

Monthly Report on Short-term Transactions of Electricity in India

April, 2012



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Contents

S.No	Contents	Page No
	Cover page	1
	Contents	2
	List of Formats, Tables and Charts	3
	Abbreviations	4
	Introduction	5
I	Volume of Short-term Transactions of Electricity	5
II	Price of Short-term Transactions of Electricity	6
(i)	<i>Price of electricity transacted through Traders</i>	6
(ii)	<i>Price of electricity transacted Through Power Exchange</i>	6
(iii)	<i>Price of electricity transacted Through UI</i>	7
III	Volume of Short-term Transactions of Electricity (Regional Entity-wise)	7
IV	Congestion on Inter-state Transmission Corridor for Day-Ahead Market on Power Exchanges	8
V	Inferences	9

List of Formats, Tables and Charts

S.No	List of Formats, Tables and Charts	Page No
I List of Formats		
Format-1	Volume of Short-term Transactions of Electricity in India	10
Format-2	Price of Short-term Transactions of Electricity	11
Format-3	Volume of Short-term Transactions of Electricity (Regional Entity-wise)	12
II List of Tables		
Table-1	Volume of Short-term Transactions of Electricity in India	13
Table-2	Percentage Share of Electricity Transacted by Trading Licensees	15
Table-3	Price of Electricity Transacted through Traders	16
Table-4	Price of Electricity Transacted through Traders (Time-wise)	16
Table-5	Price of Electricity Transacted through Power Exchanges	16
Table-6	Volume and Price of Electricity in Term Ahead Market of IEX	16
Table-7	Volume and Price of Electricity in Term Ahead Market of PXIL	16
Table-8	Price of Electricity Transacted through UI	16
Table-9	Volume of Electricity Sale through Bilateral	18
Table-10	Volume of Electricity Purchase through Bilateral	19
Table-11	Volume of Electricity Sale through Power Exchanges	20
Table-12	Volume of Electricity Purchase through Power Exchanges	21
Table-13	Volume of Electricity Export through UI	22
Table-14	Volume of Electricity Import through UI	23
Table-15	Total Volume of Net Short-term Transactions of Electricity (Regional Entity-wise)	24
Table-16	Details of Congestion in Power Exchanges	25
III List of Charts		
Chart-1	Volume of Short-term Transactions of Electricity	13
Chart-2	Volume of Various Kinds of Electricity Transactions in Total Electricity Generation	13
Chart-3	Volume of Short-term Transactions of Electricity (Day-wise)	14
Chart-4	Percentage Share of Electricity Transacted by Trading Licensees	15
Chart-5	Price of Short-term Transactions of Electricity	17
Chart-6	Price of Short-term Transactions of Electricity (Day-wise)	17

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
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 Ltd. Stations
NLDC	National Load Despatch Centre
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 April 2012 is as under:

I: Volume of Short-term Transactions of Electricity

During the month of April 2012, total electricity generation excluding generation from renewable and captive power plants in India was 74725.25 MUs (Table-1).

Of the total electricity generation, 7308.94 MUs (9.78%) were transacted through short-term, comprising of 3395.69 MUs (4.54%) through Bilateral (through traders and term-ahead contracts on Power Exchanges and directly between distribution companies), followed by 2576.07 MUs (3.45%) through UI and 1337.18 MUs (1.79%) through day ahead collective transactions on Power Exchanges (IEX and PXIL) (Table-1 & Chart-2).

Of the total short-term transactions, Bilateral constitute 46.46% (32.63% through traders and term-ahead contracts on Power Exchanges and 13.83% directly between distribution companies) followed by 35.25% through UI and 18.30% 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 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 41 trading licensees as on 30.04.2012, of which only 16 have engaged in trading during April

2012. Top 5 trading licenses had a share of 80.96% 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 0.2189 for the month of April 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 1283.86 MUs and 53.32 MUs respectively. The volume of total Buy bids and Sale bids was 2715.41 MUs and 2226.21 MUs respectively in IEX and 452.35 MUs and 228.21MUs 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 (1.22 times) and in PXIL (1.98 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 2.62 MUs in IEX (Table-6) and 0.24 MUs 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 ₹4.40/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 ₹4.35/kWh, ₹5.78/kWh and ₹4.95/kWh respectively. Minimum and Maximum sale prices were ₹2.96/kWh and ₹7.07/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, ₹20.00/kWh and ₹3.19/kWh respectively in IEX and ₹1.50/kWh, ₹20.00/kWh and ₹4.71/kWh respectively in PXIL (Table-5).

The weighted average prices of electricity transacted in term-ahead market through the weekly contracts were ₹4.13/kWh and ₹4.00/kWh in IEX (Table 6) and PXIL (Table 7) respectively.

(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 ₹2.81/kWh in the NEW Grid and ₹5.16/kWh in the SR Grid. Minimum and Maximum UI prices were ₹0.00/kWh and ₹12.22/kWh respectively in the New Grid, and ₹0.00/kWh and ₹17.46/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 Chart-5 & 6.

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

Of the total bilateral transactions, top 5 regional entities sold 48.38% of the volume, and these were Sterlite Energy Ltd, Maharashtra, Lanco Amarkantak Power Private Ltd., West Bengal and Jindal Power Ltd. Top 5 regional entities purchased 56.58% of the volume, and these were West Bengal, Maharashtra, Bihar, Uttar Pradesh and Delhi (Table-9 & 10).

Of the total Power Exchange transactions, top 5 regional entities sold 57.85% of the volume, and these were NHPC Stations, Delhi, Chattisgarh, Gujarat and Jindal Power Ltd. Top 5 regional entities purchased 77.09% of the volume, and these were Punjab, Gujarat, Rajasthan, Maharashtra and Uttar Pradesh (Table-11 & 12).

