



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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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 August 2012 is as under:

I: Volume of Short-term Transactions of Electricity

During the month of August 2012, total electricity generation excluding generation from renewable and captive power plants in India was 74262.66 MUs (Table-1).

Of the total electricity generation, 9702.67 MUs (13.07%) were transacted through short-term, comprising of 5765.70 MUs (7.76%) through Bilateral (through traders and term-ahead contracts on Power Exchanges and directly between distribution companies), followed by 2076.03 MUs (2.80%) through UI and 1860.95 MUs (2.51%) through day ahead collective transactions on Power Exchanges (IEX and PXIL) (Table-1 & Figure-2).

Of the total short-term transactions, Bilateral constitute 59.42% (39.73% through traders and term-ahead contracts on Power Exchanges and 19.69% directly between distribution companies) followed by 21.40% through UI and 19.18% 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 31.08.2012, of which only 18 have engaged in trading during August

2012. Top 5 trading licenses had a share of 75.86% 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 0.1734 for the month of August 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 1821.02 MUs and 39.93 MUs respectively. The volume of total Buy bids and Sale bids was 2892.78 MUs and 2691.70 MUs respectively in IEX and 122.85 MUs and 225.25 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 (1.07 times) and less demand in PXIL (0.55 times) when compared with the supply offered through these exchanges.

The volume of electricity transacted in term-ahead market through weekly contracts was 12.67 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 ₹4.22/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 ₹4.22/kWh, ₹4.89/kWh and ₹4.30/kWh respectively. Minimum and Maximum sale prices were ₹2.90/kWh and ₹8.04/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 ₹1.00/kWh, ₹14.61/kWh and ₹3.89/kWh respectively in IEX and ₹1.00/kWh, ₹20.00/kWh and ₹3.53/kWh respectively in PXIL (Table-5).

The weighted average price of electricity transacted in term-ahead market through the weekly contracts was ₹5.08/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 ₹2.16/kWh in the NEW Grid and ₹4.12/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 51.11% of the volume, and these were Gujarat, Jaypee Karcham Hydro Corporation Ltd., Jindal Power Ltd., Himachal Pradesh and Sterlite Energy Ltd. Top 5 regional entities purchased 63.10% of the volume, and these were Punjab, Andhra Pradesh, Uttar Pradesh, Haryana and Maharashtra (Table-9 & 10).

Of the total Power Exchange transactions, top 5 regional entities 57.11% of the volume, and these were Madhya Pradesh, Karnataka, Himachal Pradesh, Delhi and Jaypee Karcham Hydro Corporation Ltd. Top 5 regional entities purchased 68.83% of the volume, and these were Punjab, Gujarat, Kerala, Uttar Pradesh and Maharashtra (Table-11 & 12).

Of the total UI transactions, top 5 regional entities underdrew 40.47% of the volume, and these were Delhi, Jammu & Kashmir, Madhya Pradesh, Uttar Pradesh and Gujarat. Top 5 regional entities overdrew 38.37% of the volume, and these were Maharashtra, Gujarat, Punjab, Rajasthan 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 exchanges and UI is shown in Table-15. Top 5 electricity selling regional entities were Madhya Pradesh, Himachal Pradesh, Jaypee Karcham Wangtoo Hydro Corporation Ltd., Jindal Power Ltd. and Karnataka. Top 5 electricity purchasing regional entities were Punjab, Haryana, Uttar Pradesh, Andhra Pradesh 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 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 9.90% and 118.72% of the actual cleared volume in IEX and PXIL, respectively. In percentage of time terms, it was 98.96% in IEX and 99.44% 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 13.07%.
- Of the total short-term transactions of electricity, 59.42% was transacted through bilateral (through traders and term ahead contracts on power exchanges and directly by distribution companies), followed by 21.40% through UI and 19.18% through Power Exchanges.
- Top 5 trading licensees had a share of 75.86% in the total volume traded by all the trading licensees.
- The Herfindahl Hirschman Index computed for volume of electricity traded by trading licensees was 0.1734, indicating moderate concentration of market power.
- The price of electricity transacted through trading licensees (₹4.22/kWh) was higher when compared with the price of electricity transacted through IEX (₹3.89/kWh) and PXIL (₹3.53/kWh) respectively.
- The price of electricity transacted through UI was ₹2.16/kWh in the NEW Grid and ₹4.12/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 (1:1.07) and less demand in PXIL (1:0.55) when compared with the supply offered through these exchanges.
- Top 5 electricity selling regional entities were Madhya Pradesh, Himachal Pradesh, Jaypee Karcham Wangtoo Hydro Corporation Ltd., Jindal Power Ltd. and Karnataka. Top 5 electricity purchasing regional entities were Punjab, Haryana, Uttar Pradesh, Andhra Pradesh and Maharashtra.
- The volume of electricity that could not be cleared in the power exchanges due to congestion was about 9.90% and 118.72% of the actual cleared volume in IEX and PXIL, respectively. In percentage of time terms, it was 98.96% in IEX and 99.44% in PXIL, respectively.

