



Monthly Report on Short-term Transactions of Electricity in India

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Economics Division
Central Electricity Regulatory Commission
3rd & 4th Floor, Chanderlok Building
36, Janpath, New Delhi-110001.



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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 August 2011 is as under:

I: Volume of Short-term Transactions of Electricity

During the Month of August 2011, total electricity generation excluding generation from renewable and captive power plants in India was 72574.12 MUs (Table-1).

Of the total electricity generation, 9857.71 MUs (13.58%) were transacted through short-term, comprising of 6174.84 MUs (8.51%) through Bilateral (through traders and term-ahead contracts on Power Exchanges and directly between distribution companies), followed by 2406.67 MUs (3.32%) through UI and 1276.20 MUs (1.76%) through day ahead collective transactions on Power Exchanges (IEX and PXIL) (Table-1 & Chart-2).

Of the total short-term transactions, Bilateral constitute 62.64% (46.50% through traders and term-ahead contracts on Power Exchanges and 16.14% directly between distribution companies) followed by 24.41% through UI and 12.95% 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 41 trading licensees as on 31.8.2011, of which only 15 have engaged in trading during August

2011. Top 5 trading licenses had a share of 77.46% 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 0.25 indicates high concentration. The HHI computed for volume of electricity traded by trading licensees was 0.1819 for the month of August 2011, which indicates moderate concentration of market power (Table-2).

The volume of electricity transacted through IEX and PXIL in the day ahead market was 1176.54 MUs and 99.66 MUs respectively. The volume of total Buy bids and Sale bids was 1600.07 MUs and 1920.38 MUs respectively in IEX and 151.39 MUs and 298.78 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 (0.83 times) and in PXIL (0.51 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 55.97 MU in IEX (Table-6) and 4.26 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 ₹3.88/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 ₹3.88/kWh, ₹4.73/kWh and ₹3.61/kWh respectively. Minimum and Maximum sale price was ₹3.17/kWh and ₹6.04/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 was ₹1.59/kWh, ₹12.00/kWh and ₹2.89/kWh respectively in IEX and ₹1.50/kWh, ₹11.00/kWh and ₹3.01/kWh respectively in PXIL (Table-5).

The weighted average price of electricity transacted in term-ahead market through the weekly contracts in IEX was ₹4.24/kWh (Table-6) and in PXIL was ₹4.92/kWh (Table-7).

(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 ₹3.14/kWh in the NEW Grid and ₹2.68/kWh in the SR Grid. Minimum and Maximum price of UI was ₹0.00/kWh and ₹17.46/kWh respectively in the New Grid and ₹0.00/kWh and ₹12.22/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 Entity¹-Wise)

Of the total bilateral transactions, top 5 regional entities selling 47% of the volume are Gujarat, Himachal Pradesh, Jindal Power Ltd, Madhya Pradesh and Orissa. Top 5 regional entities purchasing 76% of the volume are Uttar Pradesh, Punjab, Tamil Nadu, Haryana and Delhi (Table-9 & 10).

Of the total Power Exchange transactions, top 5 regional entities selling 64% of the volume are Gujarat, Delhi, Madhya Pradesh, Jindal Power Ltd. and Haryana. Top 5 regional entities purchasing 77% of the volume are Punjab, Maharashtra, Tamil Nadu, Uttar Pradesh and West Bengal (Table-11 & 12).

Of the total UI transactions, top 5 regional entities under drawing 48% of the volume are Madhya Pradesh, Delhi, Gujarat, Punjab and Tamil Nadu. Top 5 regional entities overdrawing 54% of the volume are Uttar Pradesh, Rajasthan, Maharashtra, West Bengal and Andhra Pradesh (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, Madhya Pradesh, Himachal Pradesh, Jindal Power Ltd and Orissa and top 5 regional entities purchasing electricity are Uttar Pradesh, Punjab, Tamil Nadu, Haryana and Maharashtra.

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.

IV: Congestion² on Inter-state Transmission Corridor for Day-Ahead Market on Power Exchanges

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

In the month of August 2011, 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 3% and 14% of the actual cleared volume in IEX and PXIL, respectively. Although the congestion occurred in power exchanges, in percentage of time terms it was around 39% in IEX and 47% in PXIL.

² “Congestion” means a situation where the demand for transmission capacity exceeds the available transfer capability

³ “ Market Splitting” is a mechanism adopted by Power Exchange where the market is split in the event of transmission congestion, into predetermined (by NLDC) bid areas or zones, which are cleared individually at their respective area prices such that the energy balance in every bid area is reached based upon the demand and supply in individual bid areas and using the available transmission corridor capacity between various bid areas simultaneously”

As a result of this market splitting the price of electricity in the importing region, where demand for electricity is more than supply, becomes relatively higher than the price of electricity in the exporting region.