Of the total UI transactions, top 5 regional entities underdrew 48.24% of the volume, and these were Delhi, Gujarat, Madhya Pradesh, West Bengal and Bihar. Top 5 regional entities overdrew 56.04% of the volume, and these were Uttar Pradesh, Rajasthan, Maharashtra, Uttarakhand and Haryana (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 Jindal Power Ltd., Sterlite Energy Ltd., Lanco Amarkantak Power Private Ltd, NHPC Stations and Delhi. Top 5 electricity purchasing regional entities were Uttar Pradesh, Maharashtra, Punjab, Tamilnadu and Rajasthan.

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 April 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 about 24% and 243% of the actual cleared volume in IEX and PXIL, respectively. In percentage terms, it was 100% of the operating time in both the exchanges.

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 9.78%.
- Of the total short-term transactions of electricity, 46.46% was transacted through bilateral (through traders and term ahead contracts on power exchanges and directly by distribution companies), followed by 35.25% through UI and 18.30% through Power Exchanges.
- Top 5 trading licensees had a share of 80.96% in the total volume traded by all the trading licensees.
- The Herfindahl Hirschman Index computed for volume of electricity traded by trading licensees was 0.2189, indicating moderate concentration of market power.
- The price of electricity transacted through trading licensees (₹4.40/kWh) was higher when compared with the price of electricity transacted through IEX (₹3.19/kWh) and it was lower when compared with the price of electricity transacted through PXIL (₹4.71/kWh).
- The price of electricity transacted through UI was ₹2.81/kWh in the NEW Grid and ₹5.16/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 (1:1.22) and in PXIL (1:1.98) when compared with the supply offered through these exchanges.
- Top 5 electricity selling regional entities were Jindal Power Ltd., Sterlite Energy Ltd., Lanco Amarkantak Power Private Ltd, NHPC Stations and Delhi. Top 5 electricity purchasing regional entities were Uttar Pradesh, Maharashtra, Punjab, Tamilnadu and Rajasthan.
- The volume of electricity that could not be cleared in the power exchanges due to congestion was about 24% and 243% of the actual cleared volume in IEX and PXIL respectively. In percentage terms, congestion occurred 100% of the time in both the power exchanges.

Format-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA (MUs), APRIL 2012						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		
1-Apr-12	76.42	28.51	41.20	1.33	83.96	2489.54
2-Apr-12	77.51	28.21	43.11	1.22	78.16	2555.90
3-Apr-12	85.21	32.65	46.68	1.97	82.46	2576.22
4-Apr-12	81.75	29.50	48.20	1.96	91.78	2569.67
5-Apr-12	81.80	32.34	44.26	0.90	98.89	2519.67
6-Apr-12	80.90	31.27	51.32	1.75	85.88	2523.19
7-Apr-12	79.18	31.74	46.81	1.49	87.70	2539.89
8-Apr-12	77.47	29.75	46.84	1.63	86.05	2482.83
9-Apr-12	79.96	31.62	47.63	1.29	80.32	2558.85
10-Apr-12	80.78	31.45	50.79	1.80	89.74	2530.28
11-Apr-12	82.54	32.21	48.73	1.19	76.79	2462.04
12-Apr-12	83.85	32.27	42.68	1.53	81.70	2478.20
13-Apr-12	84.19	29.18	42.47	1.54	84.89	2460.77
14-Apr-12	76.44	27.15	42.33	1.41	80.59	2461.84
15-Apr-12	70.71	29.62	43.94	1.34	83.12	2414.35
16-Apr-12	74.60	33.28	39.65	1.43	80.75	2505.81
17-Apr-12	73.41	35.80	43.93	1.18	82.35	2517.55
18-Apr-12	74.16	36.47	39.62	1.55	89.13	2511.06
19-Apr-12	75.60	33.65	38.85	1.79	88.19	2505.58
20-Apr-12	78.06	32.97	33.27	2.03	83.79	2512.97
21-Apr-12	76.23	32.57	34.70	2.50	85.13	2507.96
22-Apr-12	74.62	31.05	38.90	2.25	96.79	2441.17
23-Apr-12	75.50	34.92	42.52	2.41	87.88	2495.12
24-Apr-12	81.64	35.58	45.75	2.76	86.71	2515.63
25-Apr-12	80.73	37.91	37.12	1.97	94.33	2467.00
26-Apr-12	81.95	43.43	36.42	2.40	99.86	2438.17
27-Apr-12	84.98	41.17	34.25	1.83	89.56	2452.95
28-Apr-12	86.21	41.98	40.02	2.26	85.34	2448.09
29-Apr-12	84.20	40.49	45.04	2.11	77.10	2392.15
30-Apr-12	84.13	42.22	46.82	2.51	77.12	2390.80
Total	2384.71	1010.98	1283.86	53.32	2576.07	74725.25
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), APRIL 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-Apr-12	2.00	16.01	3.14	2.50	17.56	5.68	0.00	4.97	2.01	1.71	7.79	4.65
2-Apr-12	2.16	11.00	3.32	2.50	17.96	6.03	0.62	12.22	3.30	2.02	8.26	4.10
3-Apr-12	1.78	16.01	3.29	2.80	13.87	5.05	1.09	12.22	4.45	2.33	17.46	6.48
4-Apr-12	2.07	16.01	3.56	2.80	14.00	4.94	0.00	12.22	3.46	2.17	12.22	5.92
5-Apr-12	2.50	18.00	3.70	2.50	20.00	5.70	0.00	6.38	2.48	2.48	17.46	7.01
6-Apr-12	1.70	17.00	3.32	2.58	17.00	4.58	0.00	6.85	2.32	0.47	12.22	5.71
7-Apr-12	1.45	14.01	3.11	2.50	14.27	4.93	0.00	12.22	2.71	1.40	12.22	5.76
8-Apr-12	1.40	18.10	2.63	2.30	18.01	5.28	0.00	7.79	2.29	0.93	12.22	5.04
9-Apr-12	1.78	18.10	2.94	2.59	18.00	5.40	0.00	12.22	2.91	1.09	12.22	5.88
10-Apr-12	1.78	19.00	3.01	2.59	17.87	5.67	0.00	4.50	2.21	0.93	12.22	6.45
11-Apr-12	1.80	19.10	2.87	2.20	17.00	4.24	0.00	3.72	1.45	1.55	12.22	5.64
12-Apr-12	1.50	19.50	2.35	1.89	18.00	4.07	0.00	5.44	1.95	1.55	12.22	5.66
13-Apr-12	1.40	19.10	2.16	1.80	16.00	3.83	0.00	4.50	1.54	1.09	8.26	4.71
14-Apr-12	1.70	20.00	2.44	1.50	18.50	3.91	0.31	12.22	2.65	2.02	12.22	5.73
15-Apr-12	1.20	20.00	2.41	1.80	19.00	5.58	0.00	12.22	2.64	1.09	8.26	4.80
16-Apr-12	1.89	20.00	3.01	2.00	17.37	4.90	1.24	7.79	3.27	0.00	12.22	4.84
17-Apr-12	2.00	20.00	3.10	2.01	19.00	5.15	1.09	12.22	3.76	0.93	12.22	5.30
18-Apr-12	2.18	19.75	3.42	2.60	16.00	5.03	0.78	12.22	3.71	2.48	17.46	6.46
19-Apr-12	2.04	19.60	3.38	2.55	17.36	5.26	2.02	12.22	5.43	0.16	12.22	6.18
20-Apr-12	2.50	19.75	3.57	2.35	17.61	4.82	0.31	12.22	3.36	1.24	12.22	6.05
21-Apr-12	2.79	19.75	3.72	2.60	17.46	4.36	0.78	12.22	3.03	0.62	8.26	4.47
22-Apr-12	1.75	20.00	3.48	2.40	20.00	4.54	0.00	5.44	2.16	2.02	12.22	6.31
23-Apr-12	2.50	16.51	3.75	2.70	14.00	4.39	0.78	7.79	2.91	1.55	12.22	5.11
24-Apr-12	2.50	19.75	3.46	2.50	16.76	3.96	0.00	7.32	3.26	0.62	12.22	5.18
25-Apr-12	2.60	17.00	3.67	2.80	17.46	4.23	0.47	12.22	3.43	0.00	8.26	4.74
26-Apr-12	2.70	19.88	3.68	2.99	17.61	4.67	0.00	8.26	3.43	0.47	12.22	4.21
27-Apr-12	2.80	19.10	3.77	2.80	14.00	4.92	0.31	7.32	2.59	0.00	7.79	3.35
28-Apr-12	2.60	14.51	3.71	2.60	14.00	4.41	0.00	4.50	1.73	0.00	7.79	3.64
29-Apr-12	2.20	19.75	3.13	2.00	18.00	4.00	0.00	3.57	1.61	0.00	6.38	2.69
30-Apr-12	2.40	19.75	3.27	2.47	14.56	4.24	0.00	5.44	2.13	0.00	6.38	2.74
	1.20#	20.00#	3.19	1.50#	20.00#	4.71	0.00#	12.22#	2.81	0.00#	17.46#	5.16

