

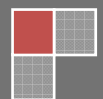


Monthly Report on Short-term Transactions of Electricity in India

December, 2011



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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
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
MUs	Million Units
NEW Grid	North, East, North-East and Western Regional Grid
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
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 December 2011 is as under:

I: Volume of Short-term Transactions of Electricity

During the month of December 2011, total electricity generation excluding generation from renewable and captive power plants in India was 72719.02MUs (Table-1).

Of the total electricity generation, 7486.37 MUs (10.29%) were transacted through short-term, comprising of 4442.85 MUs (6.11%) through Bilateral (through traders and term-ahead contracts on Power Exchanges and directly between distribution companies), followed by 1847.43 MUs (2.54%) through UI and 1196.09 MUs (1.64%) through day ahead collective transactions on Power Exchanges (IEX and PXIL) (Table-1 & Chart-2).

Of the total short-term transactions, Bilateral constitute 59.35% (35.74% through traders and term-ahead contracts on Power Exchanges and 23.61% directly between distribution companies) followed by 24.68% through UI and 15.98% through day ahead collective transactions on Power Exchanges (Table-1& Chart-1). Daily volume of short-term transactions is shown in Chart-3.

The percentage share of electricity traded by each trading licensee in the total volume of electricity traded by all trading licensees is provided in Table-2 & Chart-4. The trading licensees are undertaking electricity transactions through bilateral and through power exchanges. Here the volume of electricity transacted by the trading licensees includes bilateral transactions and the transactions undertaken through power exchanges. There are 43 trading licensees as on 31.12.2011, of which only 15 have engaged in trading during

December 2011. Top 5 trading licenses had a share of 74.04% in the total volume traded by all the licensees.

Herfindahl-Hirschman Index (HHI) has been used for measuring the competition among the trading licensees. Increases in the HHI generally indicate a decrease in competition and an increase of market power, whereas decreases indicate the opposite. A HHI between 0.15 to 0.25 indicates moderate concentration. The HHI computed for volume of electricity traded by trading licensees was 0.1587 for the month of December 2011, which indicates moderate concentration of market power (Table-2).

The volume of electricity transacted through IEX and PXIL in the day ahead market was 1159.28 MUs and 36.80 MUs respectively. The volume of total Buy bids and Sale bids was 2448.36 MUs and 1587.85 MUs respectively in IEX and 182.41 MUs and 70.72 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 (1.54 times) and in PXIL (2.58 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 61.51 MU in IEX (Table-6) and 2.10 MU in PXIL (Table-7).

II: Price of Short-term Transactions of Electricity

(i) Price of electricity transacted through Traders: Weighted average sale price has been computed for the electricity transacted through traders and it was ₹4.17/kWh. The weighted average sale price also computed for the transactions during Round the clock (RTC), Peak and Off-Peak periods separately and the sale price was ₹4.12/kWh, ₹6.05/kWh and ₹4.46/kWh respectively. Minimum and Maximum sale price was ₹2.96/kWh and ₹7.07/kWh respectively (Table-3 & 4).

(ii) Price of electricity transacted Through Power Exchange: The Minimum, Maximum and Weighted Average Price have been computed for the volume transacted through IEX and PXIL separately. The Minimum, Maximum and Weighted Average Price were ₹1.95/kWh, ₹20.00/kWh and ₹4.05/kWh respectively in IEX and ₹2.15/kWh, ₹14.01/kWh and ₹4.02/kWh respectively in PXIL (Table-5).

The weighted average prices of electricity transacted in term-ahead market through the weekly contracts were ₹5.12/kWh and ₹4.70/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 ₹5.40/kWh in the NEW Grid and ₹4.35/kWh in the SR Grid. Minimum and Maximum price of UI was ₹0.00/kWh and ₹17.46/kWh respectively in the New Grid and ₹0.00/kWh and ₹12.22/kWh respectively in the SR Grid (Table-8).

The price of electricity transacted through trading licensees, power exchanges and UI and its comparison is shown in Chart-5 & 6.

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

Of the total bilateral transactions, top 5 regional entities selling 57.00% of the volume are Gujarat, Jindal Power Ltd, Chattisgarh, West Bengal and Punjab. Top 5 regional entities purchasing 59.27% of the volume are Maharashtra, Rajasthan, Madhya Pradesh Tamil Nadu and Uttarakhand (Table-9 & 10).