V: Inferences:

- The percentage of short-term transactions of electricity to total electricity generation was 13.58%.
- Of the total short-term transactions of electricity, 62.64% transacted through bilateral (through traders and term ahead contracts on power exchanges and directly by distribution companies) followed by 24.41% through UI and 12.95% through Power Exchanges.
- Top 5 trading licenses are having share of 77.46% in the total volume traded by all the trading licensees.
- The Herfindahl Hirschman Index computed for volume of electricity traded by trading licensees was 0.1819 indicates moderate concentration of market power.
- The price of electricity transacted through Trading Licensees (₹3.88/kWh) was relatively high when compared with the price of electricity transacted through Power Exchanges (₹2.89/kWh in IEX and ₹3.01/kWh in PXIL). The price of electricity transacted through UI was ₹3.14/kWh in the NEW Grid and ₹2.68/kWh in the SR Grid.
- The gap between the volume of sale bids and buy bids placed through power exchanges shows that there was less demand in IEX (1:0.83) and in PXIL (1:0.51) when compared with the supply offered through these exchanges.
- Top 5 regional entities selling electricity are Gujarat, Madhya Pradesh, Himachal Pradesh, Jindal Power Ltd and Orissa and top 5 regional entities purchasing electricity are Uttar Pradesh, Punjab, Tamil Nadu, Haryana and Maharashtra.
- The volume of electricity that could not be cleared due to congestion was about 3% and 14% of the actual cleared volume in IEX and PXIL, respectively. In percentage of time terms, congestion occurred 39% of the time (293 hrs in the month) in IEX and 47% of the time (351 hrs in the month) in PXIL.

Format-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA (MUs), AUGUST 2011						Total Electricity Generation (MUs) as given at CEA Website*
Date	Bilateral		Power Exchange (Area Clearing Volume# of day ahead market)		Unscheduled Interchange (Over Drawl+Under Generation)	
	Through Traders and PXs**	Direct	IEX	PXI		
01-Aug-11	150.33	52.10	27.63	7.07	70.20	2390.72
02-Aug-11	148.14	52.10	28.37	6.28	70.13	2267.80
03-Aug-11	150.96	52.10	31.73	5.40	80.32	2502.32
04-Aug-11	146.86	53.62	28.33	5.67	67.32	2441.82
05-Aug-11	146.23	53.98	28.89	2.19	71.40	2444.12
06-Aug-11	150.59	52.58	27.86	2.46	78.85	2412.90
07-Aug-11	155.21	50.04	24.64	1.08	86.96	2325.55
08-Aug-11	155.82	51.99	26.57	2.54	85.41	2369.71
09-Aug-11	156.64	51.99	29.45	1.99	84.31	2347.47
10-Aug-11	155.86	51.99	32.36	2.72	76.97	2330.30
11-Aug-11	153.72	52.41	34.30	3.69	77.81	2339.76
12-Aug-11	153.89	51.99	36.16	3.41	84.33	2321.72
13-Aug-11	155.57	49.69	39.67	3.60	94.45	2267.80
14-Aug-11	151.57	49.69	41.20	3.56	77.72	2239.71
15-Aug-11	140.85	49.33	31.76	2.47	95.57	2091.31
16-Aug-11	130.90	52.06	39.28	2.65	95.11	2165.36
17-Aug-11	130.65	52.76	54.26	3.28	81.85	2317.68
18-Aug-11	138.46	53.31	54.55	3.94	73.76	2359.00
19-Aug-11	141.75	53.31	44.97	1.95	68.40	2371.47
20-Aug-11	142.25	52.52	44.47	2.86	70.80	2359.18
21-Aug-11	142.37	49.50	43.96	3.39	75.91	2328.30
22-Aug-11	157.09	49.51	46.13	3.17	78.18	2365.69
23-Aug-11	156.97	52.73	50.01	3.18	77.73	2405.26
24-Aug-11	162.25	52.77	37.45	1.60	71.18	2359.37
25-Aug-11	146.02	50.41	46.07	3.09	70.12	2389.08
26-Aug-11	144.24	50.41	38.86	2.46	69.14	2371.33
27-Aug-11	149.56	52.61	47.45	2.53	74.49	2357.34
28-Aug-11	144.48	49.27	42.51	2.35	76.60	2258.19
29-Aug-11	143.67	50.43	40.61	2.83	70.71	2333.28
30-Aug-11	139.38	48.30	40.47	3.52	72.46	2333.28
31-Aug-11	141.82	45.28	36.57	2.75	78.47	2407.30
Total	4584.09	1590.75	1176.54	99.66	2406.67	72574.12

