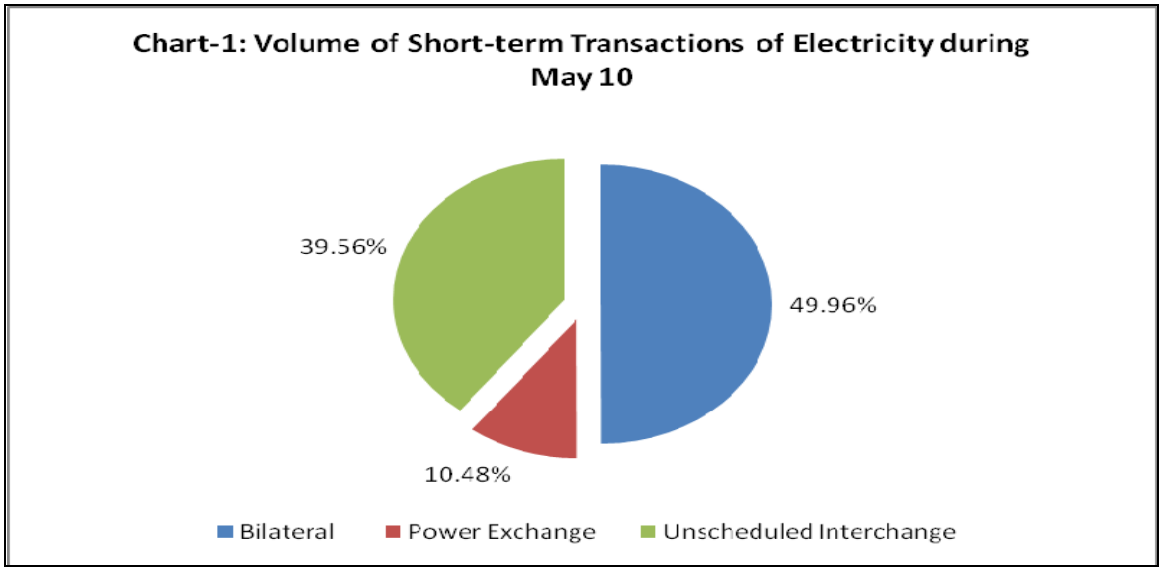
* in case of a state, the entities which are "selling" also include generators connected to state grid and the entities which are "buying" also include open access consumers.

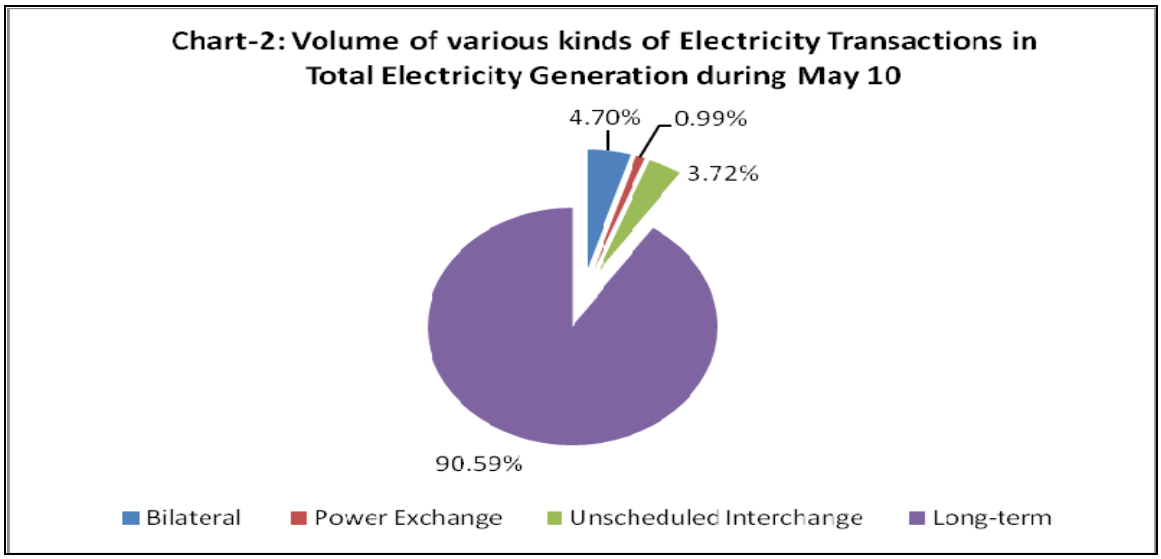
** (-) indicates sale and (+) indicates purchase

