

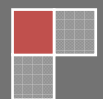


Monthly Report on Short-term Transactions of Electricity in India

July, 2012



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Abbreviations

Abbreviation	Expanded Version
ACBIL	ACB India Limited
ACP	Area Clearing Price
ACV	Area Clearing Volume
AD HYDRO	AD Hydro Power Limited
BALCO	Bharat Aluminium Company Limited
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CGPL	Coastal Gujarat Power Ltd
DCPP	Donga Mahua Captive Power Plant
DVC	Damodar Valley Corporation
IEX	Indian Energy Exchange Limited
JINDAL POWER	Jindal Power Limited
KARCHAM WANGTOO	Jaypee Karcham Hydro Corporation Limited
LANKO_AMK	Lanco Amarkantak Power Private Limited
LANKO_KONDAPALLY	Lanco Kondapalli Power Limited
Meenakshi	Meenakshi Energy Private Limited
MP	Madhya Pradesh
MUs	Million Units
NEEPCO Stations	North Eastern Electric Power Corporation Limited Stations
NEW Grid	North, East, North-East and Western Regional Grid
NHPC Stations	National Hydro Electric Power Corporation Limited Stations
NLDC	National Load Despatch Centre
NJPC	Nathpa Jhakri Hydroelectric Power Station
NSPCL	NTPC - SAIL Power Company Private Limited
PX	Power Exchange
PXIL	Power Exchange India Limited
RGPPL	Ratnagiri Gas and Power Private Limited
RLDC	Regional Load Despatch Centre
RTC	Round - the- Clock
SIMHAPURI	Simhapuri Energy Private Limited
SHREE CEMENT	Shree Cement Limited
SR Grid	Southern Regional Grid
STERLITE	Sterlite Energy Limited
UI	Unscheduled Interchange
UT	Union Territory

Introduction

A well-functioning electricity market requires an effective market monitoring process. As part of the market monitoring process, the monthly report on short-term transactions of electricity, is being prepared and posted on the website of CERC since August 2008. Here, “short-term transactions of electricity” refers to the contracts of less than one year period, for electricity transacted through Inter-State Trading Licensees and directly by the Distribution Licensees, Power Exchanges (Indian Energy Exchange Ltd (IEX) and Power Exchange India Ltd (PXIL)), and Unscheduled Interchange (UI). The objectives of the report are: (i) to observe the trends in volume and price of the short-term transactions of electricity; (ii) to analyse competition among the market players; and (iii) to disclose/disseminate all relevant market information. The analysis of the report for the month of July 2012 is as under:

I: Volume of Short-term Transactions of Electricity

During the month of July 2012, total electricity generation excluding generation from renewable and captive power plants in India was 76091.19 MUs (Table-1).

Of the total electricity generation, 9976.66 MUs (13.11%) were transacted through short-term, comprising of 5504.12 MUs (7.23%) through Bilateral (through traders and term-ahead contracts on Power Exchanges and directly between distribution companies), followed by 2900.29MUs (3.81%) through UI and 1572.25 MUs (2.07%) through day ahead collective transactions on Power Exchanges (IEX and PXIL) (Table-1 & Figure-2).

Of the total short-term transactions, Bilateral constitute 55.17% (37.75% through traders and term-ahead contracts on Power Exchanges and 17.42% directly between distribution companies) followed by 29.07% through UI and 15.76% through day ahead collective transactions on Power Exchanges (Table-1& Figure-1). Daily volume of short-term transactions is shown in Figure-3.

The percentage share of electricity traded by each trading licensee in the total volume of electricity traded by all trading licensees is provided in Table-2 & Figure-4. The trading licensees undertake electricity transactions through bilateral and through power exchanges. Here, the volume of electricity transacted by the trading licensees includes bilateral transactions and the transactions undertaken through power exchanges. There were 43 trading licensees as on 31.07.2012, of which only 18 have engaged in trading during July

2012. Top 5 trading licenses had a share of 77.53% in the total volume traded by all the licensees.

Herfindahl-Hirschman Index (HHI) has been used for measuring the competition among the trading licensees. Increase in the HHI generally indicates a decrease in competition and an increase of market power, whereas decrease indicates the opposite. The HHI between 0.15 - 0.25 indicates moderate concentration of market power. The HHI computed for volume of electricity traded by trading licensees was 0.1813 for the month of July 2012, which indicates moderate concentration of market power (Table-2).

The volume of electricity transacted through IEX and PXIL in the day ahead market was 1519.32 MUs and 52.93 MUs respectively. The volume of total Buy bids and Sale bids was 3295.23 MUs and 2098.05 MUs respectively in IEX and 173.86 MUs and 179.02 MUs respectively in PXIL. The gap between the volume of buy bids and sale bids placed through power exchanges shows that there was more demand in IEX (1.57 times) and less demand in PXIL (0.97 times) when compared with the supply offered through these exchanges.

The volume of electricity transacted in term-ahead market through weekly contracts was 0.32 MUs in IEX (Table-6).

II: Price of Short-term Transactions of Electricity

(i) Price of electricity transacted through Traders: Weighted average sale price has been computed for the electricity transacted through traders and it was ₹4.03/kWh. Weighted average sale price was also computed for the transactions during Round the Clock (RTC), Peak, and Off-Peak periods separately, and the sale prices were ₹4.02/kWh, ₹5.81/kWh and ₹4.69/kWh respectively. Minimum and Maximum sale prices were ₹2.90/kWh and ₹7.56/kWh respectively (Table-3 & 4).

(ii) Price of electricity transacted Through Power Exchanges: Minimum, Maximum and Weighted Average Prices have been computed for the volume transacted through IEX and PXIL separately. The Minimum, Maximum and Weighted Average prices were ₹1.20/kWh, ₹19.00/kWh and ₹4.51/kWh respectively in IEX and ₹0.99/kWh, ₹20.00/kWh and ₹4.54/kWh respectively in PXIL (Table-5).

The weighted average price of electricity transacted in term-ahead market through the weekly contracts was ₹4.10/kWh in IEX (Table-6).

(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 ₹6.13/kWh in the NEW Grid and ₹5.09/kWh in the SR Grid. Minimum and Maximum UI prices were ₹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 prices of electricity transacted through trading licensees, power exchanges and UI and their comparison is shown in Figure-5 & 6.

III: Volume of Short-term Transactions of Electricity (Regional Entity¹-Wise)

Of the total bilateral transactions, top 5 regional entities sold 50.30% of the volume, and these were Gujarat, Jaypee Karcham Hydro Corporation Ltd., Jindal Power Ltd., Sterlite Energy Ltd. and Madhya Pradesh. Top 5 regional entities purchased 64.55% of the volume, and these were Punjab, Haryana, Delhi, Tamilnadu and Andhra Pradesh (Table-9 & 10).