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), AUGUST 2011

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**
01-Aug-11	1.95	8.50	2.90	2.09	8.01	2.95	1.55	12.22	4.51	0.78	5.44	2.94	
02-Aug-11	2.00	8.61	2.98	2.19	11.00	3.03	2.17	12.22	5.78	0.62	5.91	3.15	
03-Aug-11	2.20	9.00	3.51	2.00	8.76	3.10	1.09	12.22	4.14	0.00	4.97	2.85	
04-Aug-11	2.60	9.10	3.44	2.75	8.96	3.63	0.62	12.22	3.80	0.78	4.97	2.74	
05-Aug-11	2.19	9.10	3.54	2.08	9.10	3.25	1.40	12.22	4.29	0.00	6.38	2.96	
06-Aug-11	2.20	9.00	3.32	2.08	8.71	3.50	1.09	7.79	3.29	0.16	5.91	2.62	
07-Aug-11	2.00	4.12	2.54	1.50	4.01	2.34	1.40	12.22	3.78	0.47	4.50	2.13	
08-Aug-11	2.30	4.50	3.12	2.19	5.00	3.15	1.40	12.22	3.62	0.47	4.50	2.74	
09-Aug-11	2.50	7.00	3.40	2.40	6.00	3.34	0.47	12.22	3.35	0.93	5.91	2.87	
10-Aug-11	2.40	5.00	3.21	2.19	4.90	3.18	1.09	12.22	3.36	0.93	8.26	3.33	
11-Aug-11	2.39	5.00	3.06	2.00	4.30	2.97	0.78	12.22	3.84	1.24	8.26	4.03	
12-Aug-11	2.24	5.00	3.02	2.00	4.17	2.89	0.78	5.91	2.91	1.09	12.22	4.22	
13-Aug-11	2.14	5.00	3.02	2.00	4.00	2.80	0.00	3.41	1.53	0.00	7.79	3.68	
14-Aug-11	1.99	4.40	2.72	2.00	3.50	2.52	0.00	6.85	1.26	0.31	7.32	3.48	
15-Aug-11	1.59	3.33	2.21	2.00	3.46	2.44	0.00	7.79	0.86	0.78	7.79	3.92	
16-Aug-11	1.59	4.17	2.55	2.00	5.01	2.80	0.00	17.46	4.19	0.47	12.22	3.67	
17-Aug-11	2.25	4.50	2.87	2.00	5.01	2.84	0.31	12.22	2.44	1.09	7.32	3.54	
18-Aug-11	2.00	5.00	2.69	2.00	6.01	3.29	0.31	12.22	3.02	0.00	4.50	2.53	
19-Aug-11	2.10	5.21	2.90	1.98	5.21	2.76	0.31	12.22	2.92	0.00	4.03	2.28	
20-Aug-11	2.10	5.41	2.85	2.00	5.41	2.84	0.00	12.22	3.22	0.00	3.88	2.29	
21-Aug-11	2.00	5.00	2.51	2.00	5.00	2.86	0.00	7.79	2.66	0.00	4.97	2.01	
22-Aug-11	1.89	9.15	2.70	2.00	6.00	2.92	0.93	12.22	4.03	0.31	6.38	2.14	
23-Aug-11	2.10	12.00	2.87	2.00	10.00	3.13	1.09	12.22	3.91	0.00	6.85	2.36	
24-Aug-11	2.10	9.00	3.26	1.98	9.36	3.47	0.16	5.44	2.12	0.16	5.91	1.94	
25-Aug-11	2.09	7.50	3.06	2.00	6.01	3.04	0.31	12.22	2.39	0.31	5.44	2.05	
26-Aug-11	1.99	6.01	2.69	2.00	6.01	2.86	0.78	12.22	3.16	0.47	4.03	2.17	
27-Aug-11	1.95	6.01	2.64	2.00	6.01	3.00	0.16	5.44	2.37	0.00	4.50	1.95	
28-Aug-11	1.82	4.80	2.63	2.00	7.26	2.98	0.00	7.32	2.21	0.00	3.72	1.40	
29-Aug-11	1.89	5.00	2.76	2.00	4.99	3.00	0.00	4.97	1.92	0.00	3.26	1.29	
30-Aug-11	1.80	6.00	2.72	2.00	6.00	2.96	0.16	6.85	3.12	0.00	3.72	1.74	
31-Aug-11	1.90	5.50	2.84	2.00	6.30	2.99	0.00	12.22	3.50	0.62	5.44	2.20	
	1.59#	12.00#	2.89*	1.50#	11.00#	3.01*	0.00#	17.46#	3.14	0.00#	12.22#	2.68	

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 represents 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), AUGUST 2011