Format-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA (MUs), AUGUST 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-Aug-12	124.73	45.59	0.00	0.00	93.25	2280.34
2-Aug-12	103.68	55.23	57.13	1.75	81.42	2303.81
3-Aug-12	123.19	51.91	50.23	1.31	81.92	2331.18
4-Aug-12	110.73	58.10	56.91	1.37	78.26	2327.25
5-Aug-12	123.92	52.97	62.01	1.70	79.09	2356.44
6-Aug-12	130.53	59.78	61.00	1.74	74.00	2438.62
7-Aug-12	116.61	54.63	66.46	1.58	62.43	2411.77
8-Aug-12	118.58	53.69	70.46	1.66	65.05	2459.16
9-Aug-12	119.70	56.12	70.76	1.24	70.17	2459.97
10-Aug-12	119.61	56.03	65.14	1.79	64.66	2399.32
11-Aug-12	114.86	53.98	68.27	1.10	71.00	2395.05
12-Aug-12	116.56	61.02	65.56	1.79	71.89	2371.24
13-Aug-12	119.07	63.17	66.95	1.30	68.25	2382.54
14-Aug-12	127.39	60.32	56.13	1.51	67.92	2403.08
15-Aug-12	131.50	55.43	50.90	1.22	68.07	2339.95
16-Aug-12	123.48	60.34	56.14	1.48	64.21	2435.44
17-Aug-12	123.51	60.27	58.26	1.02	60.07	2404.87
18-Aug-12	124.01	68.08	69.04	1.13	51.62	2444.67
19-Aug-12	122.01	66.17	68.45	1.64	60.25	2431.14
20-Aug-12	118.97	63.14	67.59	1.43	62.05	2444.86
21-Aug-12	108.91	66.94	49.23	1.46	61.65	2415.87
22-Aug-12	118.37	70.42	51.89	1.21	66.04	2409.66
23-Aug-12	151.08	73.35	56.29	1.29	67.41	2452.73
24-Aug-12	149.32	77.55	56.92	0.90	62.12	2444.68
25-Aug-12	143.09	74.39	60.79	2.19	58.37	2399.73
26-Aug-12	145.13	69.65	55.36	0.46	67.52	2334.97
27-Aug-12	144.17	69.08	57.71	0.51	58.38	2365.38
28-Aug-12	122.88	62.71	56.11	1.01	63.85	2349.77
29-Aug-12	121.13	65.52	56.58	0.52	63.87	2349.77
30-Aug-12	120.48	63.45	68.60	1.23	55.73	2444.42
31-Aug-12	117.82	61.67	64.16	1.40	55.52	2474.98
Total	3855.01	1910.69	1821.02	39.93	2076.03	74262.66

Source: NLDC

Note: On account of major grid disturbances, no collective transactions on power exchanges were scheduled for delivery day 01.08.2012.

* 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 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-Aug-12	-	-	-	-	-	-	0.00	12.22	1.71	1.40	6.85	4.36	
2-Aug-12	2.50	14.51	4.62	3.70	9.01	4.59	0.00	3.88	1.08	0.31	8.26	4.82	
3-Aug-12	2.25	14.51	4.93	1.75	9.01	4.56	0.00	3.72	0.99	0.93	12.22	4.43	
4-Aug-12	2.25	14.51	3.86	2.35	9.01	4.24	0.16	12.22	3.17	0.31	8.26	4.06	
5-Aug-12	2.10	14.51	3.52	1.75	13.50	3.37	0.47	12.22	3.68	0.93	12.22	3.53	
6-Aug-12	2.25	14.51	4.85	3.15	20.00	4.29	0.00	5.44	2.96	0.47	8.26	3.44	
7-Aug-12	2.00	14.51	4.88	3.25	20.00	4.26	0.62	12.22	3.24	0.47	8.26	4.14	
8-Aug-12	2.00	14.61	5.25	3.50	20.00	4.81	0.00	6.38	2.64	0.93	8.26	4.22	
9-Aug-12	2.00	14.61	4.96	3.39	20.00	5.11	0.00	12.22	2.80	0.93	12.22	4.06	
10-Aug-12	2.00	14.61	4.41	1.20	10.00	4.45	0.00	6.85	2.14	0.00	6.85	3.13	
11-Aug-12	1.90	14.61	3.79	1.25	10.01	4.08	0.00	3.72	1.89	0.00	5.91	2.56	
12-Aug-12	1.50	14.51	3.19	1.25	10.01	3.80	0.00	3.41	1.48	0.00	7.79	3.11	
13-Aug-12	1.70	14.51	3.42	1.25	20.00	4.24	0.00	4.50	2.04	1.09	7.79	3.83	
14-Aug-12	1.70	14.51	3.24	2.50	20.00	3.61	0.00	4.50	1.92	1.09	12.22	5.03	
15-Aug-12	1.70	14.51	2.93	2.25	20.00	2.85	0.00	4.97	1.50	0.93	7.79	3.87	
16-Aug-12	1.70	14.51	3.41	2.25	13.50	3.08	0.00	5.91	2.27	0.00	8.26	4.28	
17-Aug-12	1.70	14.51	3.54	1.25	13.50	3.13	0.00	5.91	2.03	1.55	12.22	5.05	
18-Aug-12	1.70	14.51	3.53	1.20	9.00	2.93	0.62	7.79	3.20	0.47	8.26	4.20	
19-Aug-12	1.70	14.51	3.24	1.00	20.00	2.74	0.00	6.85	2.80	0.00	7.32	3.80	
20-Aug-12	1.70	14.51	3.49	1.00	20.00	2.76	0.78	17.46	4.03	1.55	12.22	5.32	
21-Aug-12	1.70	14.51	4.40	2.49	20.00	3.53	0.00	5.44	2.12	1.71	8.26	5.34	
22-Aug-12	2.49	14.51	4.54	1.25	10.01	3.93	0.00	6.85	1.67	1.55	12.22	5.84	
23-Aug-12	2.25	14.51	4.77	1.50	20.00	3.11	0.00	12.22	1.89	2.17	12.22	5.17	
24-Aug-12	2.00	14.51	4.30	1.75	13.50	3.20	0.00	4.97	1.44	1.24	12.22	5.36	
25-Aug-12	1.70	14.51	4.01	1.99	20.00	3.25	0.00	5.91	1.45	1.55	8.26	4.10	
26-Aug-12	1.70	10.01	3.48	1.99	20.00	2.19	0.00	3.10	1.03	0.00	6.85	3.12	
27-Aug-12	1.68	10.01	3.53	1.50	13.50	2.59	0.00	3.41	1.09	0.47	7.79	3.53	
28-Aug-12	1.65	12.01	2.95	1.85	9.00	2.69	0.00	7.32	1.76	0.16	7.79	3.58	
29-Aug-12	1.50	12.01	2.96	1.40	1.99	1.88	0.00	12.22	2.60	0.16	6.38	3.35	
30-Aug-12	1.50	12.51	3.20	1.89	12.00	2.70	0.00	4.97	2.24	0.00	7.79	3.04	
31-Aug-12	1.00	12.51	3.34	1.40	15.00	2.40	0.00	5.91	2.18	0.00	8.26	3.96	
	1.00#	14.61#	3.89	1.00#	20.00#	3.53	0.00#	17.46#	2.16	0.00#	12.22#	4.12	

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

Note: On account of major grid disturbances, no collective transactions on power exchanges were scheduled for delivery day 01.08.2012.