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

Table-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (ALL INDIA), MAY 2010				
Sr.No	**Short-term transactions**	**Volume (MUs)**	**% to Volume of short-term transactions**	**% to Total Generation**
1	Bilateral	*3194.72*	49.96%	4.70%
	(i) Through Traders and PXs	2560.29	40.04%	3.77%
	(ii) Direct	*634.43*	9.92%	0.93%
2	Through Power Exchanges	*670.39*	10.48%	0.99%
	IEX	*591.86*	9.26%	0.87%
	PXIL	*78.53*	1.23%	0.12%
3	Through UI	*2529.56*	39.56%	3.72%
	Total	**6394.67**	**100.00%**	**9.41%**
	Total Generation	***67980.40***		

Source: NLDC





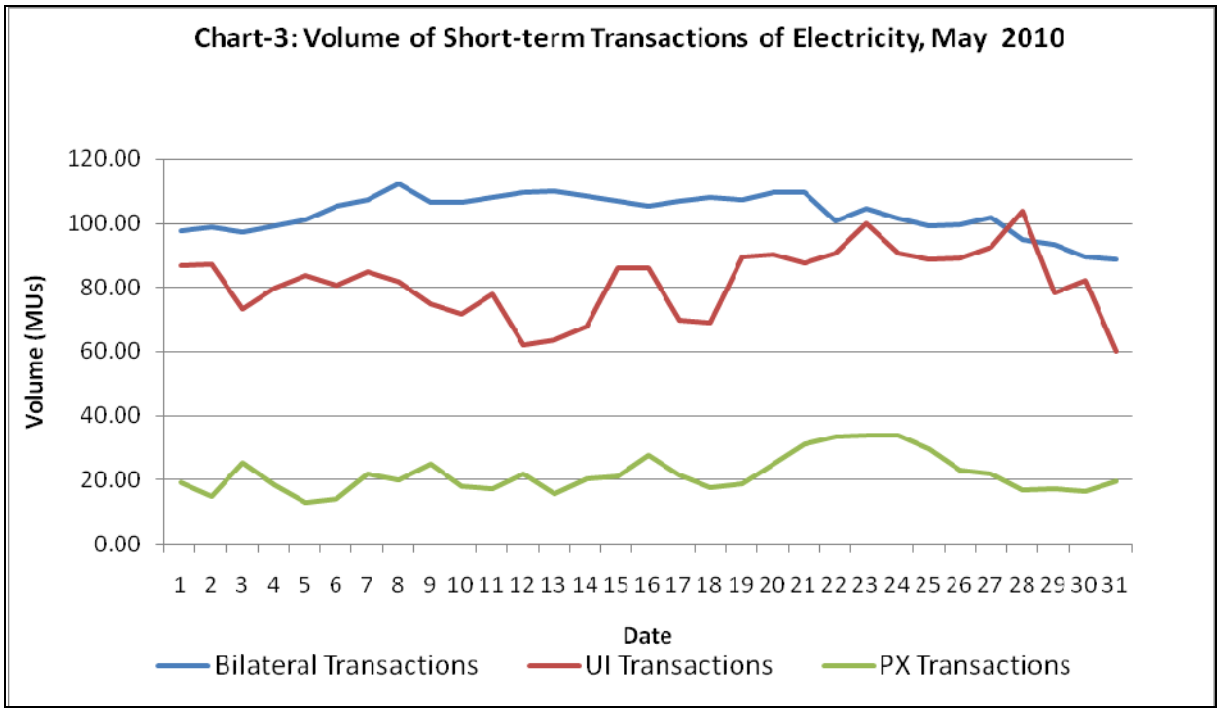


Chart-3: Volume of Short-term Transactions of Electricity, May 2010
Volume (MUs)
120.00
100.00
80.00
60.00
40.00
20.00
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Date
Bilateral Transactions
UI Transactions
PX Transactions