Of the total Power Exchange transactions, top 5 regional entities sold 52.89% of the volume, and these were Himachal Pradesh, Jaypee Karcham Hydro Corporation Ltd., Lanco Amarkantak Ltd., Karnataka and NHPC Stations. Top 5 regional entities purchased 75.26% of the volume, and these were Gujarat, Rajasthan, Punjab, Uttar Pradesh and Haryana (Table-11 & 12).

Of the total UI transactions, top 5 regional entities underdrew 44.86% of the volume, and these were Gujarat, Delhi, Madhya Pradesh, Maharashtra and Maithon Power Ltd. Top 5 regional entities overdrew 69.76% of the volume, and these were Uttar Pradesh, Haryana, Rajasthan, Punjab and Kerala (Table-13 & 14).

Regional entity-wise total volume of net short-term transactions of electricity i.e. volume of net transactions through bilateral, power exchanges and UI is shown in Table-15. Top 5 electricity selling regional entities were Jaypee Karcham Wangtoo Hydro Corporation Ltd., Himachal Pradesh, Jindal Power Ltd, Gujarat and Madhya Pradesh. Top 5 electricity purchasing regional entities were Punjab, Uttar Pradesh, Haryana, Kerala and Tamilnadu.

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 July 2012, congestion occurred in both the power exchanges, the details of which are shown in Table-16. The volume of electricity that could not be cleared due to congestion and could not be transacted through power exchanges is the difference between unconstrained cleared volume (volume of electricity that would have been scheduled, had there been no congestion) and actual cleared volume.

During the month, the volume of electricity that could not be cleared in the power exchanges due to congestion was 5.07% and 49.80% of the actual cleared volume in IEX and PXIL, respectively. In percentage of time terms, it was 79.77% in IEX and 84.71% in PXIL respectively.

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 13.11%.
- Of the total short-term transactions of electricity, 55.17% was transacted through bilateral (through traders and term ahead contracts on power exchanges and directly by distribution companies), followed by 29.07% through UI and 15.76% through Power Exchanges.
- Top 5 trading licensees had a share of 77.53% in the total volume traded by all the trading licensees.
- The Herfindahl Hirschman Index computed for volume of electricity traded by trading licensees was 0.1813, indicating moderate concentration of market power.
- The price of electricity transacted through trading licensees (₹4.03/kWh) was lower when compared with the price of electricity transacted through IEX (₹4.51/kWh) and PXIL (₹4.54/kWh) respectively.
- The price of electricity transacted through UI was ₹6.13/kWh in the NEW Grid and ₹5.09/kWh in the SR Grid.
- The gap between the volume of sale bids and buy bids placed through power exchanges indicates that there was more demand in IEX (1:1.57) and less demand in PXIL (1:0.97) when compared with the supply offered through these exchanges.
- Top 5 electricity selling regional entities were Jaypee Karcham Wangtoo Hydro Corporation Ltd., Himachal Pradesh, Jindal Power Ltd, Gujarat and Madhya Pradesh. Top 5 electricity purchasing regional entities were Punjab, Uttar Pradesh, Haryana, Kerala and Tamilnadu.
- The volume of electricity that could not be cleared in the power exchanges due to congestion was about 5.07% and 49.80% of the actual cleared volume in IEX and PXIL, respectively. In percentage of time terms, it was 79.77% in IEX and 84.71% in PXIL, respectively.