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), APRIL 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	70.87	10.90	-59.97	0.50	366.64	366.14	64.44	73.58	9.14	315.31
Haryana	90.48	133.15	42.67	0.01	87.27	87.27	109.83	153.99	44.16	174.09
Rajasthan	241.00	12.76	-228.24	39.14	182.03	142.89	30.71	368.83	338.12	252.77
Delhi	40.79	230.05	189.26	142.25	0.10	-142.15	278.86	2.28	-276.58	-229.47
Uttar Pradesh	0.00	243.31	243.31	4.23	95.67	91.44	24.46	551.85	527.39	862.14
Uttarakhand	39.06	58.04	18.98	0.00	5.07	5.07	7.00	163.35	156.35	180.40
Himachal Pradesh	61.69	78.26	16.57	92.42	0.00	-92.42	71.17	28.05	-43.11	-118.97
J & K	252.89	0.00	-252.89	3.07	0.00	-3.07	21.88	75.20	53.32	-202.63
UT Chandigarh	0.00	8.09	8.09	2.89	0.31	-2.58	10.66	6.72	-3.94	1.57
MP	6.98	44.31	37.33	58.50	9.77	-48.73	199.24	11.05	-188.19	-199.59
Maharashtra	337.03	510.70	173.67	19.13	138.66	119.52	63.69	280.45	216.76	509.96
Gujarat	121.44	181.89	60.45	120.61	247.89	127.28	235.70	61.95	-173.76	13.98
Chattisgarh	196.41	198.28	1.87	133.03	0.00	-133.03	40.79	80.94	40.15	-91.01
Daman and Diu	0.00	14.04	14.04	0.00	0.00	0.00	4.36	4.46	0.10	14.14
Dadra & Nagar Haveli	0.00	90.72	90.72	0.00	0.00	0.00	17.64	1.68	-15.97	74.75
Andhra Pradesh	0.00	138.92	138.92	40.89	24.51	-16.38	36.53	57.50	20.97	143.51
Karnataka	6.25	60.26	54.01	0.00	0.25	0.25	49.82	21.01	-28.81	25.45
Kerala	0.00	26.63	26.63	0.16	38.21	38.05	3.50	121.04	117.54	182.22
Tamilnadu	0.00	92.33	92.33	0.00	84.63	84.63	18.62	94.53	75.91	252.87
Pondicherry	0.00	0.00	0.00	0.00	0.00	0.00	49.11	0.02	-49.09	-49.09
Goa	0.00	4.80	4.80	0.00	0.00	0.00	3.15	35.28	32.13	36.93
West Bengal	268.42	641.23	372.81	78.50	24.27	-54.22	148.20	68.53	-79.67	238.92
Orissa	0.00	154.79	154.79	0.00	7.68	7.68	25.49	62.85	37.37	199.83
Bihar	0.00	296.10	296.10	0.00	0.00	0.00	127.61	0.64	-126.98	169.12
Jharkhand	0.00	72.00	72.00	0.00	0.00	0.00	50.97	7.65	-43.32	28.68
Sikkim	20.53	1.66	-18.87	15.16	0.00	-15.16	11.45	2.03	-9.42	-43.45
DVC	190.24	0.00	-190.24	17.79	0.00	-17.79	42.86	51.06	8.19	-199.84
Arunachal Pradesh	0.00	0.00	0.00	0.00	7.09	7.09	1.82	16.20	14.39	21.47
Assam	0.00	76.26	76.26	9.42	14.41	4.99	30.04	21.59	-8.45	72.80
Manipur	0.00	0.00	0.00	0.00	0.00	0.00	5.08	3.10	-1.98	-1.98
Meghalaya	0.00	8.10	8.10	1.40	2.62	1.21	2.73	23.08	20.35	29.66
Mizoram	0.00	0.00	0.00	0.00	0.00	0.00	0.78	6.11	5.33	5.33
Nagaland	0.00	0.00	0.00	0.00	0.00	0.00	0.26	13.29	13.03	13.03
Tripura	0.18	7.20	7.02	0.22	0.00	-0.22	13.67	2.57	-11.11	-4.30
NHPC Stations	0.00	0.00	0.00	270.99	0.00	-270.99	73.83	64.14	-9.69	-280.68
AD HYDRO	27.60	0.00	-27.60	4.24	0.00	-4.24	1.04	3.67	2.63	-29.20
KARCHAM WANGTOO	134.65	0.00	-134.65	80.37	0.00	-80.37	6.76	9.25	2.49	-212.54
SHREE CEMENT	13.98	0.00	-13.98	0.14	0.00	-0.14	4.12	12.68	8.56	-5.56
JINDAL POWER	263.60	0.00	-263.60	106.65	0.00	-106.65	51.28	14.63	-36.66	-406.90
LANCO_AMK	333.36	0.00	-333.36	0.00	0.00	0.00	15.51	8.01	-7.50	-340.86
NSPCL	54.36	0.00	-54.36	0.00	0.00	0.00	3.08	1.30	-1.78	-56.14
ACBIL	60.71	0.00	-60.71	6.30	0.00	-6.30	1.33	1.41	0.08	-66.93
BALCO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RGPPL(Dabhol)	0.00	0.00	0.00	0.00	0.00	0.00	6.13	2.14	-3.99	-3.99
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	2.60	5.74	3.13	3.13
DCPP	0.00	0.00	0.00	23.38	0.00	-23.38	5.16	7.06	1.90	-21.48
LANCO_KONDAPALLY	108.06	0.00	-108.06	0.00	0.00	0.00	1.61	3.97	2.35	-105.71
SIMHAPURI	0.00	0.00	0.00	0.00	0.11	0.11	48.09	0.53	-47.56	-47.46
Meenakshi	0.00	0.95	0.95	0.00	0.00	0.00	0.00	0.00	0.00	0.95
STERLITE	426.44	0.00	-426.44	0.00	0.00	0.00	13.99	92.59	78.60	-347.85
MAITHON POWER LTD	0.00	0.00	0.00	53.47	0.00	-53.47	10.38	6.27	-4.11	-57.59
NEEPCO Stations	0.00	0.00	0.00	12.33	0.00	-12.33	4.49	3.78	-0.71	-13.04