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	0.00	1324.46	1324.46	33.80	301.36	267.56	140.69	66.47	-74.22	1517.80
Haryana	7.10	617.92	610.82	55.39	55.34	-0.06	68.07	115.88	47.81	658.58
Rajasthan	379.41	6.00	-373.41	48.53	69.02	20.49	28.03	311.55	283.52	-69.40
Delhi	42.75	505.84	463.09	185.08	3.11	-181.97	176.98	8.85	-168.14	112.99
Uttar Pradesh	54.97	1391.60	1336.63	0.00	144.41	144.41	63.73	346.92	283.19	1764.22
Uttarakhand	96.19	0.00	-96.19	18.36	0.40	-17.97	58.38	70.23	11.85	-102.31
Himachal Pradesh	823.57	1.10	-822.47	0.00	0.00	0.00	14.93	59.04	44.11	-778.36
J & K	279.70	0.00	-279.70	5.90	0.00	-5.90	79.93	32.13	-47.81	-333.41
UT Chandigarh	0.00	47.62	47.62	20.24	0.00	-20.24	18.09	0.60	-17.48	9.89
MP	420.33	74.40	-345.93	147.03	16.40	-130.62	349.35	11.80	-337.54	-814.10
Maharashtra	0.00	213.27	213.27	28.55	224.94	196.39	55.05	228.22	173.18	582.83
Gujarat	947.98	4.28	-943.70	346.91	43.64	-303.27	164.67	46.12	-118.55	-1365.52
Chattisgarh	252.61	31.99	-220.61	44.82	0.00	-44.82	37.18	77.02	39.84	-225.60
Daman and Diu	0.00	16.37	16.37	0.00	0.00	0.00	5.12	7.70	2.58	18.95
Dadra & Nagar Haveli	0.00	23.81	23.81	0.00	35.69	35.69	2.75	22.50	19.75	79.25
Andhra Pradesh	166.74	447.59	280.85	43.20	27.90	-15.31	27.73	118.95	91.23	356.77
Karnataka	245.77	200.55	-45.22	23.06	21.14	-1.92	71.11	34.59	-36.52	-83.66
Kerala	20.62	194.76	174.14	0.09	3.82	3.74	8.58	64.90	56.32	234.20
Tamilnadu	183.01	862.84	679.83	0.00	169.67	169.67	98.49	33.73	-64.77	784.74
Pondicherry	0.00	0.00	0.00	0.00	0.00	0.00	29.21	0.75	-28.46	-28.46
West Bengal	132.90	97.59	-35.32	7.86	141.50	133.64	27.72	168.09	140.37	238.69
Orissa	395.55	0.00	-395.55	12.17	0.00	-12.17	67.67	31.61	-36.06	-443.78
Bihar	0.00	0.00	0.00	0.00	0.00	0.00	61.54	14.82	-46.71	-46.71
Jharkhand	0.00	74.40	74.40	0.00	2.07	2.07	72.65	4.44	-68.21	8.26
Sikkim	59.94	7.92	-52.02	15.34	0.00	-15.34	2.09	3.13	1.05	-66.31
DVC	106.01	0.00	-106.01	0.15	0.00	-0.15	21.34	100.65	79.31	-26.85
Arunachal Pradesh	10.54	0.00	-10.54	0.00	0.00	0.00	11.23	2.60	-8.63	-19.17
Assam	0.00	0.00	0.00	14.06	15.69	1.63	25.34	24.23	-1.11	0.52
Manipur	17.98	0.00	-17.98	0.00	0.00	0.00	28.10	0.04	-28.05	-46.03
Meghalaya	0.00	0.00	0.00	5.85	0.00	-5.85	12.74	0.97	-11.78	-17.63
Mizoram	0.00	0.00	0.00	14.84	0.00	-14.84	3.05	2.91	-0.14	-14.98
Nagaland	46.19	0.00	-46.19	0.00	0.00	0.00	0.45	9.85	9.40	-36.79
Tripura	0.00	3.02	3.02	5.81	0.11	-5.71	7.67	5.56	-2.11	-4.80
GOA	0.00	27.53	27.53	50.29	0.00	-50.29	29.04	8.57	-20.47	-43.24
JINDAL POWER	466.74	0.00	-466.74	70.68	0.00	-70.68	1.75	20.80	19.04	-518.38
LANKO_AMK	249.67	0.00	-249.61	3.05	0.00	-3.05	48.54	9.64	-38.90	-291.56
LANKO_KONDAPALLY	206.54	0.00	-206.54	0.14	0.00	-13.21	1.79	7.04	5.25	-214.49
STERLITE	364.22	0.00	-364.22	1.76	0.00	-1.76	1.26	64.07	62.81	-303.17
AD HYDRO	80.20	0.00	-80.20	13.27	0.00	-13.27	5.55	10.22	4.67	-88.80
KARCHAM WANGTOO	393.86	0.00	-393.86	46.92	0.00	-46.92	11.23	14.72	3.49	-437.29

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), AUGUST 2011

Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	6174.84	62.64%	8.51%
	(i) Through Traders and PXs	4584.09	46.50%	6.32%
	(ii) Direct	1590.75	16.14%	2.19%
2	Through Power Exchanges	1276.20	12.95%	1.76%
	IEX	1176.54	11.94%	1.62%
	PXIL	99.66	1.01%	0.14%
3	Through UI	2406.67	24.41%	3.32%
	Total	9857.71	100.00%	13.58%
	Total Generation	72574.12	–	–

Source: NLDC

Chart-1: Volume of Short-term Transactions of Electricity, August 2011

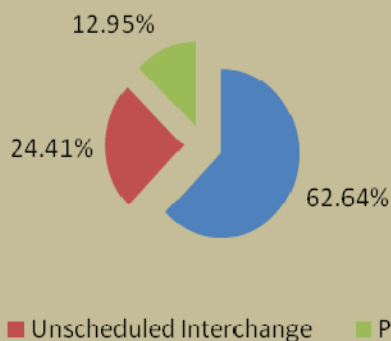
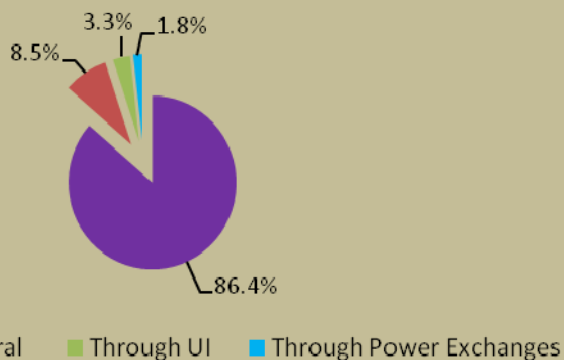


Chart-2: Volume of various kinds of Electricity Transactions in Total Electricity Generation, August 2011