Format-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA (MUs), JULY 2012						
Date	Bilateral		Power Exchange (Area 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-Jul-12	110.98	50.79	53.04	2.54	112.15	2519.71
2-Jul-12	111.23	49.00	47.88	3.10	86.16	2524.19
3-Jul-12	115.39	50.79	48.40	1.69	85.86	2524.01
4-Jul-12	114.61	47.68	43.82	2.16	95.71	2542.74
5-Jul-12	115.26	47.46	54.20	4.43	98.04	2536.18
6-Jul-12	115.14	47.14	49.47	2.96	97.37	2478.68
7-Jul-12	119.69	49.03	41.39	1.97	107.15	2411.14
8-Jul-12	124.70	49.67	36.10	0.18	102.50	2417.50
9-Jul-12	122.42	50.42	48.74	0.67	84.99	2503.03
10-Jul-12	122.62	46.40	48.84	2.31	94.60	2597.32
11-Jul-12	122.69	47.51	50.07	1.65	99.26	2520.26
12-Jul-12	123.66	49.84	46.51	1.83	100.08	2517.91
13-Jul-12	126.64	52.07	44.98	1.40	89.42	2472.59
14-Jul-12	124.05	49.53	45.88	1.28	79.43	2454.38
15-Jul-12	127.80	50.54	39.35	1.22	89.16	2431.94
16-Jul-12	131.88	58.81	51.92	1.15	84.28	2466.51
17-Jul-12	133.50	59.86	47.65	1.23	83.04	2533.86
18-Jul-12	127.60	62.42	51.40	0.64	85.03	2477.68
19-Jul-12	129.18	64.58	55.14	1.21	95.90	2453.57
20-Jul-12	126.55	64.57	58.91	2.44	85.71	2415.30
21-Jul-12	132.72	63.55	57.91	3.42	92.82	2462.92
22-Jul-12	122.82	61.96	54.00	1.86	102.15	2442.25
23-Jul-12	126.96	63.84	49.38	0.27	100.37	2465.42
24-Jul-12	129.10	64.17	52.81	2.09	87.54	2476.84
25-Jul-12	125.87	64.20	57.29	2.47	82.98	2461.02
26-Jul-12	119.61	67.61	52.21	0.89	91.35	2458.70
27-Jul-12	121.85	69.05	46.86	1.21	92.06	2486.27
28-Jul-12	128.64	68.20	49.57	1.36	96.83	2489.58
29-Jul-12	128.58	66.50	49.18	1.25	99.81	2445.54
30-Jul-12	92.17	49.36	54.07	1.26	100.69	2077.76
31-Jul-12	92.51	51.14	32.34	0.81	97.87	2026.39
Total	3766.43	1737.69	1519.32	52.93	2900.29	76091.19
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), JULY 2012												
Market Segment	Day ahead market of IEX			Day ahead market of PXIL			Under Drawl/Over Drawl from the Grid (UI)					
Date	Minimum ACP	Maximum ACP	Weighted Average Price*	Minimum ACP	Maximum ACP	Weighted Average Price*	NEW Grid			SR Grid		
							Minimum Price	Maximum Price	Average Price**	Minimum Price	Maximum Price	Average Price**
1-Jul-12	2.34	7.00	4.47	3.51	6.15	4.28	0.16	17.46	6.74	0.00	12.22	3.86
2-Jul-12	2.42	12.22	4.84	3.75	11.01	4.64	0.00	12.22	3.61	0.93	8.26	4.47
3-Jul-12	3.00	9.20	4.92	4.00	19.00	5.24	0.93	12.22	3.80	1.09	12.22	4.55
4-Jul-12	3.50	11.01	5.25	4.18	7.00	5.19	0.31	12.22	3.64	1.09	12.22	4.83
5-Jul-12	2.95	11.01	4.48	3.75	11.01	4.31	1.09	17.46	6.29	2.79	12.22	5.70
6-Jul-12	2.40	11.01	4.30	3.60	8.00	4.44	2.48	17.46	7.93	1.09	12.22	5.85
7-Jul-12	1.95	12.00	3.11	1.20	19.00	3.06	1.24	17.46	6.70	1.09	12.22	6.31
8-Jul-12	1.20	12.01	2.24	0.99	11.50	2.53	0.93	17.46	6.77	1.55	12.22	5.09
9-Jul-12	2.00	13.00	2.78	2.00	19.00	2.95	1.24	12.22	3.64	1.09	12.22	5.40
10-Jul-12	2.00	12.01	2.94	1.30	8.01	3.60	0.78	12.22	3.49	2.02	8.26	4.40
11-Jul-12	1.90	12.10	2.89	1.00	12.00	3.01	1.09	12.22	4.45	0.93	12.22	5.17
12-Jul-12	1.88	11.01	2.91	1.30	12.00	3.16	1.40	12.22	4.24	1.55	12.22	5.65
13-Jul-12	1.60	12.50	3.15	1.30	8.50	3.46	0.78	12.22	3.75	0.93	12.22	5.09
14-Jul-12	1.70	13.01	3.20	2.29	8.00	3.32	0.31	12.22	3.11	1.09	12.22	4.98
15-Jul-12	1.50	13.01	2.97	2.00	8.00	3.36	0.00	12.22	3.00	0.47	8.26	5.14
16-Jul-12	1.30	13.51	3.25	1.30	15.00	3.47	2.17	17.46	7.25	2.48	12.22	6.66
17-Jul-12	2.05	13.51	3.66	2.05	19.00	3.56	2.48	17.46	7.38	1.09	12.22	5.51
18-Jul-12	2.60	13.51	4.31	3.00	19.00	3.70	2.79	17.46	8.49	0.93	12.22	4.72
19-Jul-12	2.75	13.51	4.52	3.05	13.50	4.57	2.17	17.46	7.95	0.47	12.22	4.37
20-Jul-12	3.21	19.00	4.84	3.20	19.00	4.52	3.10	17.46	11.38	0.00	8.26	3.95
21-Jul-12	4.01	12.01	5.18	4.00	12.85	4.73	2.95	17.46	10.47	0.00	12.22	3.42
22-Jul-12	4.10	9.01	5.54	4.20	12.00	4.95	1.40	17.46	7.79	0.00	8.26	3.12
23-Jul-12	4.50	10.51	6.15	5.50	13.50	7.17	2.48	17.46	9.06	0.00	12.22	5.63
24-Jul-12	4.63	14.00	6.38	4.80	20.00	6.24	2.64	17.46	7.83	1.40	12.22	5.36
25-Jul-12	5.01	15.00	6.42	4.90	16.00	6.25	2.02	17.46	7.55	1.40	12.22	6.67
26-Jul-12	4.00	15.00	5.84	4.50	6.70	5.56	0.93	17.46	7.91	1.55	12.22	5.44
27-Jul-12	4.21	14.01	6.06	4.20	7.00	6.00	2.33	17.46	8.94	1.55	12.22	6.03
28-Jul-12	4.30	14.51	6.42	4.50	13.50	6.36	0.93	17.46	5.87	0.16	12.22	5.43
29-Jul-12	3.25	14.51	5.49	2.00	18.00	5.50	0.00	12.22	3.07	0.00	12.22	4.85
30-Jul-12	2.65	14.01	5.58	3.30	7.01	5.71	0.00	17.46	5.68	2.17	12.22	5.21
31-Jul-12	2.50	8.01	3.31	4.90	5.65	5.10	0.00	12.22	2.26	1.09	12.22	5.02
	1.20#	19.00#	4.51	0.99#	20.00#	4.54	0.00#	17.46#	6.13	0.00#	12.22#	5.09