* 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), AUGUST 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	1224.66	1224.66	0.00	369.71	369.71	25.54	116.26	90.72	1685.09
Haryana	0.00	569.89	569.89	0.00	148.18	148.18	46.45	85.85	39.40	757.48
Rajasthan	212.43	1.97	-210.46	24.49	121.85	97.36	69.00	107.52	38.52	-74.58
Delhi	14.67	330.87	316.20	119.31	8.03	-111.28	191.73	10.28	-181.46	23.46
Uttar Pradesh	12.12	569.99	557.86	0.00	213.07	213.07	117.32	91.92	-25.41	745.52
Uttarakhand	42.43	0.00	-42.43	0.20	49.11	48.91	25.51	50.14	24.63	31.12
Himachal Pradesh	494.44	8.31	-486.12	213.58	0.00	-213.58	67.77	9.06	-58.71	-758.41
J & K	334.60	218.18	-116.42	6.07	0.00	-6.07	146.57	8.22	-138.35	-260.84
UT Chandigarh	0.00	32.68	32.68	12.83	0.50	-12.32	19.53	1.39	-18.14	2.22
MP	399.09	0.00	-399.09	392.75	22.61	-370.14	125.49	51.98	-73.51	-842.74
Maharashtra	102.77	371.11	268.33	14.67	168.68	154.01	47.07	224.39	177.32	599.66
Gujarat	720.86	313.92	-406.94	55.30	312.40	257.09	81.06	180.13	99.07	-50.77
Chattisgarh	142.13	26.80	-115.33	91.40	0.00	-91.40	23.13	82.35	59.22	-147.52
Daman and Diu	0.00	0.00	0.00	0.00	0.00	0.00	8.57	3.79	-4.78	-4.78
Dadra & Nagar Haveli	0.00	50.22	50.22	0.00	0.00	0.00	25.36	1.43	-23.93	26.29
Andhra Pradesh	0.48	588.22	587.74	52.88	109.65	56.78	16.26	100.88	84.63	729.14
Karnataka	298.84	2.78	-296.05	222.08	3.21	-218.87	76.59	15.52	-61.07	-575.99
Kerala	0.00	100.37	100.37	0.00	216.96	216.96	0.32	86.53	86.21	403.53
Tamilnadu	0.00	200.48	200.48	0.00	48.46	48.46	47.23	51.03	3.80	252.73
Pondicherry	0.00	0.00	0.00	0.00	0.00	0.00	10.37	2.27	-8.10	-8.10
Goa	0.00	0.13	0.13	12.93	0.00	-12.93	18.68	8.91	-9.77	-22.57
West Bengal	91.94	357.60	265.66	66.65	46.04	-20.61	32.31	92.56	60.25	305.30
Orissa	87.71	3.60	-84.11	32.81	0.00	-32.81	23.65	71.70	48.06	-68.86
Bihar	0.00	175.46	175.46	0.00	0.00	0.00	24.16	30.07	5.91	181.37
Jharkhand	0.00	74.40	74.40	0.00	0.00	0.00	80.47	6.72	-73.75	0.65
Sikkim	33.20	7.87	-25.32	25.41	0.00	-25.41	3.45	4.19	0.74	-49.99
DVC	176.66	8.90	-167.76	31.00	0.00	-31.00	16.72	73.43	56.72	-142.05
Arunachal Pradesh	0.00	0.00	0.00	0.00	0.00	0.00	8.38	3.23	-5.15	-5.15
Assam	0.00	27.62	27.62	0.00	20.65	20.65	6.26	51.27	45.00	93.27
Manipur	0.00	0.00	0.00	0.00	0.00	0.00	16.45	0.30	-16.14	-16.14
Meghalaya	8.99	0.00	-8.99	3.03	1.80	-1.23	7.97	6.86	-1.11	-11.33
Mizoram	0.00	0.00	0.00	3.74	0.00	-3.74	7.07	0.24	-6.83	-10.57
Nagaland	14.76	0.00	-14.76	0.00	0.00	0.00	5.61	1.39	-4.23	-18.99
Tripura	7.65	0.23	-7.42	3.91	0.05	-3.86	4.30	6.38	2.08	-9.20
NHPC Stations	0.00	0.00	0.00	96.23	0.00	-96.23	52.83	41.65	-11.18	-107.42
NJPC	0.00	0.00	0.00	0.00	0.00	0.00	4.17	0.87	-3.30	-3.30
AD HYDRO	110.35	0.00	-110.35	21.05	0.00	-21.05	10.89	3.59	-7.31	-138.70
KARCHAM WANGTOO	593.17	0.00	-593.17	115.03	0.00	-115.03	20.75	23.49	2.74	-705.46
SHREE CEMENT	107.90	0.00	-107.90	18.50	0.00	-18.50	3.73	6.49	2.76	-123.64
JINDAL POWER	516.92	0.00	-516.92	85.71	0.00	-85.71	24.29	12.48	-11.81	-614.44
LANCO_AMK	116.20	0.00	-116.20	45.32	0.00	-45.32	43.11	3.52	-39.59	-200.06
NSPCL	0.00	0.00	0.00	0.00	0.00	0.00	15.43	3.13	-12.30	-12.30
ACBIL	111.83	0.00	-111.83	4.29	0.00	-4.29	6.66	6.33	-0.33	-116.45
BALCO	0.00	0.00	0.00	1.99	0.00	-1.99	3.53	0.30	-3.23	-5.22
RGPPL(Dabhol)	0.00	0.00	0.00	0.00	0.00	0.00	0.98	27.97	26.99	26.99
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	3.30	7.24	3.94	3.94
DCPP	11.23	0.00	-11.23	40.92	0.00	-40.92	2.66	12.27	9.60	-42.54
LANCO_KONDAPALLY	70.48	0.00	-70.48	0.00	0.00	0.00	0.41	2.62	2.21	-68.26
SIMHAPURI	148.01	0.00	-148.01	8.66	0.00	-8.66	0.83	7.86	7.03	-149.64
Meenakshi	0.00	0.99	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.99
STERLITE	473.71	0.00	-473.71	7.36	0.00	-7.36	5.01	86.15	81.14	-399.92
MAITHON POWER LTD	21.46	0.00	-21.46	10.13	0.00	-10.13	5.12	12.14	7.02	-24.56
NEEPCO Stations	0.00	0.00	0.00	20.72	0.00	-20.72	6.00	4.09	-1.89	-22.61