Table-2: Percentage Share of Electricity Traded by Trading Licensees during May 2010			
Sr.No	**Name of the Trading Licensee**	**% Share in total Volume traded by Licensees**	**Herfindahl-Hirschman Index**
1	PTC India Ltd	39.64%	0.1571
2	Lanco Electric Utility Ltd	14.46%	0.0209
3	NTPC Vidyut Vyapar Nigam Ltd	13.18%	0.0174
4	Tata Power Trading Company (P) Ltd	10.74%	0.0115
5	Reliance Energy Trading (P) Ltd	9.44%	0.0089
6	GMR Energy Trading Ltd	3.72%	0.0014
7	JSW Power Trading Company Ltd	2.99%	0.0009
8	Shree Cement Ltd.	1.56%	0.0002
9	Instinct Advertisement & Marketing Ltd	1.47%	0.0002
10	Adani Enterprises Ltd	0.78%	0.0001
11	Pune Power Development (P) Ltd	0.68%	0.0000
12	RPG Power Trading Company Ltd	0.61%	0.0000
13	Indrajit Power Technology Pvt Ltd	0.43%	0.0000
14	Knowledge Infrastructure Systems (P) Ltd	0.24%	0.0000
15	Godawari Power & Ispat Ltd	0.06%	0.0000
	Total	100.00%	**0.2188**
	Top 5 trading licensees	**87.46%**	
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			

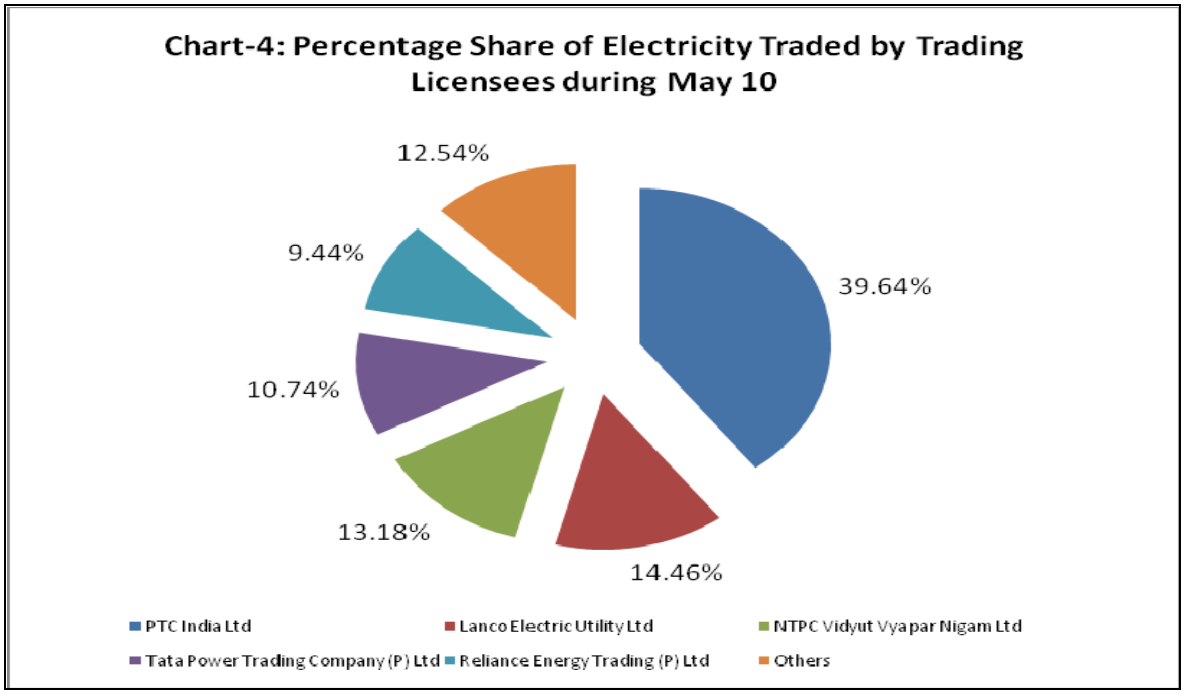


Table-3: PRICE OF POWER TRANSACTED THROUGH TRADERS		
Sr.No	**Period of Trade**	**Weighted Average Sale Price (Rs)**
1	RTC	6.26
2	PEAK	6.39
3	OFF PEAK	5.88
	Total	6.17

Source: Information submitted by trading licensees

Table-4: PRICE OF POWER TRANSACTED THROUGH TRADERS		
Sr.No		**Sale Price (Rs/KWh)**
1	Minimum	2.04
2	Maximum	7.57
3	Weighted Average	6.17