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

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

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

Maximum/Minimum in the month

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

Name of the State/UT/Other Regional Entity	Through Bilateral			Through Power Exchange			Through UI with Regional Grid			Total Net***
	Sale	Purchase	Net**	Sale	Purchase	Net**	Export (Under Drawl)	Import (Over Drawl)	Net**	
Punjab	0.00	1500.04	1500.04	0.00	284.51	284.51	38.45	230.69	192.25	1976.79
Haryana	0.00	578.09	578.09	0.00	112.72	112.72	21.96	456.52	434.56	1125.37
Rajasthan	332.84	5.02	-327.82	45.08	289.23	244.16	67.25	288.92	221.67	138.01
Delhi	2.30	459.77	457.47	87.54	21.19	-66.35	257.27	27.88	-229.38	161.73
Uttar Pradesh	42.67	152.19	109.51	0.00	144.62	144.62	20.37	945.17	924.80	1178.94
Uttarakhand	58.14	0.00	-58.14	0.00	11.54	11.54	15.45	85.55	70.11	23.51
Himachal Pradesh	348.05	4.56	-343.49	339.45	2.41	-337.05	46.12	17.26	-28.86	-709.40
J & K	285.70	14.60	-271.10	8.73	0.00	-8.73	79.92	33.00	-46.92	-326.75
UT Chandigarh	0.00	31.34	31.34	4.95	2.55	-2.40	17.07	3.66	-13.41	15.53
MP	358.54	8.62	-349.93	46.97	18.85	-28.12	147.90	45.02	-102.89	-480.93
Maharashtra	149.82	322.30	172.48	76.54	49.09	-27.45	144.59	58.51	-86.08	58.94
Gujarat	698.88	312.21	-386.67	95.96	352.19	256.23	392.02	32.98	-359.04	-489.48
Chattisgarh	146.06	39.50	-106.56	62.62	0.00	-62.62	59.22	48.65	-10.57	-179.75
Daman and Diu	0.00	14.51	14.51	0.00	0.00	0.00	10.20	1.72	-8.49	6.02
Dadra & Nagar Haveli	0.00	92.18	92.18	0.00	0.00	0.00	12.88	7.49	-5.40	86.78
Andhra Pradesh	50.61	345.21	294.60	31.39	43.44	12.04	36.83	54.29	17.45	324.10
Karnataka	173.39	3.04	-170.35	107.26	6.55	-100.72	28.31	53.77	25.46	-245.60
Kerala	0.00	271.42	271.42	0.00	96.32	96.32	0.27	106.46	106.19	473.93
Tamilnadu	0.00	429.29	429.29	0.00	84.54	84.54	115.49	13.55	-101.94	411.89
Pondicherry	0.00	0.00	0.00	0.00	0.00	0.00	11.59	2.60	-8.98	-8.98
Goa	0.00	0.00	0.00	21.48	0.00	-21.48	20.78	11.23	-9.54	-31.02
West Bengal	191.63	170.13	-21.50	12.68	26.79	14.10	79.37	40.88	-38.50	-45.90
Orissa	0.00	0.00	0.00	12.19	3.63	-8.56	21.50	86.97	65.48	56.91
Bihar	0.00	234.97	234.97	0.00	0.00	0.00	105.90	6.13	-99.77	135.20
Jharkhand	0.00	73.30	73.30	0.00	0.00	0.00	59.05	8.81	-50.24	23.06
Sikkim	45.87	7.12	-38.75	14.67	0.00	-14.67	3.07	3.28	0.21	-53.21
DVC	137.54	24.19	-113.35	60.09	0.00	-60.09	96.02	28.51	-67.50	-240.94
Arunachal Pradesh	0.00	0.00	0.00	0.00	0.00	0.00	15.56	0.52	-15.04	-15.04
Assam	0.00	34.97	34.97	0.93	19.44	18.51	16.11	22.99	6.88	60.36
Manipur	0.00	0.00	0.00	0.00	0.00	0.00	19.64	0.27	-19.37	-19.37
Meghalaya	10.93	0.00	-10.93	1.38	1.87	0.48	10.36	2.32	-8.04	-18.49
Mizoram	0.00	0.00	0.00	4.61	0.00	-4.61	9.44	0.16	-9.28	-13.89
Nagaland	12.77	0.00	-12.77	0.00	0.00	0.00	2.19	5.67	3.48	-9.29
Tripura	0.00	1.23	1.23	0.00	0.77	0.77	6.58	2.25	-4.33	-2.33
NHPC Stations	0.00	0.00	0.00	97.83	0.00	-97.83	31.09	30.47	-0.62	-98.44
NJPC	0.00	0.00	0.00	0.00	0.00	0.00	5.38	0.76	-4.62	-4.62
AD HYDRO	109.13	0.00	-109.13	22.26	0.00	-22.26	13.82	3.48	-10.34	-141.73
KARCHAM WANGTOO	654.01	0.00	-654.01	178.51	0.00	-178.51	23.43	5.78	-17.66	-850.17
SHREE CEMENT	119.36	0.00	-119.36	10.23	0.00	-10.23	18.15	4.58	-13.57	-143.16
JINDAL POWER	525.55	1.00	-524.55	12.59	0.00	-12.59	25.59	29.70	4.11	-533.03
LANKO_AMK	49.99	0.00	-49.99	108.55	0.00	-108.55	71.04	0.59	-70.45	-228.99
NSPCL	56.77	0.00	-56.77	0.00	0.00	0.00	3.14	0.79	-2.35	-59.11
ACBIL	110.08	0.00	-110.08	8.15	0.00	-8.15	3.62	5.45	1.83	-116.40
BALCO	0.00	0.00	0.00	2.28	0.00	-2.28	4.83	0.02	-4.80	-7.09
RGPPL(Dabhol)	0.00	0.00	0.00	0.00	0.00	0.00	5.54	13.79	8.24	8.24
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	2.93	6.60	3.67	3.67
DCPP	0.24	0.00	-0.24	51.10	0.00	-51.10	12.09	9.47	-2.62	-53.96
LANKO_KONDAPALLY	75.19	0.00	-75.19	0.00	0.00	0.00	0.33	2.43	2.10	-73.10
SIMHAPURI	115.87	0.00	-115.87	15.81	0.00	-15.81	1.44	3.26	1.82	-129.86
Meenakshi	0.00	0.99	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.99
STERLITE	420.18	0.00	-420.18	14.84	0.00	-14.84	35.02	49.54	14.52	-420.50
MAITHON POWER LTD	0.00	0.00	0.00	3.25	0.00	-3.25	123.83	2.38	-121.45	-124.70
NEEPCO Stations	0.00	0.00	0.00	12.30	0.00	-12.30	5.59	4.09	-1.48	-13.78

Source: NLDC

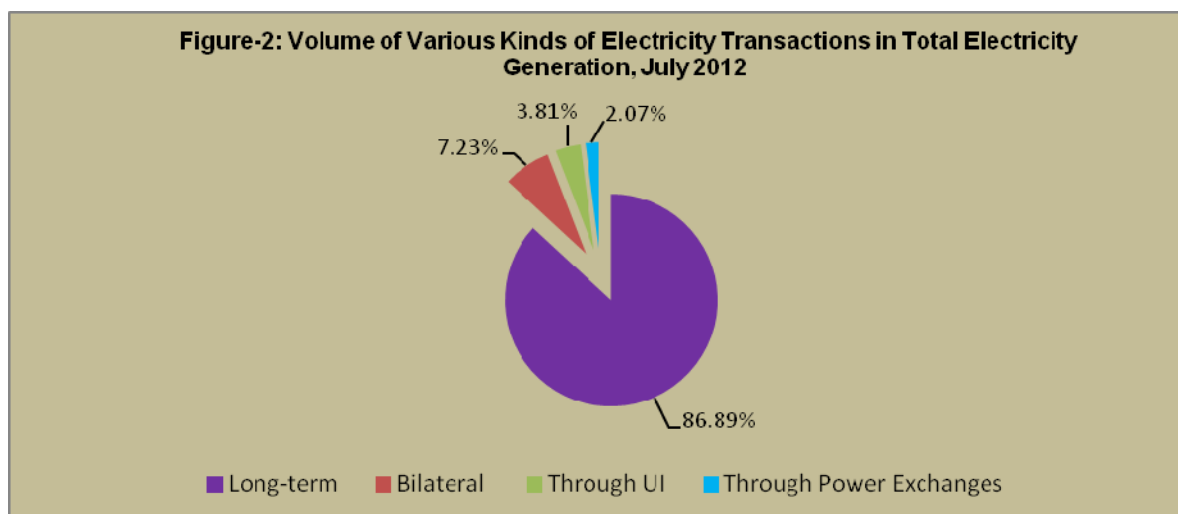
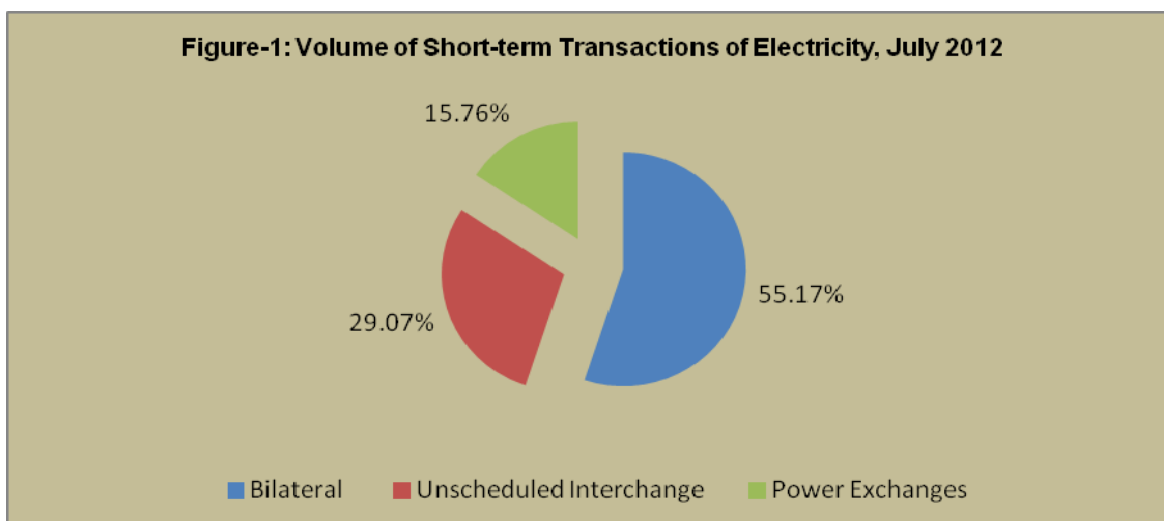
* in case of a state, the entities which are "selling" also include generators connected to state grid and the entities which are "buying" also include open access consumers.