**Chart-3: Volume of Short-term Transactions of Electricity, August 2011
(Day-wise)**

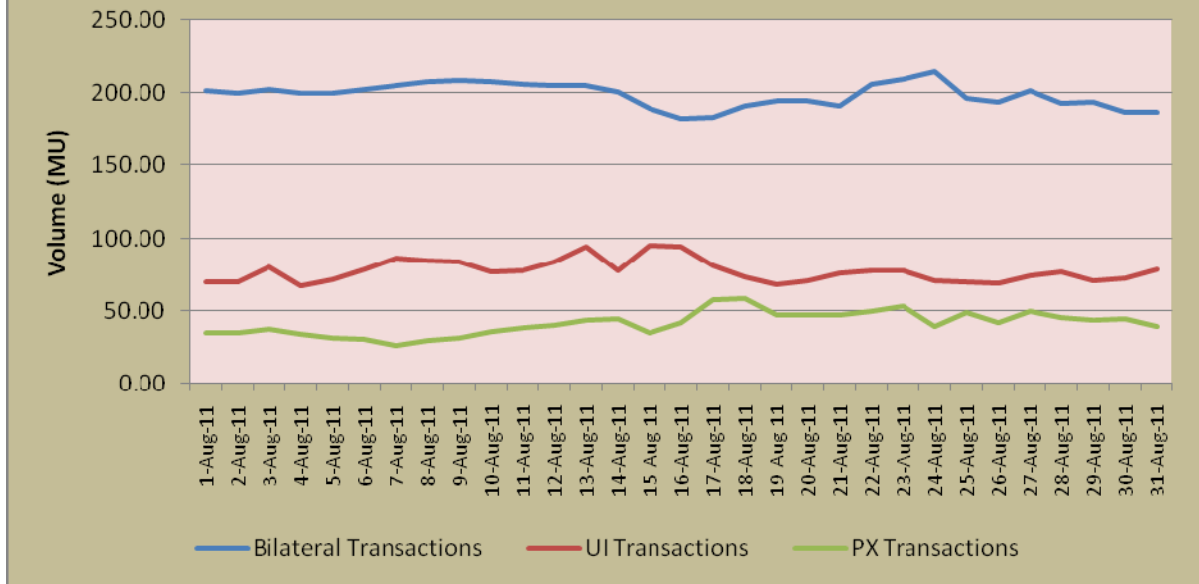


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, AUGUST 2011

Sr.No	Name of the Trading Licensee	% Share in total Volume transacted by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd	35.62%	0.1269
2	NTPC Vidyut Vyapar Nigam Ltd	12.53%	0.0157
3	Tata Power Trading Company (P) Ltd	10.93%	0.0119
4	National Energy Trading & Services Ltd	10.28%	0.0106
5	Reliance Energy Trading (P) Ltd	8.10%	0.0066
6	Adani Enterprises Ltd	7.29%	0.0053
7	JSW Power Trading Company Ltd	5.33%	0.0028
8	GMR Energy Trading Ltd	2.69%	0.0007
9	Shree Cement Ltd.	2.47%	0.0006
10	Instinct Infra & Power Ltd	2.25%	0.0005
11	Knowledge Infrastructure Systems (P) Ltd	1.62%	0.0003
12	Global Energy (P) Ltd.	0.51%	0.0000
13	RPG Power Trading Company Ltd.	0.18%	0.0000
14	Jaiprakash Associates Limited	0.17%	0.0000
15	Jindal Power Trading Company Ltd.	0.03%	0.0000
	TOTAL	100%	0.1819
	Top 5 trading licensees	77.46%	

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

Source: Information submitted by trading licensees

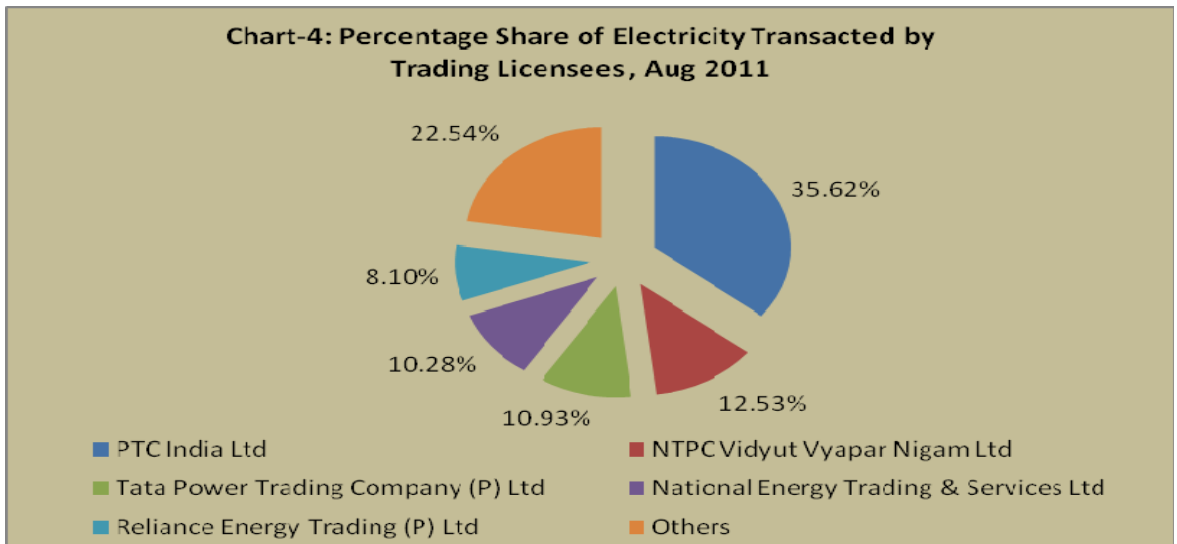


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, AUGUST 2011		
Sr.No		Sale Price of Traders (₹/kWh)
1	Minimum	3.17
2	Maximum	6.04
3	Weighted Average	3.88

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (Time-wise), AUGUST 2011		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	3.88
2	PEAK	4.73
3	OFF PEAK	3.61

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, AUGUST 2011			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	1.59	1.50
2	Maximum	12.00	11.00
3	Weighted Average	2.89	3.01