Source: NLDC

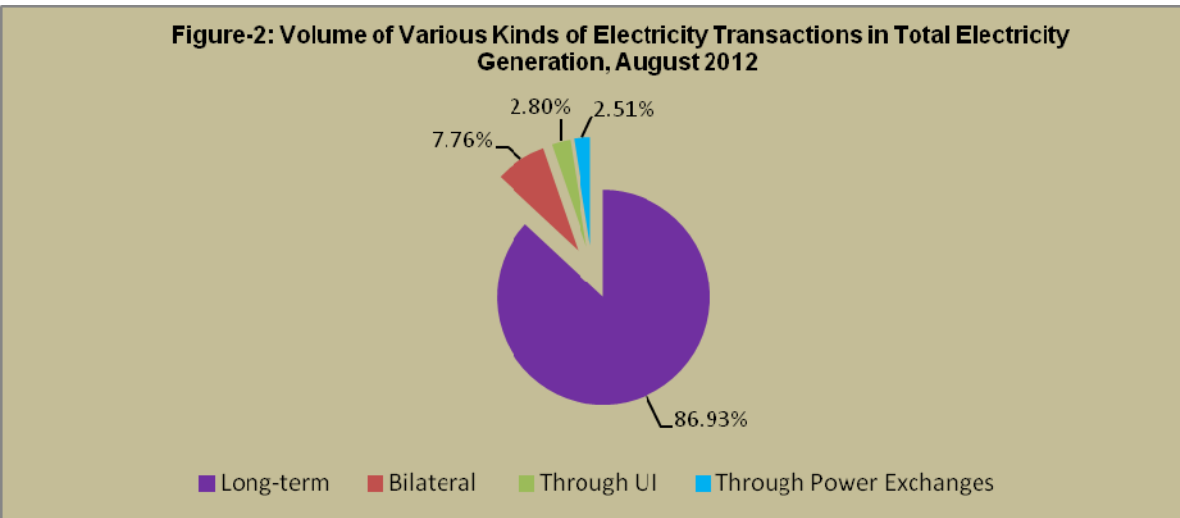
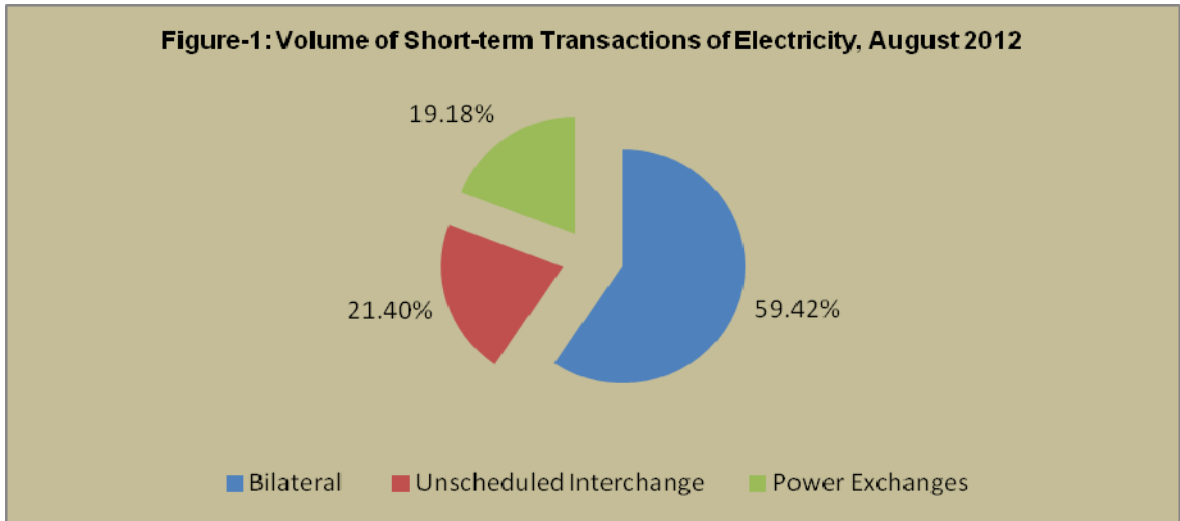
* in case of a state, the entities which are "selling" also include generators connected to state grid and the entities which are "buying" also include open access consumers.