Of the total Power Exchange transactions, top 5 regional entities selling 61.26% of the volume are Gujarat, Karnataka, Delhi, Chattisgarh and Jaypee Karcham Hydro Corporation Ltd. Top 5 regional entities purchasing 67.68% of the volume are Andhra Pradesh, Punjab, Gujarat, Madhya Pradesh and Maharashtra (Table-11 & 12).

Of the total UI transactions, top 5 regional entities under drawing 50.13% of the volume are Gujarat, Delhi, Damodar Valley Corporation, Uttar Pradesh and Maharashtra. Top 5 regional entities overdrawing 45.36% of the volume are Rajasthan, Haryana, Chattisgarh, Madhya Pradesh and Punjab (Table-13 & 14).

Regional entity-wise total volume of net short-term transactions of electricity i.e. volume of net transactions through bilateral, power exchange and UI is shown in Table-15. Top 5 regional entities selling electricity are Gujarat, Jindal Power Ltd, Delhi, West Bengal and Chattisgarh and top 5 regional entities purchasing electricity are Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu and Uttarakhand.

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 December 2011, congestion occurred in both the power exchanges, the details of which are shown in Table-16. The volume of electricity that could not be cleared due to congestion and could not be transacted through power exchanges is the difference of unconstrained cleared volume (volume of electricity that would have been scheduled, had there been no congestion) and actual cleared volume.

During the month, the volume of electricity that could not be cleared due to congestion was about 16% and 33% of the actual cleared volume in IEX and PXIL, respectively. Although the congestion occurred in power exchanges, in percentage of time terms it was around 79% in both IEX and PXIL.

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

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

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

V: Inferences:

- The percentage of short-term transactions of electricity to total electricity generation was 10.29%.
- Of the total short-term transactions of electricity, 59.35% transacted through bilateral (through traders and term ahead contracts on power exchanges and directly by distribution companies) followed by 24.68% through UI and 15.98% through Power Exchanges.
- Top 5 trading licenses are having share of 74.04% in the total volume traded by all the trading licensees.
- The Herfindahl Hirschman Index computed for volume of electricity traded by trading licensees was 0.1587 indicates moderate concentration of market power.
- The price of electricity transacted through Trading Licensees (₹4.17/kWh) was slightly high when compared with the price of electricity transacted through Power Exchanges (₹4.05/kWh in IEX and ₹4.02/kWh in PXIL).
- The price of electricity transacted through UI was ₹5.40/kWh in the NEW Grid and ₹4.35/kWh in the SR Grid.
- The gap between the volume of sale bids and buy bids placed through power exchanges shows that there was more demand in IEX (1:1.54) and in PXIL (1:2.58) when compared with the supply offered through these exchanges.
- Top 5 regional entities selling electricity are Gujarat, Jindal Power Ltd, Delhi, West Bengal and Chattisgarh and top 5 regional entities purchasing electricity are Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu and Uttarakhand.
- The volume of electricity that could not be cleared due to congestion was about 16% and 33% of the actual cleared volume in IEX and PXIL, respectively. In percentage of time terms, congestion occurred 78.6% of the time (585 hrs in the month) in IEX and 79.2% of the time (589 hrs in the month) in PXIL.