** (-) 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), JULY 2012				
Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	5504.12	55.17%	7.23%
	(i) Through Traders and PXs	3766.43	37.75%	4.95%
	(ii) Direct	1737.69	17.42%	2.28%
2	Through Power Exchanges	1572.25	15.76%	2.07%
	IEX	1519.32	15.23%	2.00%
	PXIL	52.93	0.53%	0.07%
3	Through UI	2900.29	29.07%	3.81%
	Total	9976.66	100.00%	13.11%
	Total Generation	76091.19	—	—

Source: NLDC



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

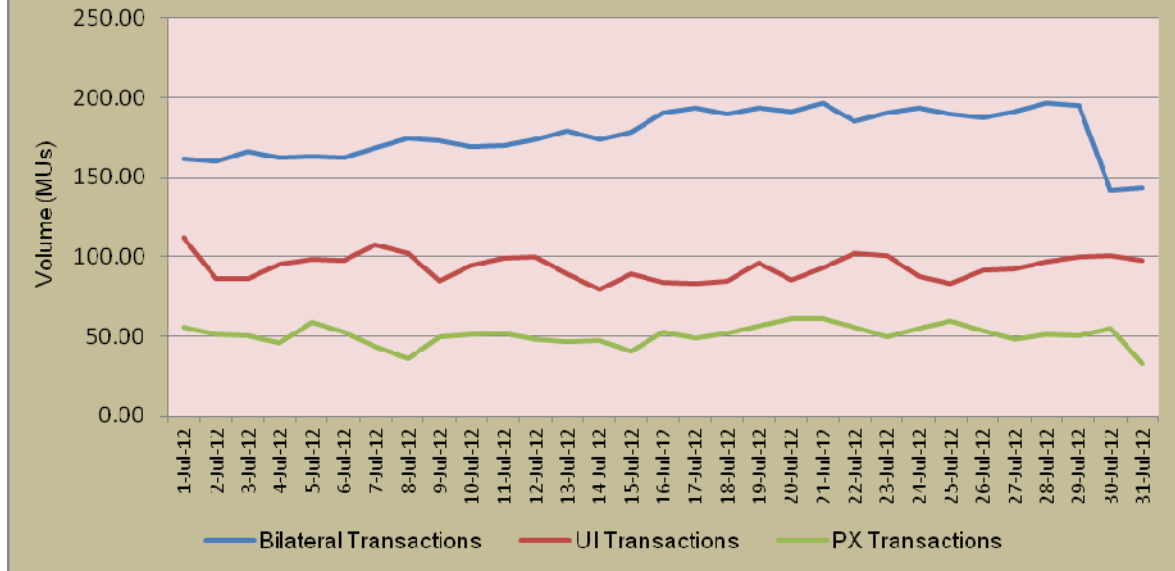


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, JULY 2012			
Sr.No	Name of the Trading Licensee	% Share in total Volume transacted by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd	35.18%	0.1238
2	NTPC Vidyut Vyapar Nigam Ltd	16.40%	0.0269
3	National Energy Trading & Services Ltd	10.06%	0.0101
4	Tata Power Trading Company (P) Ltd	9.42%	0.0089
5	JSW Power Trading Company Ltd	6.47%	0.0042
6	Adani Enterprises Ltd	5.75%	0.0033
7	Reliance Energy Trading (P) Ltd	3.80%	0.0014
8	Knowledge Infrastructure Systems (P) Ltd	3.15%	0.0010
9	Shree Cement Ltd.	2.33%	0.0005
10	Jaiprakash Associates Ltd.	2.22%	0.0005
11	GMR Energy Trading Ltd	2.17%	0.0005
12	Essar Electric Power Development Corp. Ltd.	0.81%	0.0001
13	Global Energy (P) Ltd.	0.81%	0.0001
14	Instinct Infra & Power Ltd.	0.63%	0.0000
15	Mittal Processors (P) Ltd.	0.47%	0.0000
16	RPG Power Trading Company Ltd.	0.32%	0.0000
17	Manikaran Power Ltd.	0.02%	0.0000
18	Customized Energy Solutions India Pvt. Ltd.	0.01%	0.0000
TOTAL		100.00%	0.1813
Top 5 trading licensees		77.53%	
<i>Note: Volume of electricity transacted by the trading licensees includes bilateral transactions (inter-state) and the transactions undertaken through power exchanges.</i>			
<i>Source: Information submitted by trading licensees</i>			