Source: Information submitted by trading licensees

Table-5: PRICE OF POWER TRANSACTED THROUGH POWER EXCHANGE (Rs/KWh)			
Sr.No	**MCP**	**IEX**	**PXIL**
1	Minimum	1.45	1.97
2	Maximum	12.50	12.00
3	Weighted Average	4.54	4.65

Source: Information submitted by IEX and PXIL

Table-5A: Term ahead market of IEX			
Sr.No	**Term ahead contracts**	**Actual Scheduled Volume (MUs)**	**Weighted Average Price (Rs/kwh)**
1	Intra-Day Contracts	0.10	3.50

Source: IEX

Table-6: PRICE OF POWER TRANSACTED THROUGH UI (Rs/KWh)			
Sr.No		**NEW Grid**	**SR Grid**
1	Minimum	0.00	0.00
2	Maximum	17.46	17.46
3	Average	5.14	4.25

Source: NLDC

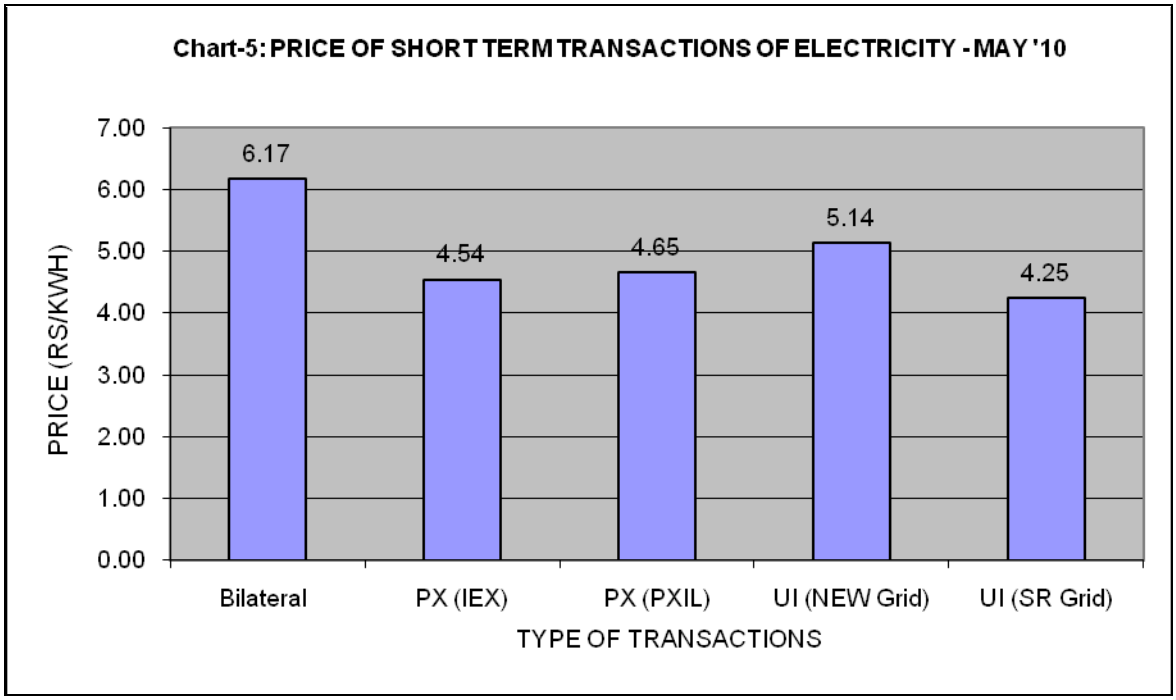


Chart-5: PRICE OF SHORT TERM TRANSACTIONS OF ELECTRICITY - MAY '10
PRICE (RS/KWH)
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
6.17
4.54
4.65
5.14
4.25
Bilateral
PX (IEX)
PX (PXIL)
UI (NEW Grid)
UI (SR Grid)
TYPE OF TRANSACTIONS