Source: Information submitted by IEX and PXIL

Table-6: Volume and Price of Electricity in Term Ahead Market of IEX, AUGUST 2011			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra Day Contracts	1.28	4.54
2	Day Ahead Contingency Contracts	0.45	4.70
3	Weekly Contracts	55.97	4.24
	Total	57.70	

Source: IEX

Table-7: Volume and Price of Electricity in Term Ahead Market of PXIL, AUGUST 2011			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Weekly Contracts	4.26	4.92
	Total	4.26	

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH UI, AUGUST 2011			
Sr.No		Price in NEW Grid (₹/kWh)	Price in SR Grid (₹/kWh)
1	Minimum	0.00	0.00
2	Maximum	17.46	12.22
3	Average	3.14	2.68

Source: NLDC

Chart-5: Price of Short-term Transactions of Electricity, August 2011

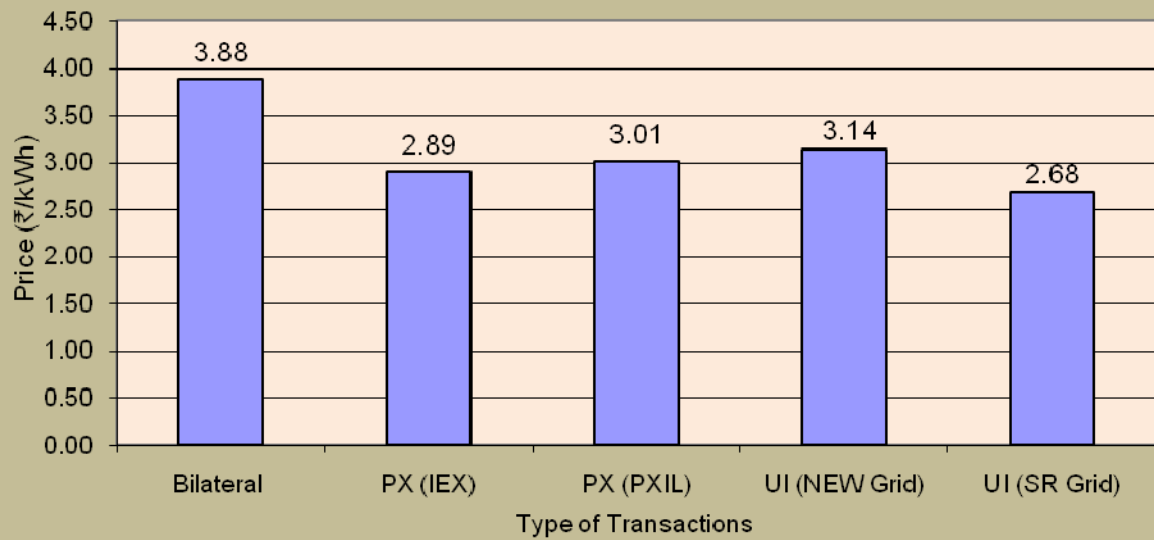


Chart-6: Price of Short-term Transactions of Electricity, August 2011 (Day-wise)