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), APRIL 2012

Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	3395.69	46.46%	4.54%
	(i) Through Traders and PXs	2384.71	32.63%	3.19%
	(ii) Direct	1010.98	13.83%	1.35%
2	Through Power Exchanges	1337.18	18.30%	1.79%
	IEX	1283.86	17.57%	1.72%
	PXIL	53.32	0.73%	0.07%
3	Through UI	2576.07	35.25%	3.45%
	Total	7308.94	100.00%	9.78%
	Total Generation	74725.25	–	–

Source: NLDC

Chart-1: Volume of Short-term Transactions of Electricity, April 2012

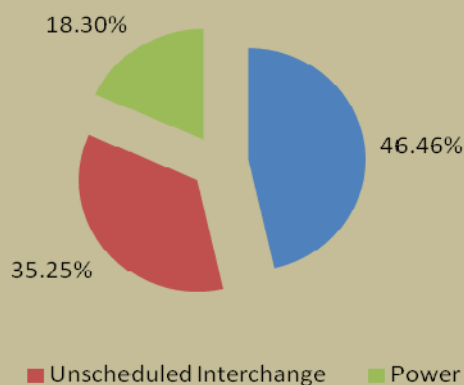
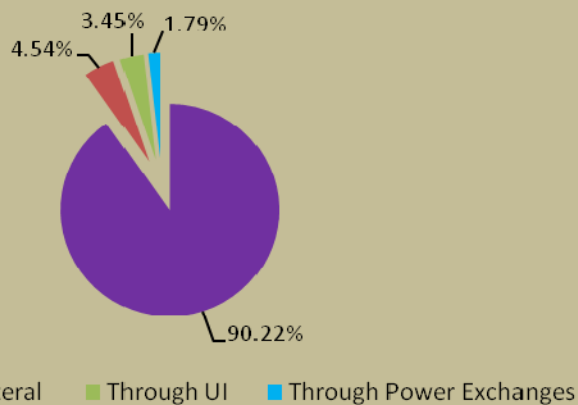