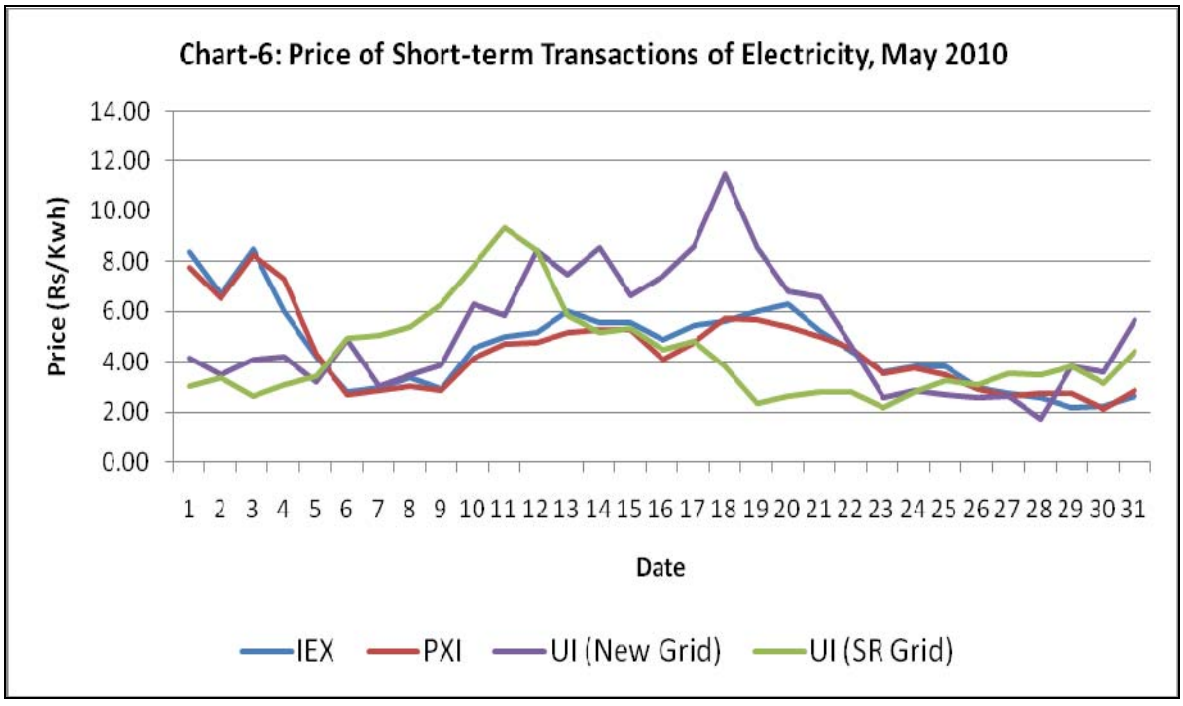


Chart-6: Price of Short-term Transactions of Electricity, May 2010
Price (Rs/Kwh)
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Date
IEX
PXI
UI (New Grid)
UI (SR Grid)

Table-7: VOLUME OF ELECTRICITY SALE THROUGH BILATERAL		
Name of the State/UT/Other Regional Entity	**Volume of Sale (MUs)**	**% of Volume**
JINDAL POWER	487.92	15.57%
Chattisgarh	476.97	15.22%
Himachal Pradesh	335.93	10.72%
J & K	315.40	10.06%
Gujarat	236.63	7.55%
MP	217.50	6.94%
DVC	160.14	5.11%
West Bengal	133.27	4.25%
Karnataka	127.57	4.07%
Punjab	97.00	3.10%
Kerala	95.67	3.05%
Andhra Pradesh	66.47	2.12%
Uttarakhand	57.66	1.84%
Maharashtra	54.31	1.73%
MUNDRA APL	53.04	1.69%
LANKO_KONDAPALLY	50.03	1.60%
Orissa	49.98	1.59%
Uttar Pradesh	43.74	1.40%
Rajasthan	31.54	1.01%
Sikkim	21.73	0.69%
Haryana	7.12	0.23%
Arunachal Pradesh	5.51	0.18%
Tamilnadu	4.20	0.13%
Delhi	3.64	0.12%
Assam	0.66	0.02%
Tripura	0.27	0.01%
Total	**3133.87**	**100.00%**
Volume of sale by top 5 States	**1852.84**	**59.12%**