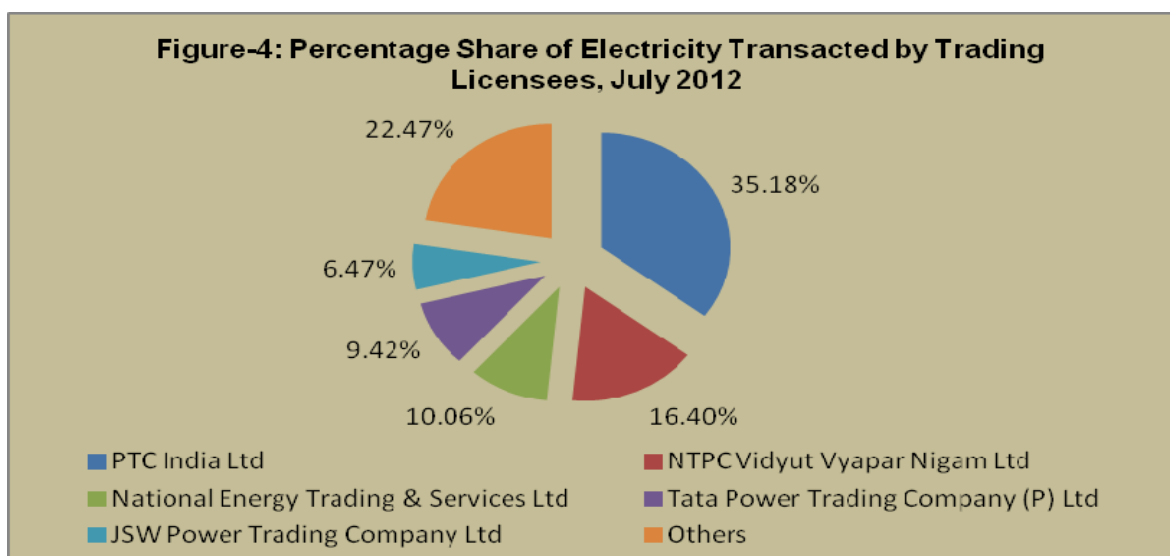


Table-3: PRICE OF ELECTRICITY TRANACTED THROUGH TRADERS, JULY 2012		
Sr.No		Sale Price of Traders (₹/kWh)
1	Minimum	2.90
2	Maximum	7.56
3	Weighted Average	4.03

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANACTED THROUGH TRADERS (TIME-WISE), JULY 2012		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	4.02
2	PEAK	5.81
3	OFF PEAK	4.69

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANACTED THROUGH POWER EXCHANGES, JULY 2012			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	1.20	0.99
2	Maximum	19.00	20.00
3	Weighted Average	4.51	4.54

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, JULY 2012			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	5.52	5.94
2	Day-ahead Contingency Contracts	26.77	5.33
3	Weekly Contracts	0.32	4.10
	Total	32.61	5.42

Source: IEX

Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, JULY 2012			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Weekly Contracts	0.00	0.00
	Total	0.00	0.00

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANACTED THROUGH UI, JULY 2012			
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	6.13	5.09

Source: NLDC

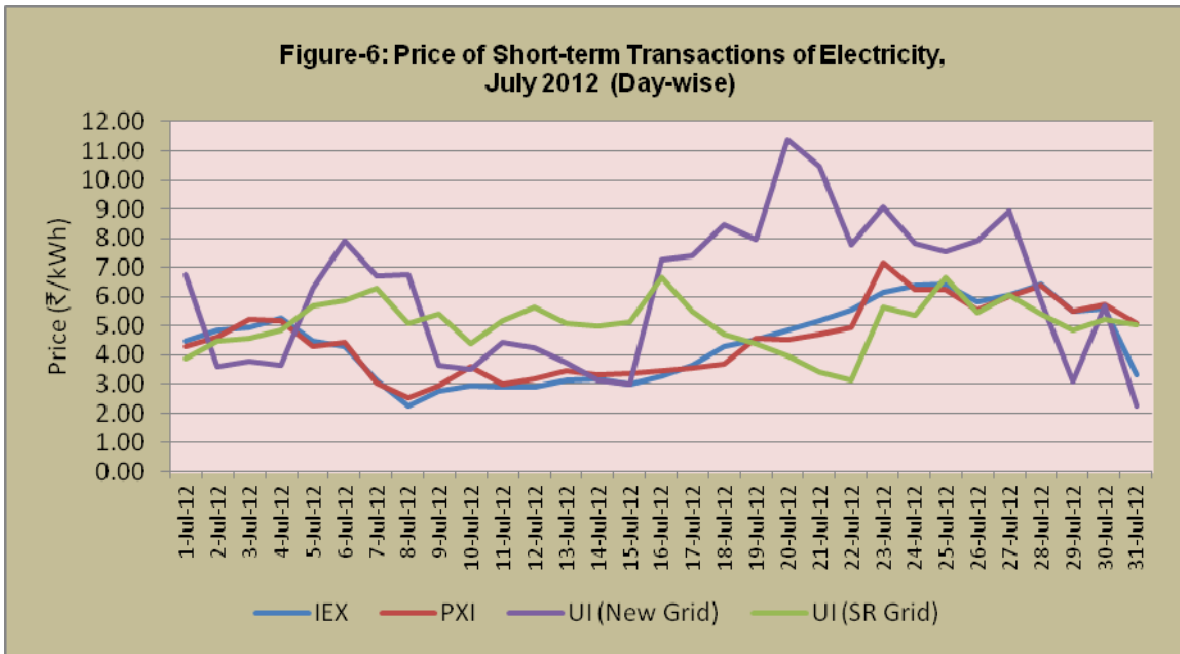
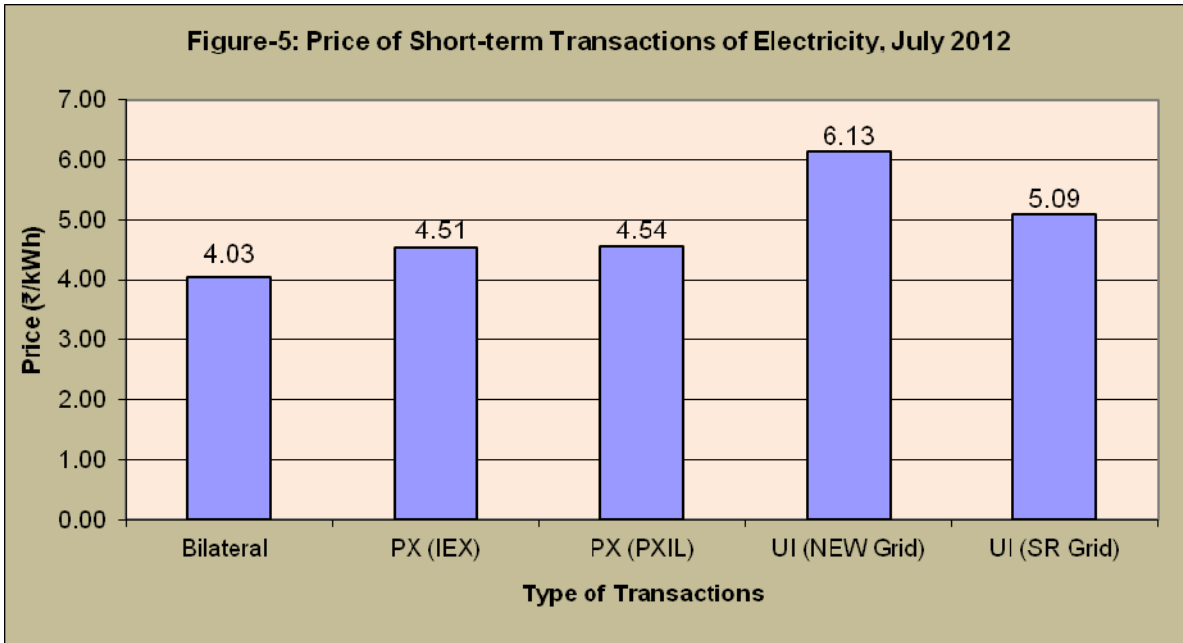