Chart-2: Volume of Various Kinds of Electricity Transactions in Total Electricity Generation, April 2012



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

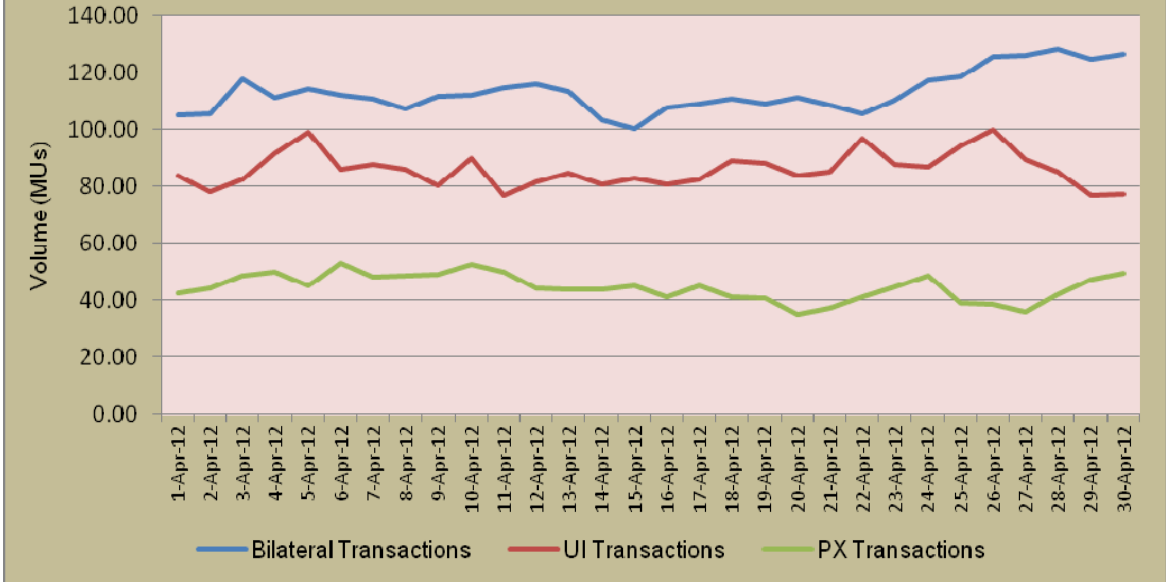


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, APRIL 2012			
Sr.No	Name of the Trading Licensee	% Share in total Volume transacted by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd	40.96%	0.1678
2	NTPC Vidyut Vyapar Nigam Ltd	15.74%	0.0248
3	National Energy Trading & Services Ltd	10.10%	0.0102
4	Tata Power Trading Company (P) Ltd	8.44%	0.0071
5	Knowledge Infrastructure Systems (P) Ltd	5.73%	0.0033
6	Reliance Energy Trading (P) Ltd	4.45%	0.0020
7	Adani Enterprises Ltd	4.26%	0.0018
8	GMR Energy Trading Ltd	3.12%	0.0010
9	Instinct Infra & Power Ltd.	2.11%	0.0004
10	Jaiprakash Associate Ltd.	1.47%	0.0002
11	Shree Cement Ltd.	1.02%	0.0001
12	RPG Power Trading Company Ltd.	0.89%	0.0001
13	Essar Electric Power Development Corp. Ltd.	0.77%	0.0001
14	Global Energy (P) Ltd.	0.62%	0.0000
15	JSW Power Trading Company Ltd	0.26%	0.0000
16	Jindal Power Trading Company Ltd.	0.06%	0.0000
	TOTAL	100.00%	0.2189
	Top 5 trading licensees	80.96%	
<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>			

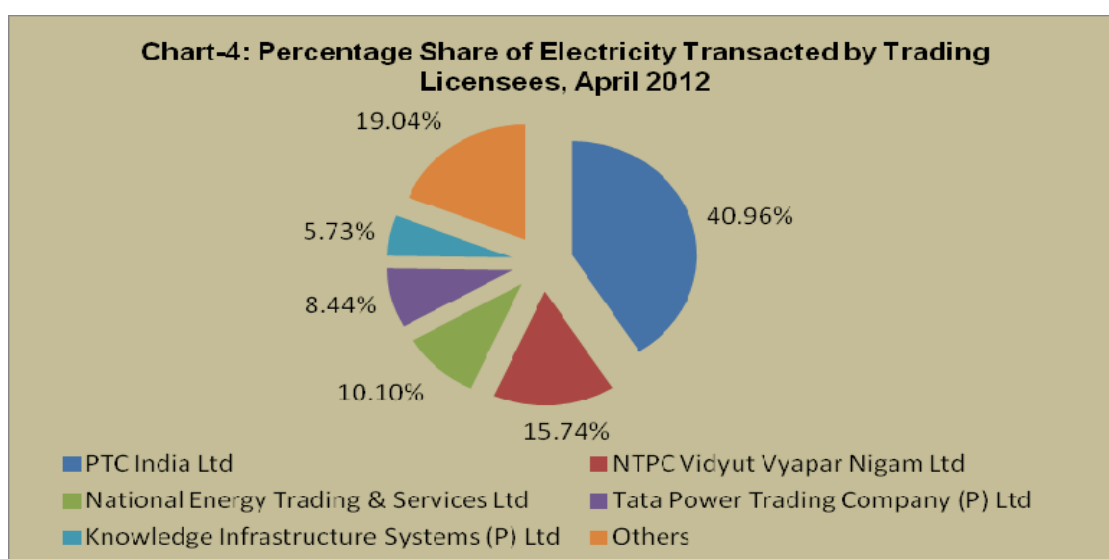


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, APRIL 2012		
Sr.No		Sale Price of Traders (₹/kWh)
1	Minimum	2.96
2	Maximum	7.07
3	Weighted Average	4.40