** (-) 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 2012				
Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	5765.70	59.42%	7.76%
	(i) Through Traders and PXs	3855.01	39.73%	5.19%
	(ii) Direct	1910.69	19.69%	2.57%
2	Through Power Exchanges	1860.95	19.18%	2.51%
	IEX	1821.02	18.77%	2.45%
	PXIL	39.93	0.41%	0.05%
3	Through UI	2076.03	21.40%	2.80%
	Total	9702.67	100.00%	13.07%
	Total Generation	74262.66	—	—

Source: NLDC



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

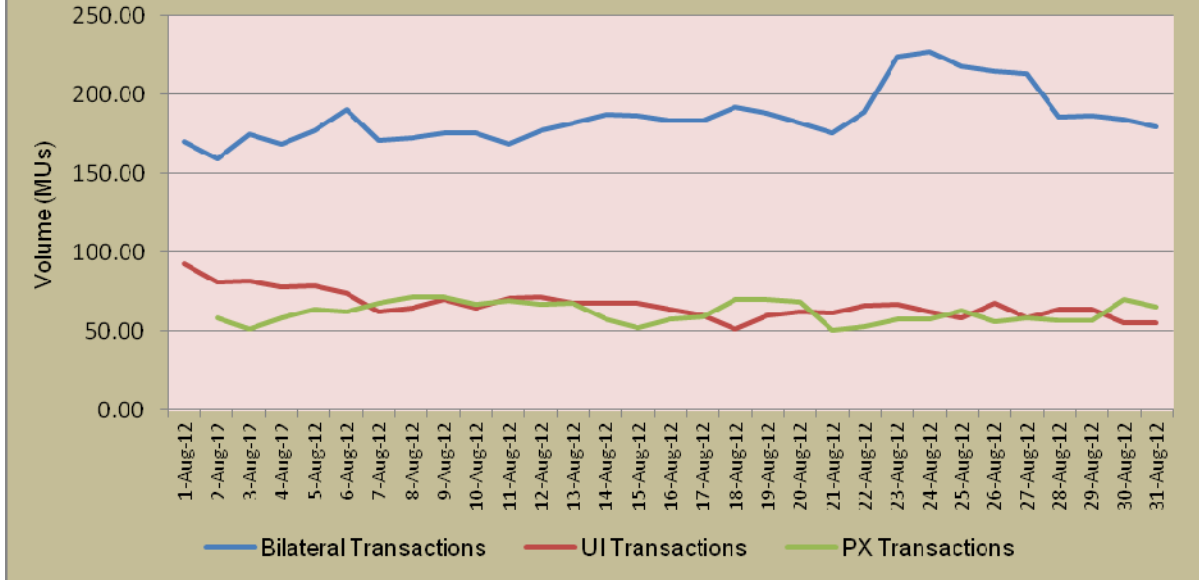


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, AUGUST 2012			
Sr.No	Name of the Trading Licensee	% Share in total Volume transacted by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd	35.00%	0.1225
2	National Energy Trading & Services Ltd	11.92%	0.0142
3	NTPC Vidyut Vyapar Nigam Ltd	10.96%	0.0120
4	Tata Power Trading Company (P) Ltd	9.44%	0.0089
5	JSW Power Trading Company Ltd	8.55%	0.0073
6	Knowledge Infrastructure Systems (P) Ltd	6.70%	0.0045
7	Adani Enterprises Ltd	3.61%	0.0013
8	Reliance Energy Trading (P) Ltd	3.18%	0.0010
9	Shree Cement Ltd.	2.36%	0.0006
10	Jaiprakash Associates Ltd.	1.93%	0.0004
11	Global Energy (P) Ltd.	1.76%	0.0003
12	Essar Electric Power Development Corp. Ltd.	1.38%	0.0002
13	GMR Energy Trading Ltd	1.22%	0.0001
14	RPG Power Trading Company Ltd.	0.98%	0.0001
15	Instinct Infra & Power Ltd.	0.69%	0.0000
16	Manikaran Power Ltd.	0.21%	0.0000
17	Mittal Processors (P) Ltd.	0.11%	0.0000
18	Customized Energy Solutions India Pvt. Ltd.	0.02%	0.0000
TOTAL		100.00%	0.1734
Top 5 trading licensees		75.86%	
<i>Note: Volume of electricity transacted by the trading licensees includes bilateral transactions (inter-state) and the transactions undertaken through power exchanges.</i>			
<i>Source: Information submitted by trading licensees</i>			

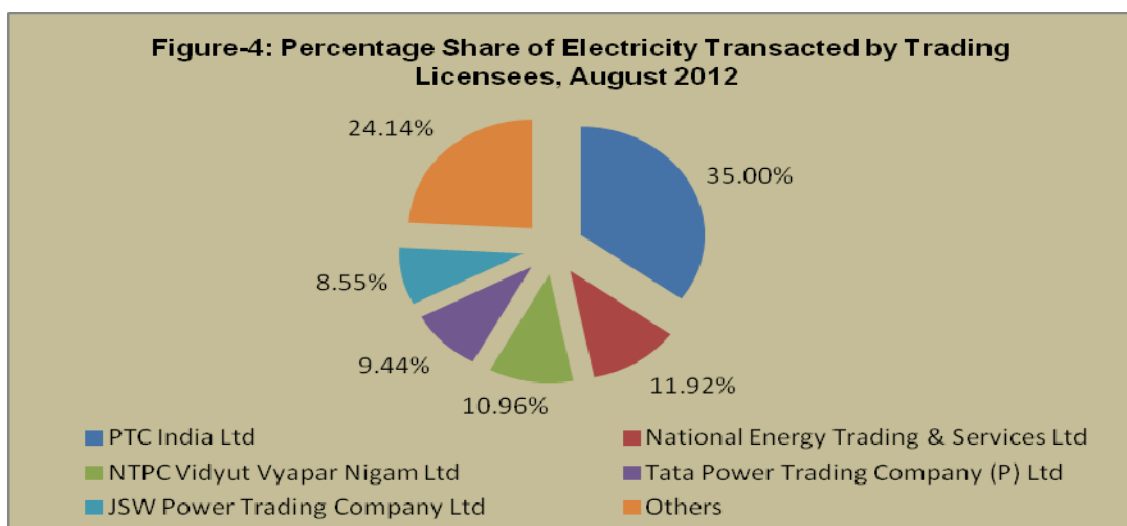


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, AUGUST 2012		
Sr.No		Sale Price of Traders (₹/kWh)
1	Minimum	2.90
2	Maximum	8.04
3	Weighted Average	4.22

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), AUGUST 2012		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	4.22
2	PEAK	4.89
3	OFF PEAK	4.30