Table-8: VOLUME OF ELECTRICITY PURCHASE THROUGH BILATERAL		
Name of the State/UT/Other Regional Entity	**Volume of Purchase (MUs)**	**% of Volume**
Delhi	817.53	25.59%
Tamilnadu	685.16	21.45%
Maharashtra	414.28	12.97%
Punjab	217.86	6.82%
Andhra Pradesh	206.47	6.46%
Rajasthan	205.02	6.42%
Uttar Pradesh	121.52	3.80%
Karnataka	106.10	3.32%
Jharkhand	74.40	2.33%
Kerala	72.01	2.25%
MP	59.08	1.85%
Chattisgarh	48.35	1.51%
West Bengal	45.07	1.41%
Haryana	38.60	1.21%
UT Chandigarh	32.96	1.03%
Orissa	28.78	0.90%
Meghalaya	10.71	0.34%
Tripura	8.09	0.25%
Sikkim	1.49	0.05%
DVC	0.75	0.02%
Assam	0.48	0.02%
Total	**3194.72**	**100.00%**
Volume of purchase by top 5 States	**2341.31**	**73.29%**

Table-9: VOLUME OF ELECTRICITY SALE THROUGH POWER EXCHANGE		
Name of the State/UT/Other Regional Entity	**Volume of Sale (MUs)**	**% of Volume**
Gujarat	167.86	24.93%
Delhi	132.46	19.67%
Chattisgarh	65.88	9.78%
Andhra Pradesh	47.40	7.04%
LANKO_KONDAPALLY	44.24	6.57%
West Bengal	42.08	6.25%
Orissa	31.22	4.64%
JINDAL POWER	30.78	4.57%
Himachal Pradesh	30.53	4.53%
Sikkim	21.37	3.17%
MP	21.17	3.14%
Maharashtra	17.16	2.55%
Tripura	4.93	0.73%
Rajasthan	3.67	0.55%
Punjab	3.05	0.45%
J & K	2.41	0.36%
Meghalaya	1.89	0.28%
Arunachal Pradesh	1.65	0.25%
Haryana	0.75	0.11%
Dadra & Nagar Haveli	0.72	0.11%
Assam	0.69	0.10%
GOA	0.69	0.10%
Kerala	0.69	0.10%
Total	**673.26**	**100.00%**
Volume of sale by top 5 States	**457.83**	**68.00%**

Table-10: VOLUME OF ELECTRICITY PURCHASE THROUGH POWER EXCHANGE		
Name of the State/UT/Other Regional Entity	**Volume of Purchase (MUs)**	**% of Volume**
Maharashtra	151.69	22.63%
Haryana	143.55	21.41%
Rajasthan	95.27	14.21%
Tamilnadu	89.78	13.39%
Uttar Pradesh	57.64	8.60%
Punjab	29.84	4.45%
Gujarat	28.31	4.22%
Andhra Pradesh	16.83	2.51%
MP	14.06	2.10%
Kerala	13.96	2.08%
Dadra & Nagar Haveli	13.39	2.00%
Delhi	9.98	1.49%
Meghalaya	2.85	0.42%
West Bengal	2.30	0.34%
GOA	0.40	0.06%
Arunachal Pradesh	0.37	0.06%
Daman and Diu	0.13	0.02%
Tripura	0.05	0.01%
Total	**670.39**	**100.00%**
Volume of purchase by top 5 States	**537.93**	**80.24%**

Table-11: VOLUME OF ELECTRICITY EXPORT THROUGH UI		
Name of the State/UT/Other Regional Entity	**Volume of Export (MUs)**	**% of Volume**
Gujarat	299.02	16.77%
Delhi	275.46	15.45%
Chattisgarh	221.97	12.45%
LANKO_AMK	154.17	8.64%
Andhra Pradesh	134.62	7.55%
Tamilnadu	127.43	7.15%
DVC	77.92	4.37%
Rajasthan	59.66	3.35%
Uttar Pradesh	56.83	3.19%
Himachal Pradesh	45.54	2.55%
West Bengal	35.75	2.00%
Assam	31.97	1.79%
Punjab	31.54	1.77%
J & K	31.49	1.77%
MP	19.46	1.09%
Tripura	18.67	1.05%
Pondicherry	18.56	1.04%
Karnataka	16.02	0.90%
Bihar	14.61	0.82%
Maharashtra	13.39	0.75%
LANKO_KONDAPALLY	12.72	0.71%
Uttarakhand	12.28	0.69%
UT Chandigarh	9.26	0.52%
GOA	8.92	0.50%
JINDAL POWER	7.56	0.42%
Manipur	7.17	0.40%
Arunachal Pradesh	6.84	0.38%
Meghalaya	6.39	0.36%
Jharkhand	4.71	0.26%
Kerala	4.33	0.24%
Dadra & Nagar Haveli	4.16	0.23%
Daman and Diu	4.06	0.23%
Haryana	3.06	0.17%
Mizoram	2.45	0.14%
Sikkim	2.44	0.14%
Nagaland	2.12	0.12%
Orissa	0.89	0.05%
MUNDRA APL	0.00	0.00%
Total	**1783.45**	**100.00%**
Volume of Export by top 5 States	**1085.24**	**60.85%**