Format-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA (MUs), DECEMBER 2011						Total Electricity Generation (MUs) as given at CEA Website*
Date	Bilateral		Power Exchange (Area Clearing Volume# of day ahead market)		Unscheduled Interchange (Over Drawl+Under Generation)	
	Through Traders and PXs**	Direct	IEX	PXI		
1-Dec-11	83.10	50.84	38.66	1.57	57.78	2360.10
2-Dec-11	89.15	49.80	37.46	1.64	58.79	2358.79
3-Dec-11	90.53	52.98	39.65	0.88	57.84	2331.32
4-Dec-11	91.93	52.97	36.47	1.08	59.47	2348.51
5-Dec-11	80.96	40.26	28.14	0.56	49.36	2361.38
6-Dec-11	83.33	47.46	30.28	0.71	50.61	2366.85
7-Dec-11	85.26	53.56	35.24	0.45	57.32	2350.84
8-Dec-11	85.13	51.83	39.99	0.57	52.21	2366.64
9-Dec-11	84.77	61.14	37.66	0.58	56.43	2352.73
10-Dec-11	83.10	61.14	34.86	2.57	63.24	2332.47
11-Dec-11	84.25	61.18	34.31	2.14	64.29	2310.91
12-Dec-11	88.85	61.74	43.27	0.76	57.83	2338.49
13-Dec-11	89.60	61.38	41.79	1.23	63.93	2347.57
14-Dec-11	89.71	60.70	44.60	2.13	56.68	2353.89
15-Dec-11	88.77	54.06	44.21	1.93	53.10	2358.49
16-Dec-11	82.32	54.41	38.80	0.97	56.22	2320.01
17-Dec-11	79.44	57.77	34.07	0.94	57.22	2305.34
18-Dec-11	82.39	56.50	33.09	1.12	59.38	2327.32
19-Dec-11	88.39	59.98	30.70	0.71	64.19	2337.87
20-Dec-11	87.79	57.58	29.17	1.26	63.83	2324.17
21-Dec-11	87.94	62.98	38.85	0.96	60.27	2326.87
22-Dec-11	88.93	62.31	38.70	1.36	62.02	2335.94
23-Dec-11	86.48	61.46	35.66	1.12	67.13	2346.72
24-Dec-11	86.46	54.70	43.74	1.47	61.58	2347.24
25-Dec-11	85.31	61.11	37.14	0.87	66.35	2316.90
26-Dec-11	85.77	56.58	40.34	0.74	60.56	2358.01
27-Dec-11	86.54	60.54	40.71	1.21	57.99	2396.14
28-Dec-11	85.94	63.84	40.04	1.21	56.98	2400.18
29-Dec-11	86.71	59.71	40.15	1.36	64.66	2366.15
30-Dec-11	86.66	58.24	36.12	1.30	62.60	2340.80
31-Dec-11	90.02	58.57	35.39	1.40	67.57	2330.38
Total	2675.54	1767.31	1159.28	36.80	1847.43	72719.02
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), DECEMBER 2011