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, AUGUST 2012			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	1.00	1.00
2	Maximum	14.61	20.00
3	Weighted Average	3.89	3.53

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, AUGUST 2012			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	8.30	4.50
2	Day-ahead Contingency Contracts	6.05	4.91
3	Weekly Contracts	12.67	5.08
	Total	27.01	4.86

Source: IEX

Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, AUGUST 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 TRANSACTED THROUGH UI, AUGUST 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	2.16	4.12

Source: NLDC

Figure-5: Price of Short-term Transactions of Electricity, August 2012

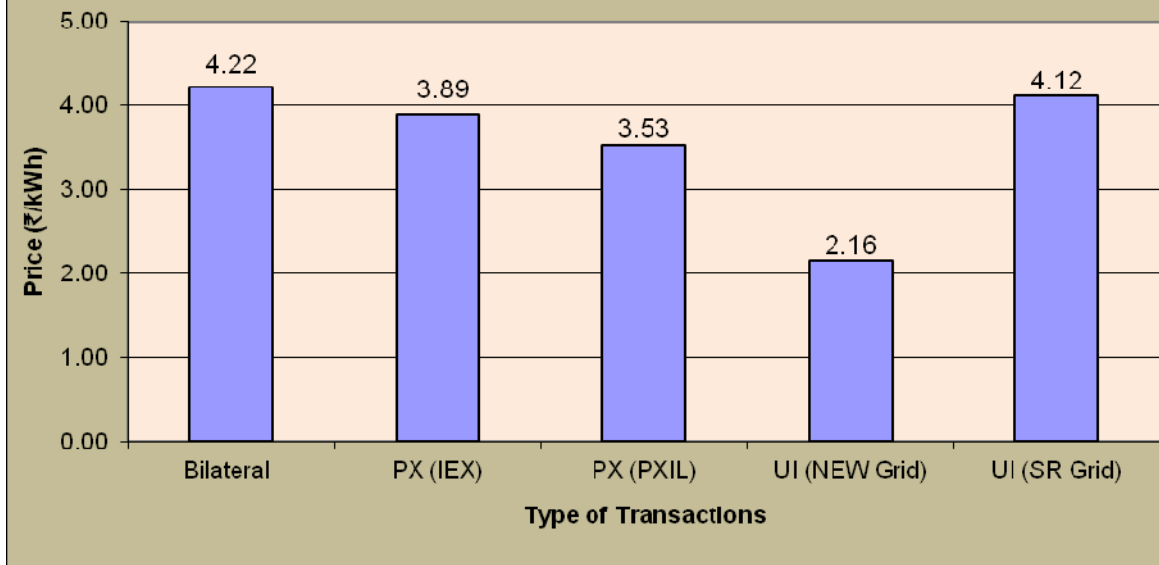


Figure-6: Price of Short-term Transactions of Electricity, August 2012 (Day-wise)

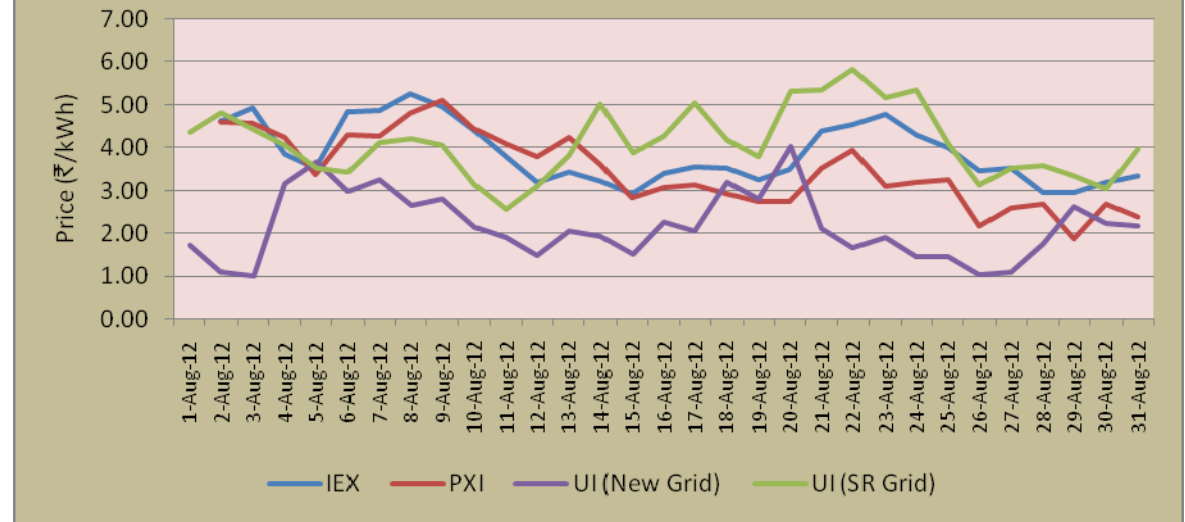


Table-9: VOLUME OF ELECTRICITY SALE THROUGH BILATERAL, AUGUST 2012		
Name of the State/UT/Other Regional Entity	Volume of Sale (MUs)	% of Volume
Gujarat	720.86	13.16%
KARCHAM WANGTOO	593.17	10.83%
JINDAL POWER	516.92	9.44%
Himachal Pradesh	494.44	9.03%
STERLITE	473.71	8.65%
MP	399.09	7.29%
J & K	334.60	6.11%
Karnataka	298.84	5.46%
Rajasthan	212.43	3.88%
DVC	176.66	3.23%
SIMHAPURI	148.01	2.70%
Chattisgarh	142.13	2.60%
LANKO_AMK	116.20	2.12%
ACBIL	111.83	2.04%
AD HYDRO	110.35	2.01%
SHREE CEMENT	107.90	1.97%
Maharashtra	102.77	1.88%
West Bengal	91.94	1.68%
Orissa	87.71	1.60%
LANKO_KONDAPALLY	70.48	1.29%
Uttarakhand	42.43	0.77%
Sikkim	33.20	0.61%
MAITHON POWER LTD	21.46	0.39%
Nagaland	14.76	0.27%
Delhi	14.67	0.27%
Uttar Pradesh	12.12	0.22%
DCPP	11.23	0.20%
Meghalaya	8.99	0.16%
Tripura	7.65	0.14%
Andhra Pradesh	0.48	0.01%
Total	5477.01	100.00%
Volume of sale by top 5 States	2799.10	51.11%