Table-12: VOLUME OF ELECTRICITY IMPORT THROUGH UI		
Name of the State/UT/Other Regional Entity	**Volume of Import (MUs)**	**% of Volume**
Maharashtra	417.74	14.75%
Haryana	406.58	14.36%
Punjab	323.31	11.42%
Uttar Pradesh	237.34	8.38%
Orissa	208.26	7.35%
Rajasthan	190.94	6.74%
Karnataka	140.84	4.97%
MP	135.55	4.79%
West Bengal	103.59	3.66%
Uttarakhand	84.81	2.99%
Kerala	80.78	2.85%
Jharkhand	77.57	2.74%
Tamilnadu	76.77	2.71%
Bihar	68.68	2.43%
J & K	45.87	1.62%
Andhra Pradesh	31.56	1.11%
GOA	30.38	1.07%
DVC	24.56	0.87%
Himachal Pradesh	17.12	0.60%
Dadra & Nagar Haveli	14.38	0.51%
Gujarat	13.32	0.47%
MUNDRA APL	11.48	0.41%
Chattisgarh	11.46	0.40%
UT Chandigarh	10.92	0.39%
Daman and Diu	10.38	0.37%
Delhi	9.76	0.34%
Assam	8.95	0.32%
Nagaland	7.97	0.28%
Sikkim	7.15	0.25%
Meghalaya	6.09	0.22%
LANKO_KONDAPALLY	6.01	0.21%
Arunachal Pradesh	3.15	0.11%
JINDAL POWER	3.12	0.11%
Mizoram	2.56	0.09%
Manipur	2.20	0.08%
Tripura	0.46	0.02%
Pondicherry	0.46	0.02%
LANKO_AMK	0.00	0.00%
Total	**2832.05**	**100.00%**
Volume of Export by top 5 States	**1593.22**	**56.26%**

Table-13: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY-WISE)		
Sr.No	**Name of the State/UT/Other Regional Entity**	**Total volume of net short-term transactions of electricity***
1	Maharashtra	898.86
2	Tamilnadu	720.07
3	Haryana	577.80
4	Punjab	439.43
5	Delhi	425.73
6	Rajasthan	396.36
7	Uttar Pradesh	315.92
8	Orissa	154.95
9	Jharkhand	147.25
10	Karnataka	103.35
11	Kerala	66.06
12	Bihar	54.07
13	UT Chandigarh	34.62
14	Dadra & Nagar Haveli	22.90
15	GOA	21.17
16	Uttarakhand	14.86
17	Meghalaya	11.36
18	Daman and Diu	6.45
19	Andhra Pradesh	6.36
20	Nagaland	5.85
21	Mizoram	0.11
22	Manipur	-4.97
23	Arunachal Pradesh	-10.48
24	Tripura	-15.26
25	Pondicherry	-18.11
26	Assam	-23.89
27	Sikkim	-36.90
28	MP	-49.45
29	MUNDRA APL	-53.04
30	West Bengal	-60.14
31	LANKO_KONDAPALLY	-100.98
32	LANKO_AMK	-154.17
33	DVC	-212.75
34	J & K	-303.42
35	Himachal Pradesh	-394.88
36	JINDAL POWER	-523.14
37	Gujarat	-661.87
38	Chattisgarh	-704.99
* 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-14: Details of Congestion in Power Exchanges for May 2010			
	Details of Congestion	**IEX**	**PXIL**
A	Unconstrained Cleared Volume* (MU)	598.04	80.83
B	Actual Cleared Volume and hence scheduled (MU)	591.86	78.53
C	Volume of electricity that could not be cleared as hence not scheduled because of congestion (MU) (A-B)	6.18	2.30
D	Volume of electricity that could not be cleared as % to Actual Cleared Volume	1%	3%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	7.53%	8.06%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	21%	23%
	6.00 - 12.00 hours	48%	47%
	12.00 - 18.00 hours	14%	13%
	18.00 - 24.00 hours	16%	17%

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