Market Segment	Day ahead market of IEX			Day ahead market of PXIL			Under Drawl/Over Drawl from the Grid (UI)					
Date	Minimum ACP	Maximum ACP	Weighted Average Price*	Minimum ACP	Maximum ACP	Weighted Average Price*	NEW Grid			SR Grid		
							Minimum Price	Maximum Price	Average Price**	Minimum Price	Maximum Price	Average Price**
1-Dec-11	2.49	10.00	3.89	3.00	10.55	4.12	1.55	12.22	6.47	1.55	8.26	4.64
2-Dec-11	2.75	6.25	4.24	3.00	10.55	4.41	1.09	12.22	6.32	2.02	8.26	5.09
3-Dec-11	2.40	6.50	4.35	3.00	13.00	4.32	0.62	12.22	6.67	1.86	8.26	5.03
4-Dec-11	2.70	5.55	4.00	3.00	11.25	4.14	2.17	12.22	5.60	0.00	7.32	4.01
5-Dec-11	3.00	7.07	4.66	3.21	10.01	4.85	2.33	17.46	7.65	1.55	12.22	5.13
6-Dec-11	2.99	7.09	4.90	3.20	14.01	4.53	1.86	12.22	6.67	1.55	12.22	5.38
7-Dec-11	3.21	6.00	4.86	3.25	12.00	5.45	1.09	17.46	6.55	1.55	12.22	4.84
8-Dec-11	2.72	6.00	4.71	3.35	12.10	5.55	1.24	17.46	7.64	0.62	12.22	4.42
9-Dec-11	2.50	5.56	4.67	3.20	12.10	5.14	0.78	7.79	3.55	0.16	6.85	4.13
10-Dec-11	2.70	7.00	4.45	3.20	4.99	4.07	0.93	12.22	4.66	1.40	8.26	5.16
11-Dec-11	3.00	5.56	3.86	3.00	12.00	3.99	1.09	12.22	3.33	0.93	8.26	4.25
12-Dec-11	2.40	5.56	3.97	3.20	12.20	4.61	0.93	12.22	4.41	0.47	12.22	4.85
13-Dec-11	2.20	5.56	3.78	2.90	12.20	4.25	1.09	12.22	4.22	1.24	7.79	4.63
14-Dec-11	2.09	5.56	3.77	2.98	12.10	4.27	1.09	12.22	6.06	2.02	8.26	5.03
15-Dec-11	2.30	5.56	3.97	2.70	12.10	4.19	1.24	12.22	6.00	1.40	8.26	4.78
16-Dec-11	2.40	5.56	4.23	3.20	10.50	4.35	0.47	12.22	4.56	0.00	8.26	3.60
17-Dec-11	2.13	20.00	3.55	2.89	4.50	3.42	1.55	12.22	7.11	0.93	8.26	4.14
18-Dec-11	2.39	18.50	3.31	3.20	5.35	3.47	0.47	8.26	3.45	0.00	12.22	3.37
19-Dec-11	2.00	18.50	3.27	2.50	6.26	3.01	0.00	8.26	3.60	0.31	12.22	4.77
20-Dec-11	2.00	20.00	3.64	2.15	4.30	3.18	0.62	12.22	6.53	0.93	12.22	4.39
21-Dec-11	2.00	5.40	3.84	3.10	14.01	3.73	1.55	12.22	6.30	0.00	7.32	3.69
22-Dec-11	2.12	12.01	4.01	2.20	13.00	3.54	0.31	12.22	4.42	0.31	7.79	3.53
23-Dec-11	2.00	12.50	3.88	2.18	14.01	3.68	1.40	17.46	6.51	1.86	8.26	4.60
24-Dec-11	2.20	12.00	3.98	2.70	10.01	3.80	1.86	17.46	7.04	1.55	7.79	4.27
25-Dec-11	2.50	11.00	3.72	3.20	8.01	4.04	1.40	12.22	5.11	0.00	12.22	3.63
26-Dec-11	2.25	7.01	4.04	3.20	10.00	4.35	0.78	12.22	5.97	1.55	8.26	4.23
27-Dec-11	2.24	10.00	4.16	2.78	12.00	4.04	1.24	12.22	5.04	0.93	12.22	4.29
28-Dec-11	2.00	10.00	4.09	2.49	11.50	3.68	0.62	12.22	3.90	1.40	12.22	4.76
29-Dec-11	1.95	9.01	4.07	2.60	12.00	3.68	0.31	12.22	3.54	0.00	8.26	3.69
30-Dec-11	1.98	10.01	3.94	2.55	12.01	3.76	0.62	12.22	4.84	0.47	8.26	3.36
31-Dec-11	1.97	20.00	3.78	2.55	13.10	3.59	0.62	12.22	3.70	0.00	8.26	3.29
	1.95#	20.00#	4.05	2.15#	14.01#	4.02	0.00#	17.46#	5.40	0.00#	12.22#	4.35