Table-10: VOLUME OF ELECTRICITY PURCHASE THROUGH BILATERAL, AUGUST 2012		
Name of the State/UT/Other Regional Entity	Volume of Purchase (MUs)	% of Volume
Punjab	1224.66	23.25%
Andhra Pradesh	588.22	11.17%
Uttar Pradesh	569.99	10.82%
Haryana	569.89	10.82%
Maharashtra	371.11	7.05%
West Bengal	357.60	6.79%
Delhi	330.87	6.28%
Gujarat	313.92	5.96%
J & K	218.18	4.14%
Tamilnadu	200.48	3.81%
Bihar	175.46	3.33%
Kerala	100.37	1.91%
Jharkhand	74.40	1.41%
Dadra & Nagar Haveli	50.22	0.95%
UT Chandigarh	32.68	0.62%
Assam	27.62	0.52%
Chattisgarh	26.80	0.51%
DVC	8.90	0.17%
Himachal Pradesh	8.31	0.16%
Sikkim	7.87	0.15%
Orissa	3.60	0.07%
Karnataka	2.78	0.05%
Rajasthan	1.97	0.04%
Meenakshi	0.99	0.02%
Tripura	0.23	0.00%
Goa	0.13	0.00%
Total	5267.26	100.00%
Volume of sale by top 5 States	3323.87	63.10%

Table-11: VOLUME OF ELECTRICITY SALE THROUGH POWER EXCHANGES, AUGUST 2012

Name of the State/UT/Other Regional Entity	Volume of Sale (MUs)	% of Volume
MP	392.75	21.10%
Karnataka	222.08	11.93%
Himachal Pradesh	213.58	11.48%
Delhi	119.31	6.41%
KARCHAM WANGTOO	115.03	6.18%
NHPC Stations	96.23	5.17%
Chattisgarh	91.40	4.91%
JINDAL POWER	85.71	4.61%
West Bengal	66.65	3.58%
Gujarat	55.30	2.97%
Andhra Pradesh	52.88	2.84%
LANKO_AMK	45.32	2.44%
DCPP	40.92	2.20%
Orissa	32.81	1.76%
DVC	31.00	1.67%
Sikkim	25.41	1.37%
Rajasthan	24.49	1.32%
AD HYDRO	21.05	1.13%
NEEPCO Stations	20.72	1.11%
SHREE CEMENT	18.50	0.99%
Maharashtra	14.67	0.79%
Goa	12.93	0.69%
UT Chandigarh	12.83	0.69%
MAITHON POWER LTD	10.13	0.54%
SIMHAPURI	8.66	0.47%
STERLITE	7.36	0.40%
J & K	6.07	0.33%
ACBIL	4.29	0.23%
Tripura	3.91	0.21%
Mizoram	3.74	0.20%
Meghalaya	3.03	0.16%
BALCO	1.99	0.11%
Uttarakhand	0.20	0.01%
Total	1860.95	100.00%
Volume of sale by top 5 States	1062.75	57.11%

**Table-12: VOLUME OF ELECTRICITY PURCHASE THROUGH POWER EXCHANGES,
AUGUST 2012**

Name of the State/UT/Other Regional Entity	Volume of Purchase (MUs)	% of Volume
Punjab	369.71	19.87%
Gujarat	312.40	16.79%
Kerala	216.96	11.66%
Uttar Pradesh	213.07	11.45%
Maharashtra	168.68	9.06%
Haryana	148.18	7.96%
Rajasthan	121.85	6.55%
Andhra Pradesh	109.65	5.89%
Uttarakhand	49.11	2.64%
Tamilnadu	48.46	2.60%
West Bengal	46.04	2.47%
MP	22.61	1.21%
Assam	20.65	1.11%
Delhi	8.03	0.43%
Karnataka	3.21	0.17%
Meghalaya	1.80	0.10%
UT Chandigarh	0.50	0.03%
Tripura	0.05	0.00%
Total	1860.95	100.00%
Volume of purchase by top 5 States	1280.81	68.83%

Table-13: VOLUME OF ELECTRICITY EXPORT THROUGH UI, AUGUST 2012		
Name of the State/UT/Other Regional Entity	Volume of Export (MUs)	% of Volume
Delhi	191.73	11.72%
J & K	146.57	8.96%
MP	125.49	7.67%
Uttar Pradesh	117.32	7.17%
Gujarat	81.06	4.95%
Jharkhand	80.47	4.92%
Karnataka	76.59	4.68%
Rajasthan	69.00	4.22%
Himachal Pradesh	67.77	4.14%
NHPC Stations	52.83	3.23%
Tamilnadu	47.23	2.89%
Maharashtra	47.07	2.88%
Haryana	46.45	2.84%
LANKO_AMK	43.11	2.63%
West Bengal	32.31	1.97%
Punjab	25.54	1.56%
Uttarakhand	25.51	1.56%
Dadra & Nagar Haveli	25.36	1.55%
JINDAL POWER	24.29	1.48%
Bihar	24.16	1.48%
Orissa	23.65	1.45%
Chattisgarh	23.13	1.41%
KARCHAM WANGTOO	20.75	1.27%
UT Chandigarh	19.53	1.19%
Goa	18.68	1.14%
DVC	16.72	1.02%
Manipur	16.45	1.01%
Andhra Pradesh	16.26	0.99%
NSPCL	15.43	0.94%
AD HYDRO	10.89	0.67%
Pondicherry	10.37	0.63%
Daman and Diu	8.57	0.52%
Arunachal Pradesh	8.38	0.51%
Meghalaya	7.97	0.49%
Mizoram	7.07	0.43%
ACBIL	6.66	0.41%
Assam	6.26	0.38%
NEEPCO Stations	6.00	0.37%
Nagaland	5.61	0.34%
MAITHON POWER LTD	5.12	0.31%
STERLITE	5.01	0.31%
Tripura	4.30	0.26%
NJPC	4.17	0.25%
SHREE CEMENT	3.73	0.23%
BALCO	3.53	0.22%
Sikkim	3.45	0.21%
CGPL	3.30	0.20%
DCPP	2.66	0.16%
RGPPL(Dabhol)	0.98	0.06%
SIMHAPURI	0.83	0.05%
LANKO_KONDAPALLY	0.41	0.02%
Kerala	0.32	0.02%
Total	1636.03	100.00%
Volume of Export by top 5 States	662.17	40.47%