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), APRIL 2012		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	4.35
2	PEAK	5.78
3	OFF PEAK	4.95

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, APRIL 2012			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	1.20	1.50
2	Maximum	20.00	20.00
3	Weighted Average	3.19	4.71

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, APRIL 2012			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	2.45	3.84
2	Day-ahead Contingency Contracts	0.42	3.45
3	Weekly Contracts	2.62	4.13
	Total	5.49	3.95

Source: IEX

Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, APRIL 2012			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Day-Ahead Contingency Contracts	2.93	3.55
2	Weekly Contracts	0.24	4.00
	Total	3.16	3.59

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH UI, APRIL 2012			
Sr.No		Price in NEW Grid (₹/kWh)	Price in SR Grid (₹/kWh)
1	Minimum	0.00	0.00
2	Maximum	12.22	17.46
3	Average	2.81	5.16

Source: NLDC

Chart-5: Price of Short-term Transactions of Electricity, April 2012

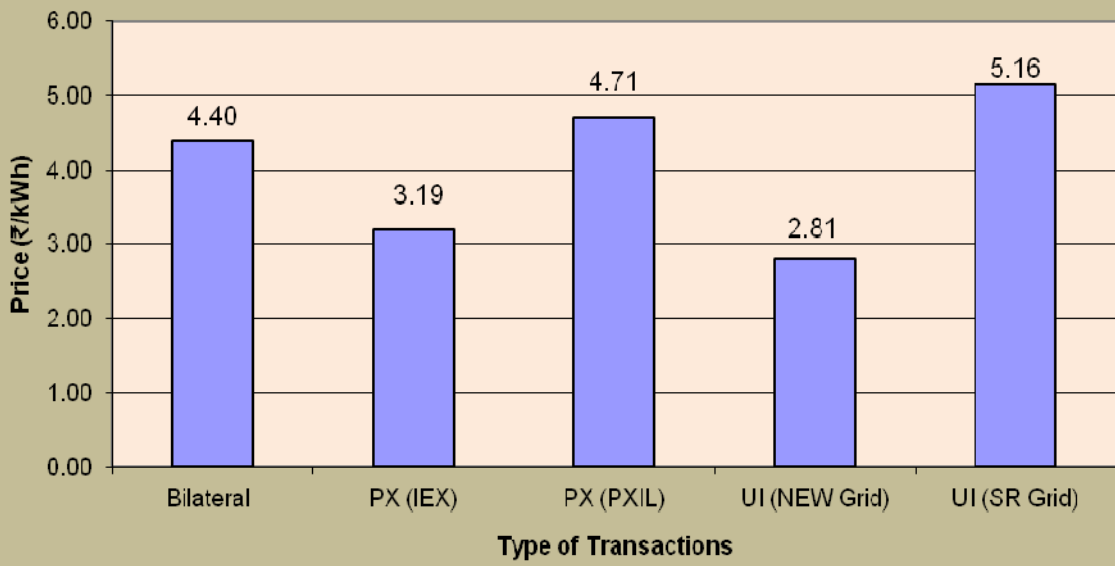


Chart-6: Price of Short-term Transactions of Electricity, April 2012 (Day-wise)

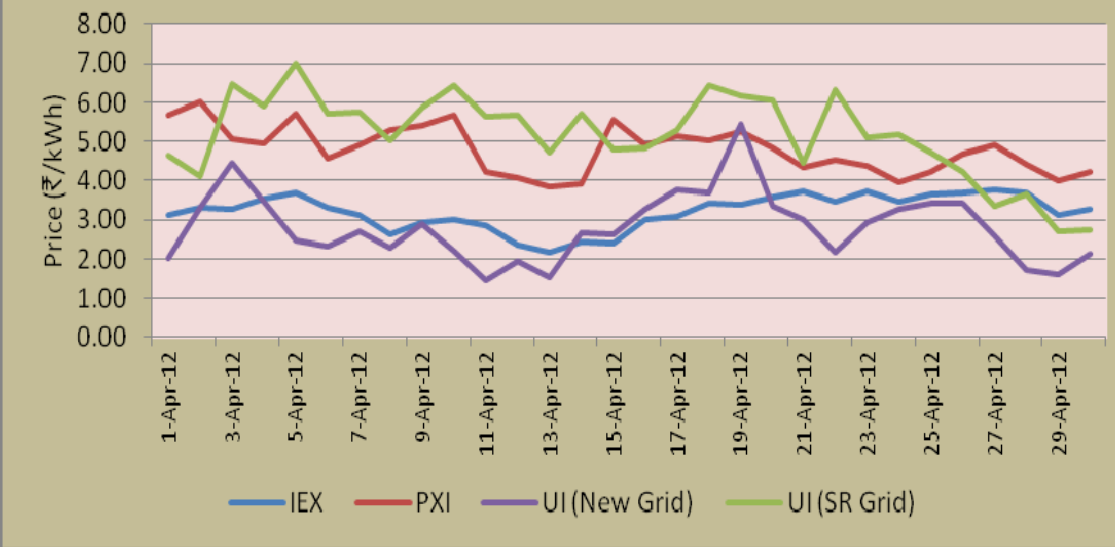


Table-9: VOLUME OF ELECTRICITY SALE THROUGH BILATERAL, APRIL 2012		
Name of the State/UT/Other Regional Entity	Volume of Sale (MUs)	% of Volume
STERLITE	426.44	12.67%
Maharashtra	337.03	10.01%
LANKO_AMK	333.36	9.90%
West Bengal	268.42	7.97%
JINDAL POWER	263.60	7.83%
J & K	252.89	7.51%
Rajasthan	241.00	7.16%
Chattisgarh	196.41	5.83%
DVC	190.24	5.65%
KARCHAM WANGTOO	134.65	4.00%
Gujarat	121.44	3.61%
LANKO_KONDAPALLY	108.06	3.21%
Haryana	90.48	2.69%
Punjab	70.87	2.10%
Himachal Pradesh	61.69	1.83%
ACBIL	60.71	1.80%
NSPCL	54.36	1.61%
Delhi	40.79	1.21%
Uttarakhand	39.06	1.16%
AD HYDRO	27.60	0.82%
Sikkim	20.53	0.61%
SHREE CEMENT	13.98	0.42%
MP	6.98	0.21%
Karnataka	6.25	0.19%
Tripura	0.18	0.01%
Total	3367.04	100.00%
Volume of sale by top 5 States	1628.85	48.38%