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), DECEMBER 2011

Name of the State/UT/Other Regional Entity	Through Bilateral			Through Power Exchange			Through UI with Regional Grid			Total Net***
	Sale	Purchase	Net**	Sale	Purchase	Net**	Export (Under Drawl)	Import (Over Drawl)	Net**	
Punjab	333.04	3.60	-329.44	0.22	172.51	172.30	37.55	139.44	101.89	-55.26
Haryana	231.23	168.02	-63.21	0.01	32.87	32.86	24.01	174.21	150.19	119.85
Rajasthan	101.53	567.62	466.09	61.48	53.47	-8.00	23.24	198.27	175.03	633.12
Delhi	290.29	69.78	-220.51	103.08	1.96	-101.13	179.35	6.78	-172.57	-494.20
Uttar Pradesh	0.00	201.29	201.29	0.00	0.00	0.00	123.49	115.93	-7.56	193.73
Uttarakhand	0.00	231.54	231.54	0.00	2.42	2.42	8.78	77.42	68.64	302.60
Himachal Pradesh	3.62	182.29	178.67	8.14	14.45	6.30	19.30	46.96	27.66	212.63
J & K	39.96	221.39	181.43	0.31	0.00	-0.31	19.22	64.61	45.39	226.51
UT Chandigarh	7.44	0.00	-7.44	1.89	0.77	-1.12	2.30	8.43	6.14	-2.42
MP	0.00	546.50	546.50	10.80	139.97	129.17	38.41	139.72	101.31	776.97
Maharashtra	35.88	663.74	627.86	69.29	139.85	70.56	97.98	56.14	-41.84	656.59
Gujarat	621.19	0.00	-621.19	303.09	151.09	-152.00	182.72	54.24	-128.47	-901.66
Chattisgarh	544.47	42.74	-501.74	89.02	0.00	-89.02	9.54	143.71	134.16	-456.59
Daman and Diu	0.00	0.00	0.00	0.00	0.00	0.00	16.09	3.81	-12.27	-12.27
Dadra & Nagar Haveli	0.00	51.41	51.41	0.00	0.00	0.00	40.12	0.38	-39.74	11.66
Andhra Pradesh	32.54	31.01	-1.53	21.64	206.06	184.43	52.64	26.95	-25.69	157.20
Karnataka	101.84	84.01	-17.83	150.41	31.59	-118.82	14.72	63.23	48.52	-88.14
Kerala	0.00	174.89	174.89	0.00	74.64	74.64	2.44	44.24	41.79	291.32
Tamilnadu	0.00	475.56	475.56	0.00	125.30	125.30	47.14	36.28	-10.86	589.99
Pondicherry	0.00	0.00	0.00	0.00	0.00	0.00	45.30	0.12	-45.18	-45.18
West Bengal	418.59	25.76	-392.84	64.82	10.13	-54.68	79.05	48.21	-30.83	-478.35
Orissa	10.72	29.78	19.05	0.00	10.66	10.66	49.08	20.98	-28.10	1.61
Bihar	0.00	208.65	208.65	0.00	0.00	0.00	22.53	14.83	-7.70	200.95
Jharkhand	2.26	74.40	72.14	0.00	0.00	0.00	9.37	42.25	32.89	105.03
Sikkim	0.00	2.29	2.29	19.17	0.00	-19.17	2.81	4.45	1.64	-15.24
DVC	112.82	56.20	-56.62	29.89	0.15	-29.74	132.83	37.47	-95.36	-181.72
Arunachal Pradesh	0.00	0.00	0.00	0.00	6.81	6.81	0.09	21.20	21.11	27.92
Assam	0.00	43.59	43.59	1.32	20.97	19.65	8.71	15.39	6.68	69.91
Manipur	0.00	0.00	0.00	0.00	0.00	0.00	4.24	9.93	5.69	5.69
Meghalaya	0.00	13.15	13.15	4.49	0.00	-4.49	2.68	17.88	15.20	23.86
Mizoram	0.00	0.00	0.00	1.28	0.00	-1.28	0.41	9.45	9.04	7.76
Nagaland	0.00	0.00	0.00	0.00	0.00	0.00	0.35	6.66	6.31	6.31
Tripura	5.64	0.17	-5.48	5.87	0.42	-5.45	5.64	2.58	-3.06	-13.98
GOA	0.00	23.55	23.55	24.19	0.00	-24.19	9.60	18.06	8.46	7.82
JINDAL POWER	615.18	0.00	-615.18	12.35	0.00	-12.35	12.52	9.08	-3.44	-630.97
LANKO_AMK	282.97	0.00	-282.97	22.22	0.00	-22.22	26.40	3.96	-22.45	-327.63
LANKO_KONDAPALLY	133.85	0.00	-133.85	17.12	0.00	-17.12	1.36	2.14	0.78	-150.20
STERLITE	273.53	0.00	-273.53	41.23	0.00	-41.23	29.44	25.34	-4.10	-318.86
AD HYDRO	5.34	0.00	-5.34	3.32	0.00	-3.32	1.06	0.19	-0.87	-9.53
KARCHAM WANGTOO	50.95	0.00	-50.95	82.93	0.00	-82.93	8.41	2.21	-6.20	-140.08
SHREE CEMENT	71.98	0.00	-71.98	4.89	0.00	-4.89	10.94	7.38	-3.55	-80.42
NSPCL	0.00	0.00	0.00	0.00	0.00	0.00	3.22	0.37	-2.84	-2.84
MAITHON POWER LTD	115.98	0.00	-115.98	34.85	0.00	-34.85	2.60	20.50	17.89	-132.94
ACBIL	0.00	0.00	0.00	0.00	0.00	0.00	9.24	1.44	-7.80	-7.80
BALCO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.74	0.74
RGPPL (Dabhol)	0.00	0.00	0.00	0.00	0.00	0.00	12.03	3.22	-8.81	-8.81
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.63	6.63	6.63