Table-9: VOLUME OF ELECTRICITY SALE THROUGH BILATERAL, JULY 2012		
Name of the State/UT/Other Regional Entity	Volume of Sale (MUs)	% of Volume
Gujarat	698.88	13.23%
KARCHAM WANGTOO	654.01	12.38%
JINDAL POWER	525.55	9.95%
STERLITE	420.18	7.95%
MP	358.54	6.79%
Himachal Pradesh	348.05	6.59%
Rajasthan	332.84	6.30%
J & K	285.70	5.41%
West Bengal	191.63	3.63%
Karnataka	173.39	3.28%
Maharashtra	149.82	2.84%
Chattisgarh	146.06	2.77%
DVC	137.54	2.60%
SHREE CEMENT	119.36	2.26%
SIMHAPURI	115.87	2.19%
ACBIL	110.08	2.08%
AD HYDRO	109.13	2.07%
LANKO_KONDAPALLY	75.19	1.42%
Uttarakhand	58.14	1.10%
NSPCL	56.77	1.07%
Andhra Pradesh	50.61	0.96%
LANKO_AMK	49.99	0.95%
Sikkim	45.87	0.87%
Uttar Pradesh	42.67	0.81%
Nagaland	12.77	0.24%
Meghalaya	10.93	0.21%
Delhi	2.30	0.04%
DCPP	0.24	0.00%
Total	5282.13	100.00%
Volume of sale by top 5 States	2657.17	50.30%

Table-10: VOLUME OF ELECTRICITY PURCHASE THROUGH BILATERAL, JULY 2012		
Name of the State/UT/Other Regional Entity	Volume of Purchase (MUs)	% of Volume
Punjab	1500.04	29.23%
Haryana	578.09	11.26%
Delhi	459.77	8.96%
Tamilnadu	429.29	8.37%
Andhra Pradesh	345.21	6.73%
Maharashtra	322.30	6.28%
Gujarat	312.21	6.08%
Kerala	271.42	5.29%
Bihar	234.97	4.58%
West Bengal	170.13	3.32%
Uttar Pradesh	152.19	2.97%
Dadra & Nagar Haveli	92.18	1.80%
Jharkhand	73.30	1.43%
Chattisgarh	39.50	0.77%
Assam	34.97	0.68%
UT Chandigarh	31.34	0.61%
DVC	24.19	0.47%
J & K	14.60	0.28%
Daman and Diu	14.51	0.28%
MP	8.62	0.17%
Sikkim	7.12	0.14%
Rajasthan	5.02	0.10%
Himachal Pradesh	4.56	0.09%
Karnataka	3.04	0.06%
Tripura	1.23	0.02%
JINDAL POWER	1.00	0.02%
Meenakshi	0.99	0.02%
Total	5131.77	100.00%
Volume of sale by top 5 States	3312.40	64.55%

Table-11: VOLUME OF ELECTRICITY SALE THROUGH POWER EXCHANGES, JULY 2012		
Name of the State/UT/Other Regional Entity	Volume of Sale (MUs)	% of Volume
Himachal Pradesh	339.45	21.59%
KARCHAM WANGTOO	178.51	11.35%
LANKO_AMK	108.55	6.90%
Karnataka	107.26	6.82%
NHPC Stations	97.83	6.22%
Gujarat	95.96	6.10%
Delhi	87.54	5.57%
Maharashtra	76.54	4.87%
Chattisgarh	62.62	3.98%
DVC	60.09	3.82%
DCPP	51.10	3.25%
MP	46.97	2.99%
Rajasthan	45.08	2.87%
Andhra Pradesh	31.39	2.00%
AD HYDRO	22.26	1.42%
Goa	21.48	1.37%
SIMHAPURI	15.81	1.01%
STERLITE	14.84	0.94%
Sikkim	14.67	0.93%
West Bengal	12.68	0.81%
JINDAL POWER	12.59	0.80%
NEEPCO Stations	12.30	0.78%
Orissa	12.19	0.78%
SHREE CEMENT	10.23	0.65%
J & K	8.73	0.56%
ACBIL	8.15	0.52%
UT Chandigarh	4.95	0.32%
Mizoram	4.61	0.29%
MAITHON POWER LTD	3.25	0.21%
BALCO	2.28	0.15%
Meghalaya	1.38	0.09%
Assam	0.93	0.06%
Total	1572.25	100.00%
Volume of sale by top 5 States	831.60	52.89%

Table-12: VOLUME OF ELECTRICITY PURCHASE THROUGH POWER EXCHANGES, JULY 2012		
Name of the State/UT/Other Regional Entity	Volume of Purchase (MUs)	% of Volume
Gujarat	352.19	22.40%
Rajasthan	289.23	18.40%
Punjab	284.51	18.10%
Uttar Pradesh	144.62	9.20%
Haryana	112.72	7.17%
Kerala	96.32	6.13%
Tamilnadu	84.54	5.38%
Maharashtra	49.09	3.12%
Andhra Pradesh	43.44	2.76%
West Bengal	26.79	1.70%
Delhi	21.19	1.35%
Assam	19.44	1.24%
MP	18.85	1.20%
Uttarakhand	11.54	0.73%
Karnataka	6.55	0.42%
Orissa	3.63	0.23%
UT Chandigarh	2.55	0.16%
Himachal Pradesh	2.41	0.15%
Meghalaya	1.87	0.12%
Tripura	0.77	0.05%
Total	1572.24	100.00%
Volume of purchase by top 5 States	1183.27	75.26%