Table-10: VOLUME OF ELECTRICITY PURCHASE THROUGH BILATERAL, APRIL 2012

Name of the State/UT/Other Regional Entity	Volume of Purchase (MUs)	% of Volume
West Bengal	641.23	18.88%
Maharashtra	510.70	15.04%
Bihar	296.10	8.72%
Uttar Pradesh	243.31	7.17%
Delhi	230.05	6.77%
Chattisgarh	198.28	5.84%
Gujarat	181.89	5.36%
Orissa	154.79	4.56%
Andhra Pradesh	138.92	4.09%
Haryana	133.15	3.92%
Tamilnadu	92.33	2.72%
Dadra & Nagar Haveli	90.72	2.67%
Himachal Pradesh	78.26	2.30%
Assam	76.26	2.25%
Jharkhand	72.00	2.12%
Karnataka	60.26	1.77%
Uttarakhand	58.04	1.71%
MP	44.31	1.30%
Kerala	26.63	0.78%
Daman and Diu	14.04	0.41%
Rajasthan	12.76	0.38%
Punjab	10.90	0.32%
Meghalaya	8.10	0.24%
UT Chandigarh	8.09	0.24%
Tripura	7.20	0.21%
Goa	4.80	0.14%
Sikkim	1.66	0.05%
Meenakshi	0.95	0.03%
Total	3395.74	100.00%
Volume of sale by top 5 States	1921.40	56.58%

Table-11: VOLUME OF ELECTRICITY SALE THROUGH POWER EXCHANGES, APRIL 2012		
Name of the State/UT/Other Regional Entity	Volume of Sale (MUs)	% of Volume
NHPC Stations	270.99	20.27%
Delhi	142.25	10.64%
Chattisgarh	133.03	9.95%
Gujarat	120.61	9.02%
JINDAL POWER	106.65	7.98%
Himachal Pradesh	92.42	6.91%
KARCHAM WANGTOO	80.37	6.01%
West Bengal	78.50	5.87%
MP	58.50	4.37%
MAITHON POWER LTD	53.47	4.00%
Andhra Pradesh	40.89	3.06%
Rajasthan	39.14	2.93%
DCPP	23.38	1.75%
Maharashtra	19.13	1.43%
DVC	17.79	1.33%
Sikkim	15.16	1.13%
NEEPCO Stations	12.33	0.92%
Assam	9.42	0.70%
ACBIL	6.30	0.47%
AD HYDRO	4.24	0.32%
Uttar Pradesh	4.23	0.32%
J & K	3.07	0.23%
UT Chandigarh	2.89	0.22%
Meghalaya	1.40	0.10%
Punjab	0.50	0.04%
Tripura	0.22	0.02%
Kerala	0.16	0.01%
SHREE CEMENT	0.14	0.01%
Haryana	0.01	0.00%
Total	1337.18	100.00%
Volume of sale by top 5 States	773.53	57.85%

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

Name of the State/UT/Other Regional Entity	Volume of Purchase (MUs)	% of Volume
Punjab	366.64	27.42%
Gujarat	247.89	18.54%
Rajasthan	182.03	13.61%
Maharashtra	138.66	10.37%
Uttar Pradesh	95.67	7.15%
Haryana	87.27	6.53%
Tamilnadu	84.63	6.33%
Kerala	38.21	2.86%
Andhra Pradesh	24.51	1.83%
West Bengal	24.27	1.82%
Assam	14.41	1.08%
MP	9.77	0.73%
Orissa	7.68	0.57%
Arunachal Pradesh	7.09	0.53%
Uttarakhand	5.07	0.38%
Meghalaya	2.62	0.20%
UT Chandigarh	0.31	0.02%
Karnataka	0.25	0.02%
SIMHAPURI	0.11	0.01%
Delhi	0.10	0.01%
Total	1337.18	100.00%
Volume of purchase by top 5 States	1030.88	77.09%

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

Name of the State/UT/Other Regional Entity	Volume of Export (MUs)	% of Volume
Delhi	278.86	13.59%
Gujarat	235.70	11.49%
MP	199.24	9.71%
West Bengal	148.20	7.22%
Bihar	127.61	6.22%
Haryana	109.83	5.35%
NHPC Stations	73.83	3.60%
Himachal Pradesh	71.17	3.47%
Punjab	64.44	3.14%
Maharashtra	63.69	3.10%
JINDAL POWER	51.28	2.50%
Jharkhand	50.97	2.48%
Karnataka	49.82	2.43%
Pondicherry	49.11	2.39%
SIMHAPURI	48.09	2.34%
DVC	42.86	2.09%
Chattisgarh	40.79	1.99%
Andhra Pradesh	36.53	1.78%
Rajasthan	30.71	1.50%
Assam	30.04	1.46%
Orissa	25.49	1.24%
Uttar Pradesh	24.46	1.19%
J & K	21.88	1.07%
Tamilnadu	18.62	0.91%
Dadra & Nagar Haveli	17.64	0.86%
LANKO_AMK	15.51	0.76%
STERLITE	13.99	0.68%
Tripura	13.67	0.67%
Sikkim	11.45	0.56%
UT Chandigarh	10.66	0.52%
MAITHON POWER LTD	10.38	0.51%
Uttarakhand	7.00	0.34%
KARCHAM WANGTOO	6.76	0.33%
RGPPL(Dabhol)	6.13	0.30%
DCPP	5.16	0.25%
Manipur	5.08	0.25%
NEEPCO Stations	4.49	0.22%
Daman and Diu	4.36	0.21%
SHREE CEMENT	4.12	0.20%
Kerala	3.50	0.17%
Goa	3.15	0.15%
NSPCL	3.08	0.15%
Meghalaya	2.73	0.13%
CGPL	2.60	0.13%
Arunachal Pradesh	1.82	0.09%
LANKO_KONDAPALLY	1.61	0.08%
ACBIL	1.33	0.07%
AD HYDRO	1.04	0.05%
Mizoram	0.78	0.04%
Nagaland	0.26	0.01%
Total	2051.53	100.00%
Volume of Export by top 5 States	989.61	48.24%