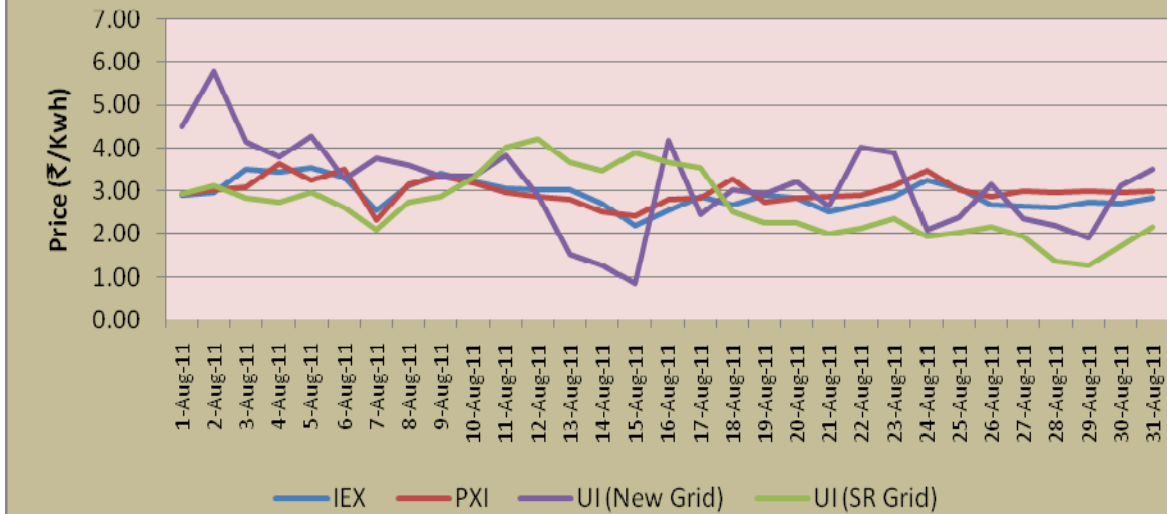


Table-9: VOLUME OF ELECTRICITY SALE THROUGH BILATERAL, AUGUST 2011		
Name of the State/UT/Other Regional Entity	Volume of Sale (MUs)	% of Volume
Gujarat	947.98	14.69%
Himachal Pradesh	823.57	12.77%
JINDAL POWER	466.74	7.24%
MP	420.33	6.52%
Orissa	395.55	6.13%
KARCHAM WANGTOO	393.86	6.11%
Rajasthan	379.41	5.88%
STERLITE	364.22	5.65%
J & K	279.70	4.34%
Chattisgarh	252.61	3.92%
LANKO_AMK	249.67	3.87%
Karnataka	245.77	3.81%
LANKO_KONDAPALLY	206.54	3.20%
Tamilnadu	183.01	2.84%
Andhra Pradesh	166.74	2.58%
West Bengal	132.90	2.06%
DVC	106.01	1.64%
Uttarakhand	96.19	1.49%
AD HYDRO	80.20	1.24%
Sikkim	59.94	0.93%
Uttar Pradesh	54.97	0.85%
Nagaland	46.19	0.72%
Delhi	42.75	0.66%
Kerala	20.62	0.32%
Manipur	17.98	0.28%
Arunachal Pradesh	10.54	0.16%
Haryana	7.10	0.11%
Total	6451.07	100.00%
Volume of sale by top 5 States	3054.16	47.34%

Table-10: VOLUME OF ELECTRICITY PURCHASE THROUGH BILATERAL, AUGUST 2011		
Name of the State/UT/Other Regional Entity	Volume of Purchase (MUs)	% of Volume
Uttar Pradesh	1391.60	22.54%
Punjab	1324.46	21.45%
Tamilnadu	862.84	13.97%
Haryana	617.92	10.01%
Delhi	505.84	8.19%
Andhra Pradesh	447.59	7.25%
Maharashtra	213.27	3.45%
Karnataka	200.55	3.25%
Kerala	194.76	3.15%
West Bengal	97.59	1.58%
MP	74.40	1.20%
Jharkhand	74.40	1.20%
UT Chandigarh	47.62	0.77%
Chattisgarh	31.99	0.52%
GOA	27.53	0.45%
Dadra & Nagar Haveli	23.81	0.39%
Daman and Diu	16.37	0.27%
Sikkim	7.92	0.13%
Rajasthan	6.00	0.10%
Gujarat	4.28	0.07%
Tripura	3.02	0.05%
Himachal Pradesh	1.10	0.02%
Total	6174.84	100.00%
Volume of sale by top 5 States	4702.66	76.16%

Table-11: VOLUME OF ELECTRICITY SALE THROUGH POWER EXCHANGES, AUGUST 2011		
Name of the State/UT/Other Regional Entity	Volume of Sale (MUs)	% of Volume
Gujarat	346.91	27.46%
Delhi	185.08	14.65%
MP	147.03	11.64%
JINDAL POWER	70.68	5.60%
Haryana	55.39	4.39%
GOA	50.29	3.98%
Rajasthan	48.53	3.84%
KARCHAM WANGTOO	46.92	3.71%
Chattisgarh	44.82	3.55%
Andhra Pradesh	43.20	3.42%
Punjab	33.80	2.68%
Maharashtra	28.55	2.26%
Karnataka	23.06	1.83%
UT Chandigarh	20.24	1.60%
Uttarakhand	18.36	1.45%
Sikkim	15.34	1.21%
Mizoram	14.84	1.17%
Assam	14.06	1.11%
AD HYDRO	13.27	1.05%
Orissa	12.17	0.96%
West Bengal	7.86	0.62%
J & K	5.90	0.47%
Meghalaya	5.85	0.46%
Tripura	5.81	0.46%
LANKO_AMK	3.05	0.24%
STERLITE	1.76	0.14%
DVC	0.15	0.01%
LANKO_KONDAPALLY	0.14	0.01%
Kerala	0.09	0.01%
Total	1263.16	100.00%
Volume of sale by top 5 States	805.09	63.74%

Table-12: VOLUME OF ELECTRICITY PURCHASE THROUGH POWER EXCHANGES, AUGUST 2011		
Name of the State/UT/Other Regional Entity	Volume of Purchase (MUs)	% of Volume
Punjab	301.36	23.61%
Maharashtra	224.94	17.63%
Tamilnadu	169.67	13.29%
Uttar Pradesh	144.41	11.32%
West Bengal	141.50	11.09%
Rajasthan	69.02	5.41%
Haryana	55.34	4.34%
Gujarat	43.64	3.42%
Dadra & Nagar Haveli	35.69	2.80%
Andhra Pradesh	27.90	2.19%
Karnataka	21.14	1.66%
MP	16.40	1.29%
Assam	15.69	1.23%
Kerala	3.82	0.30%
Delhi	3.11	0.24%
Jharkhand	2.07	0.16%
Uttarakhand	0.40	0.03%
Tripura	0.11	0.01%
Total	1276.20	100.00%
Volume of purchase by top 5 States	981.88	76.94%