Table-13: VOLUME OF ELECTRICITY EXPORT THROUGH UI, JULY 2012

Name of the State/UT/Other Regional Entity	Volume of Export (MUs)	% of Volume
Gujarat	392.02	16.50%
Delhi	257.27	10.83%
MP	147.90	6.23%
Maharashtra	144.59	6.09%
MAITHON POWER LTD	123.83	5.21%
Tamilnadu	115.49	4.86%
Bihar	105.90	4.46%
DVC	96.02	4.04%
J & K	79.92	3.36%
West Bengal	79.37	3.34%
LANKO_AMK	71.04	2.99%
Rajasthan	67.25	2.83%
Chattisgarh	59.22	2.49%
Jharkhand	59.05	2.49%
Himachal Pradesh	46.12	1.94%
Punjab	38.45	1.62%
Andhra Pradesh	36.83	1.55%
STERLITE	35.02	1.47%
NHPC Stations	31.09	1.31%
Karnataka	28.31	1.19%
JINDAL POWER	25.59	1.08%
KARCHAM WANGTOO	23.43	0.99%
Haryana	21.96	0.92%
Orissa	21.50	0.90%
Goa	20.78	0.87%
Uttar Pradesh	20.37	0.86%
Manipur	19.64	0.83%
SHREE CEMENT	18.15	0.76%
UT Chandigarh	17.07	0.72%
Assam	16.11	0.68%
Arunachal Pradesh	15.56	0.66%
Uttarakhand	15.45	0.65%
AD HYDRO	13.82	0.58%
Dadra & Nagar Haveli	12.88	0.54%
DCPP	12.09	0.51%
Pondicherry	11.59	0.49%
Meghalaya	10.36	0.44%
Daman and Diu	10.20	0.43%
Mizoram	9.44	0.40%
Tripura	6.58	0.28%
NEEPCO Stations	5.59	0.24%
RGPPL(Dabhol)	5.54	0.23%
NJPC	5.38	0.23%
BALCO	4.83	0.20%
ACBIL	3.62	0.15%
NSPCL	3.14	0.13%
Sikkim	3.07	0.13%
CGPL	2.93	0.12%
Nagaland	2.19	0.09%
SIMHAPURI	1.44	0.06%
LANKO_KONDAPALLY	0.33	0.01%
Kerala	0.27	0.01%
Total	2375.60	100.00%
Volume of Export by top 5 States	1065.62	44.86%

Table-14: VOLUME OF ELECTRICITY IMPORT THROUGH UI, JULY 2012		
Name of the State/UT/Other Regional Entity	Volume of Import (MUs)	% of Volume
Uttar Pradesh	945.17	32.51%
Haryana	456.52	15.70%
Rajasthan	288.92	9.94%
Punjab	230.69	7.94%
Kerala	106.46	3.66%
Orissa	86.97	2.99%
Uttarakhand	85.55	2.94%
Maharashtra	58.51	2.01%
Andhra Pradesh	54.29	1.87%
Karnataka	53.77	1.85%
STERLITE	49.54	1.70%
Chattisgarh	48.65	1.67%
MP	45.02	1.55%
West Bengal	40.88	1.41%
J & K	33.00	1.14%
Gujarat	32.98	1.13%
NHPC Stations	30.47	1.05%
JINDAL POWER	29.70	1.02%
DVC	28.51	0.98%
Delhi	27.88	0.96%
Assam	22.99	0.79%
Himachal Pradesh	17.26	0.59%
RGPPPL(Dabhol)	13.79	0.47%
Tamilnadu	13.55	0.47%
Goa	11.23	0.39%
DCPP	9.47	0.33%
Jharkhand	8.81	0.30%
Dadra & Nagar Haveli	7.49	0.26%
CGPL	6.60	0.23%
Bihar	6.13	0.21%
KARCHAM WANGTOO	5.78	0.20%
Nagaland	5.67	0.20%
ACBIL	5.45	0.19%
SHREE CEMENT	4.58	0.16%
NEEPCO Stations	4.09	0.14%
UT Chandigarh	3.66	0.13%
AD HYDRO	3.48	0.12%
Sikkim	3.28	0.11%
SIMHAPURI	3.26	0.11%
Pondicherry	2.60	0.09%
LANKO KONDAPALLY	2.43	0.08%
MAITHON POWER LTD	2.38	0.08%
Meghalaya	2.32	0.08%
Tripura	2.25	0.08%
Daman and Diu	1.72	0.06%
NSPCL	0.79	0.03%
NJPC	0.76	0.03%
LANKO_AMK	0.59	0.02%
Arunachal Pradesh	0.52	0.02%
Manipur	0.27	0.01%
Mizoram	0.16	0.01%
BALCO	0.02	0.00%
Total	2906.89	100.00%
Volume of Export by top 5 States	2027.76	69.76%

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

Sr.No	Name of the State/UT/Other Regional Entity	Total volume of net short-term transactions of electricity*
1	Punjab	1976.79
2	Uttar Pradesh	1178.94
3	Haryana	1125.37
4	Kerala	473.93
5	Tamilnadu	411.89
6	Andhra Pradesh	324.10
7	Delhi	161.73
8	Rajasthan	138.01
9	Bihar	135.20
10	Dadra & Nagar Haveli	86.78
11	Assam	60.36
12	Maharashtra	58.94
13	Orissa	56.91
14	Uttarakhand	23.51
15	Jharkhand	23.06
16	UT Chandigarh	15.53
17	RGPPL(Dabhol)	8.24
18	Daman and Diu	6.02
19	CGPL	3.67
20	Meenakshi	0.99
21	Tripura	-2.33
22	NJPC	-4.62
23	BALCO	-7.09
24	Pondicherry	-8.98
25	Nagaland	-9.29
26	NEEPCO Stations	-13.78
27	Mizoram	-13.89
28	Arunachal Pradesh	-15.04
29	Meghalaya	-18.49
30	Manipur	-19.37
31	Goa	-31.02
32	West Bengal	-45.90
33	Sikkim	-53.21
34	DCPP	-53.96
35	NSPCL	-59.11
36	LANKO_KONDAPALLY	-73.10
37	NHPC Stations	-98.44
38	ACBIL	-116.40
39	MAITHON POWER LTD	-124.70
40	SIMHAPURI	-129.86
41	AD HYDRO	-141.73
42	SHREE CEMENT	-143.16
43	Chattisgarh	-179.75
44	LANKO_AMK	-228.99
45	DVC	-240.94
46	Karnataka	-245.60
47	J & K	-326.75
48	STERLITE	-420.50
49	MP	-480.93
50	Gujarat	-489.48
51	JINDAL POWER	-533.03
52	Himachal Pradesh	-709.40
53	KARCHAM WANGTOO	-850.17

* 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, JULY 2012			
	Details of Congestion	IEX	PXIL
A	Unconstrained Cleared Volume* (MUs)	1596.28	79.29
B	Actual Cleared Volume and hence scheduled (MUs)	1519.32	52.93
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	76.96	26.36
D	Volume of electricity that could not be cleared as % to Actual Cleared Volume	5.07%	49.80%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	79.77%	84.71%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	22.11%	23.28%
	6.00 - 12.00 hours	28.14%	26.50%
	12.00 - 18.00 hours	23.97%	24.00%
	18.00 - 24.00 hours	25.78%	26.22%
* This power would have been scheduled had there been no congestion.			
Source: IEX & PXIL			