Table-14: VOLUME OF ELECTRICITY IMPORT THROUGH UI, APRIL 2012

Name of the State/UT/Other Regional Entity	Volume of Import (MUs)	% of Volume
Uttar Pradesh	551.85	20.37%
Rajasthan	368.83	13.61%
Maharashtra	280.45	10.35%
Uttarakhand	163.35	6.03%
Haryana	153.99	5.68%
Kerala	121.04	4.47%
Tamilnadu	94.53	3.49%
STERLITE	92.59	3.42%
Chattisgarh	80.94	2.99%
J & K	75.20	2.78%
Punjab	73.58	2.72%
West Bengal	68.53	2.53%
NHPC Stations	64.14	2.37%
Orissa	62.85	2.32%
Gujarat	61.95	2.29%
Andhra Pradesh	57.50	2.12%
DVC	51.06	1.88%
Goa	35.28	1.30%
Himachal Pradesh	28.05	1.04%
Meghalaya	23.08	0.85%
Assam	21.59	0.80%
Karnataka	21.01	0.78%
Arunachal Pradesh	16.20	0.60%
JINDAL POWER	14.63	0.54%
Nagaland	13.29	0.49%
SHREE CEMENT	12.68	0.47%
MP	11.05	0.41%
KARCHAM WANGTOO	9.25	0.34%
LANKO_AMK	8.01	0.30%
Jharkhand	7.65	0.28%
DCPP	7.06	0.26%
UT Chandigarh	6.72	0.25%
MAITHON POWER LTD	6.27	0.23%
Mizoram	6.11	0.23%
CGPL	5.74	0.21%
Daman and Diu	4.46	0.16%
LANKO_KONDAPALLY	3.97	0.15%
NEEPCO Stations	3.78	0.14%
AD HYDRO	3.67	0.14%
Manipur	3.10	0.11%
Tripura	2.57	0.09%
Delhi	2.28	0.08%
RGPPL(Dabhol)	2.14	0.08%
Sikkim	2.03	0.07%
Dadra & Nagar Haveli	1.68	0.06%
ACBIL	1.41	0.05%
NSPCL	1.30	0.05%
Bihar	0.64	0.02%
SIMHAPURI	0.53	0.02%
Total	2709.55	100.00%
Volume of Export by top 5 States	1518.47	56.04%

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

Sr.No	Name of the State/UT/Other Regional Entity	Total volume of net short-term transactions of electricity*
1	Uttar Pradesh	862.14
2	Maharashtra	509.96
3	Punjab	315.31
4	Tamilnadu	252.87
5	Rajasthan	252.77
6	West Bengal	238.92
7	Orissa	199.83
8	Kerala	182.22
9	Uttarakhand	180.40
10	Haryana	174.09
11	Bihar	169.12
12	Andhra Pradesh	143.51
13	Dadra & Nagar Haveli	74.75
14	Assam	72.80
15	Goa	36.93
16	Meghalaya	29.66
17	Jharkhand	28.68
18	Karnataka	25.45
19	Arunachal Pradesh	21.47
20	Daman and Diu	14.14
21	Gujarat	13.98
22	Nagaland	13.03
23	Mizoram	5.33
24	CGPL	3.13
25	UT Chandigarh	1.57
26	Meenakshi	0.95
27	BALCO	0.00
28	Manipur	-1.98
29	RGPP(LDabhol)	-3.99
30	Tripura	-4.30
31	SHREE CEMENT	-5.56
32	NEEPCO Stations	-13.04
33	DCPP	-21.48
34	AD HYDRO	-29.20
35	Sikkim	-43.45
36	SIMHAPURI	-47.46
37	Pondicherry	-49.09
38	NSPCL	-56.14
39	MAITHON POWER LTD	-57.59
40	ACBIL	-66.93
41	Chattisgarh	-91.01
42	LANKO_KONDAPALLY	-105.71
43	Himachal Pradesh	-118.97
44	MP	-199.59
45	DVC	-199.84
46	J & K	-202.63
47	KARCHAM WANGTOO	-212.54
48	Delhi	-229.47
49	NHPC Stations	-280.68
50	LANKO_AMK	-340.86
51	STERLITE	-347.85
52	JINDAL POWER	-406.90

* 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, APRIL 2012			
	Details of Congestion	IEX	PXIL
A	Unconstrained Cleared Volume* (MUs)	1586.96	182.95
B	Actual Cleared Volume and hence scheduled (MUs)	1283.86	53.32
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	303.10	129.62
D	Volume of electricity that could not be cleared as % to Actual Cleared Volume	24%	243%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	100%	100%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	25%	25%
	6.00 - 12.00 hours	25%	25%
	12.00 - 18.00 hours	25%	25%
	18.00 - 24.00 hours	25%	25%
<i>* This power would have been scheduled had there been no congestion.</i>			
Source: IEX & PXIL			