Table-13: VOLUME OF ELECTRICITY EXPORT THROUGH UI, AUGUST 2011		
Name of the State/UT/Other Regional Entity	Volume of Export (MUs)	% of Volume
MP	349.35	18.02%
Delhi	176.98	9.13%
Gujarat	164.67	8.49%
Punjab	140.69	7.26%
Tamilnadu	98.49	5.08%
J & K	79.93	4.12%
Jharkhand	72.65	3.75%
Karnataka	71.11	3.67%
Haryana	68.07	3.51%
Orissa	67.67	3.49%
Uttar Pradesh	63.73	3.29%
Bihar	61.54	3.17%
Uttarakhand	58.38	3.01%
Maharashtra	55.05	2.84%
LANKO_AMK	48.54	2.50%
Chattisgarh	37.18	1.92%
Pondicherry	29.21	1.51%
GOA	29.04	1.50%
Manipur	28.10	1.45%
Rajasthan	28.03	1.45%
Andhra Pradesh	27.73	1.43%
West Bengal	27.72	1.43%
Assam	25.34	1.31%
DVC	21.34	1.10%
UT Chandigarh	18.09	0.93%
Himachal Pradesh	14.93	0.77%
Meghalaya	12.74	0.66%
KARCHAM WANGTOO	11.23	0.58%
Arunachal Pradesh	11.23	0.58%
Kerala	8.58	0.44%
Tripura	7.67	0.40%
AD HYDRO	5.55	0.29%
Daman and Diu	5.12	0.26%
Mizoram	3.05	0.16%
Dadra & Nagar Haveli	2.75	0.14%
Sikkim	2.09	0.11%
LANKO_KONDAPALLY	1.79	0.09%
JINDAL POWER	1.75	0.09%
STERLITE	1.26	0.06%
Nagaland	0.45	0.02%
Total	1938.83	100.00%
Volume of Export by top 5 States	930.19	47.98%

Table-14: VOLUME OF ELECTRICITY IMPORT THROUGH UI, AUGUST 2011		
Name of the State/UT/Other Regional Entity	Volume of Import (MUs)	% of Volume
Uttar Pradesh	346.92	16.05%
Rajasthan	311.55	14.41%
Maharashtra	228.22	10.56%
West Bengal	168.09	7.77%
Andhra Pradesh	118.95	5.50%
Haryana	115.88	5.36%
DVC	100.65	4.66%
Chattisgarh	77.02	3.56%
Uttarakhand	70.23	3.25%
Punjab	66.47	3.07%
Kerala	64.90	3.00%
STERLITE	64.07	2.96%
Himachal Pradesh	59.04	2.73%
Gujarat	46.12	2.13%
Karnataka	34.59	1.60%
Tamilnadu	33.73	1.56%
J & K	32.13	1.49%
Orissa	31.61	1.46%
Assam	24.23	1.12%
Dadra & Nagar Haveli	22.50	1.04%
JINDAL POWER	20.80	0.96%
Bihar	14.82	0.69%
KARCHAM WANGTOO	14.72	0.68%
MP	11.80	0.55%
AD HYDRO	10.22	0.47%
Nagaland	9.85	0.46%
LANKO_AMK	9.64	0.45%
Delhi	8.85	0.41%
GOA	8.57	0.40%
Daman and Diu	7.70	0.36%
LANKO_KONDAPALLY	7.04	0.33%
Tripura	5.56	0.26%
Jharkhand	4.44	0.21%
Sikkim	3.13	0.14%
Mizoram	2.91	0.13%
Arunachal Pradesh	2.60	0.12%
Meghalaya	0.97	0.04%
Pondicherry	0.75	0.03%
UT Chandigarh	0.60	0.03%
Manipur	0.04	0.00%
Total	2161.92	100.00%
Volume of Export by top 5 States	1173.73	54.29%

Table-15: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY-WISE), AUGUST 2011

Sr.No	Name of the State/UT/Other Regional Entity	Total volume of net short-term transactions of electricity*
1	Uttar Pradesh	1764.22
2	Punjab	1517.80
3	Tamilnadu	784.74
4	Haryana	658.58
5	Maharashtra	582.83
6	Andhra Pradesh	356.77
7	West Bengal	238.69
8	Kerala	234.20
9	Delhi	112.99
10	Dadra & Nagar Haveli	79.25
11	Daman and Diu	18.95
12	UT Chandigarh	9.89
13	Jharkhand	8.26
14	Assam	0.52
15	Tripura	-4.80
16	Mizoram	-14.98
17	Meghalaya	-17.63
18	Arunachal Pradesh	-19.17
19	DVC	-26.85
20	Pondicherry	-28.46
21	Nagaland	-36.79
22	GOA	-43.24
23	Manipur	-46.03
24	Bihar	-46.71
25	Sikkim	-66.31
26	Rajasthan	-69.40
27	Karnataka	-83.66
28	AD HYDRO	-88.80
29	Uttarakhand	-102.31
30	LANKO_KONDAPALLY	-214.49
31	Chattisgarh	-225.60
32	LANKO_AMK	-291.56
33	STERLITE	-303.17
34	J & K	-333.41
35	KARCHAM WANGTOO	-437.29
36	Orissa	-443.78
37	JINDAL POWER	-518.38
38	Himachal Pradesh	-778.36
39	MP	-814.10
40	Gujarat	-1365.52
* Total volume of net short-term transactions of electricity includes net of transactions of electricity through bilateral, power exchange and UI		
(-) indicates sale and (+) indicates purchase		

Table-16: DETAILS OF CONGESTION IN POWER EXCHANGES, AUGUST 2011			
	Details of Congestion	IEX	PXIL
A	Unconstrained Cleared Volume* (MUs)	1176.54	113.85
B	Actual Cleared Volume and hence scheduled (MUs)	1216.11	99.66
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	39.58	14.19
D	Volume of electricity that could not be cleared as % to Actual Cleared Volume	3%	14%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	39%	47%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	27%	25%
	6.00 - 12.00 hours	30%	26%
	12.00 - 18.00 hours	20%	21%
	18.00 - 24.00 hours	23%	27%
<i>* This power would have been scheduled had there been no congestion.</i>			