Table-14: VOLUME OF ELECTRICITY IMPORT THROUGH UI, AUGUST 2012		
Name of the State/UT/Other Regional Entity	Volume of Import (MUs)	% of Volume
Maharashtra	224.39	11.81%
Gujarat	180.13	9.48%
Punjab	116.26	6.12%
Rajasthan	107.52	5.66%
Andhra Pradesh	100.88	5.31%
West Bengal	92.56	4.87%
Uttar Pradesh	91.92	4.84%
Kerala	86.53	4.55%
STERLITE	86.15	4.53%
Haryana	85.85	4.52%
Chattisgarh	82.35	4.33%
DVC	73.43	3.86%
Orissa	71.70	3.77%
MP	51.98	2.74%
Assam	51.27	2.70%
Tamilnadu	51.03	2.69%
Uttarakhand	50.14	2.64%
NHPC Stations	41.65	2.19%
Bihar	30.07	1.58%
RGPPPL(Dabhol)	27.97	1.47%
KARCHAM WANGTOO	23.49	1.24%
Karnataka	15.52	0.82%
JINDAL POWER	12.48	0.66%
DCPP	12.27	0.65%
MAITHON POWER LTD	12.14	0.64%
Delhi	10.28	0.54%
Himachal Pradesh	9.06	0.48%
Goa	8.91	0.47%
J & K	8.22	0.43%
SIMHAPURI	7.86	0.41%
CGPL	7.24	0.38%
Meghalaya	6.86	0.36%
Jharkhand	6.72	0.35%
SHREE CEMENT	6.49	0.34%
Tripura	6.38	0.34%
ACBIL	6.33	0.33%
Sikkim	4.19	0.22%
NEEPCO Stations	4.09	0.22%
Daman and Diu	3.79	0.20%
AD HYDRO	3.59	0.19%
LANKO_AMK	3.52	0.19%
Arunachal Pradesh	3.23	0.17%
NSPCL	3.13	0.16%
LANKO_KONDAPALLY	2.62	0.14%
Pondicherry	2.27	0.12%
Dadra & Nagar Haveli	1.43	0.08%
Nagaland	1.39	0.07%
UT Chandigarh	1.39	0.07%
NJPC	0.87	0.05%
Manipur	0.30	0.02%
BALCO	0.30	0.02%
Mizoram	0.24	0.01%
Total	1900.37	100.00%
Volume of Export by top 5 States	729.18	38.37%

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

Sr.No.	Name of the State/UT/Other Regional Entity	Total volume of net short-term transactions of electricity*
1	Punjab	1685.09
2	Haryana	757.48
3	Uttar Pradesh	745.52
4	Andhra Pradesh	729.14
5	Maharashtra	599.66
6	Kerala	403.53
7	West Bengal	305.30
8	Tamilnadu	252.73
9	Bihar	181.37
10	Assam	93.27
11	Uttarakhand	31.12
12	RGPPL(Dabhol)	26.99
13	Dadra & Nagar Haveli	26.29
14	Delhi	23.46
15	CGPL	3.94
16	UT Chandigarh	2.22
17	Meenakshi	0.99
18	Jharkhand	0.65
19	NJPC	-3.30
20	Daman and Diu	-4.78
21	Arunachal Pradesh	-5.15
22	BALCO	-5.22
23	Pondicherry	-8.10
24	Tripura	-9.20
25	Mizoram	-10.57
26	Meghalaya	-11.33
27	NSPCL	-12.30
28	Manipur	-16.14
29	Nagaland	-18.99
30	Goa	-22.57
31	NEEPCO Stations	-22.61
32	MAITHON POWER LTD	-24.56
33	DCPP	-42.54
34	Sikkim	-49.99
35	Gujarat	-50.77
36	LANKO_KONDAPALLY	-68.26
37	Orissa	-68.86
38	Rajasthan	-74.58
39	NHPC Stations	-107.42
40	ACBIL	-116.45
41	SHREE CEMENT	-123.64
42	AD HYDRO	-138.70
43	DVC	-142.05
44	Chattisgarh	-147.52
45	SIMHAPURI	-149.64
46	LANKO_AMK	-200.06
47	J & K	-260.84
48	STERLITE	-399.92
49	Karnataka	-575.99
50	JINDAL POWER	-614.44
51	KARCHAM WANGTOO	-705.46
52	Himachal Pradesh	-758.41
53	MP	-842.74

* 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 2012			
	Details of Congestion	IEX	PXIL
A	Unconstrained Cleared Volume* (MUs)	2001.34	87.33
B	Actual Cleared Volume and hence scheduled (MUs)	1821.02	39.93
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	180.33	47.40
D	Volume of electricity that could not be cleared as % to Actual Cleared Volume	9.90%	118.72%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	98.96%	99.44%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	24.56%	24.58%
	6.00 - 12.00 hours	25.26%	25.14%
	12.00 - 18.00 hours	25.12%	25.14%
	18.00 - 24.00 hours	25.05%	25.14%
* This power would have been scheduled had there been no congestion.			
Source: IEX & PXIL			