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), DECEMBER 2011				
Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	4442.85	59.35%	6.11%
	(i) Through Traders and PXs	2675.54	35.74%	3.68%
	(ii) Direct	1767.31	23.61%	2.43%
2	Through Power Exchanges	1196.09	15.98%	1.64%
	IEX	1159.28	15.49%	1.59%
	PXIL	36.80	0.49%	0.05%
3	Through UI	1847.43	24.68%	2.54%
	Total	7486.37	100.00%	10.29%
	Total Generation	72719.02	–	–

Source: NLDC

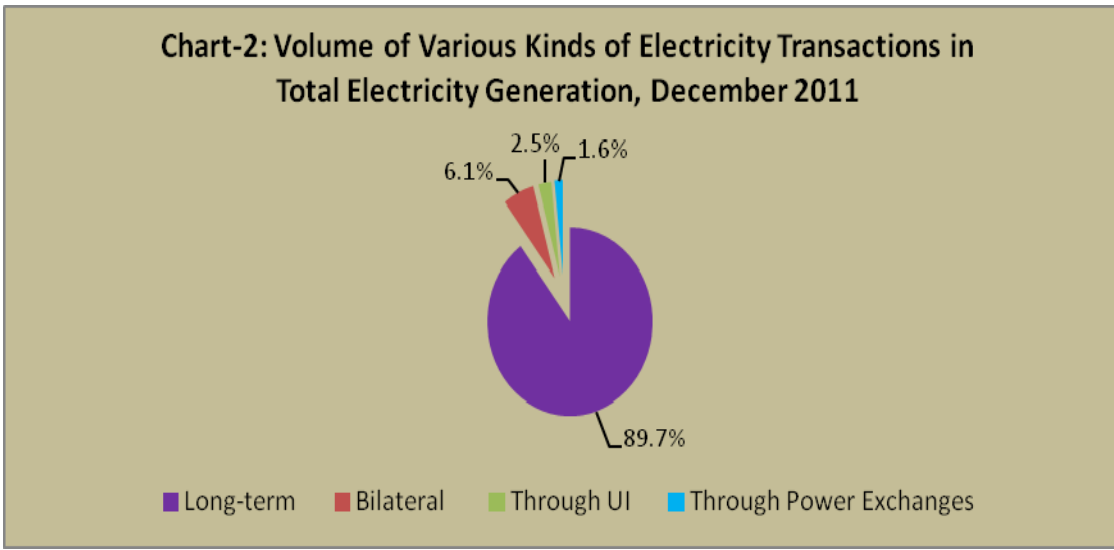
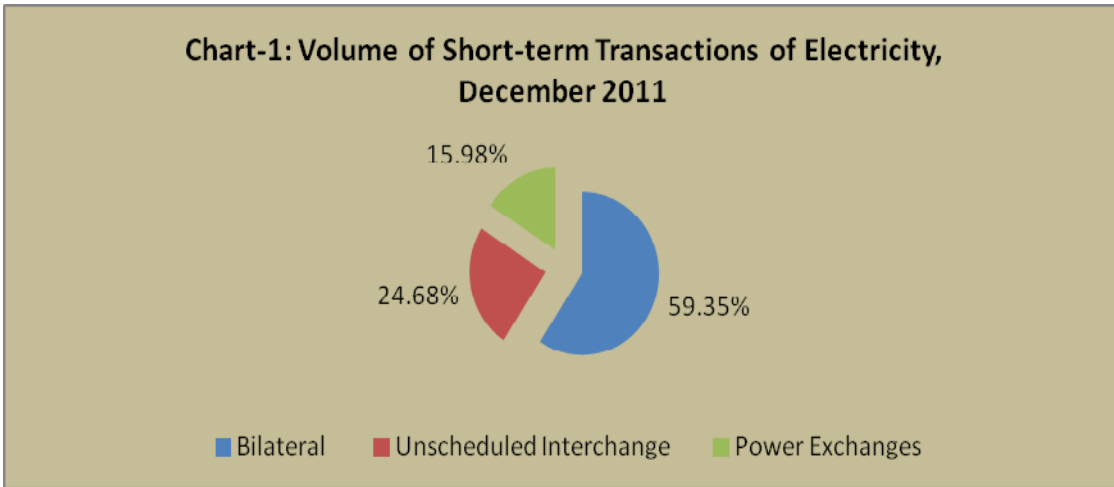


Chart-3: Volume of Short-term Transactions of Electricity, December 2011 (Day-wise)

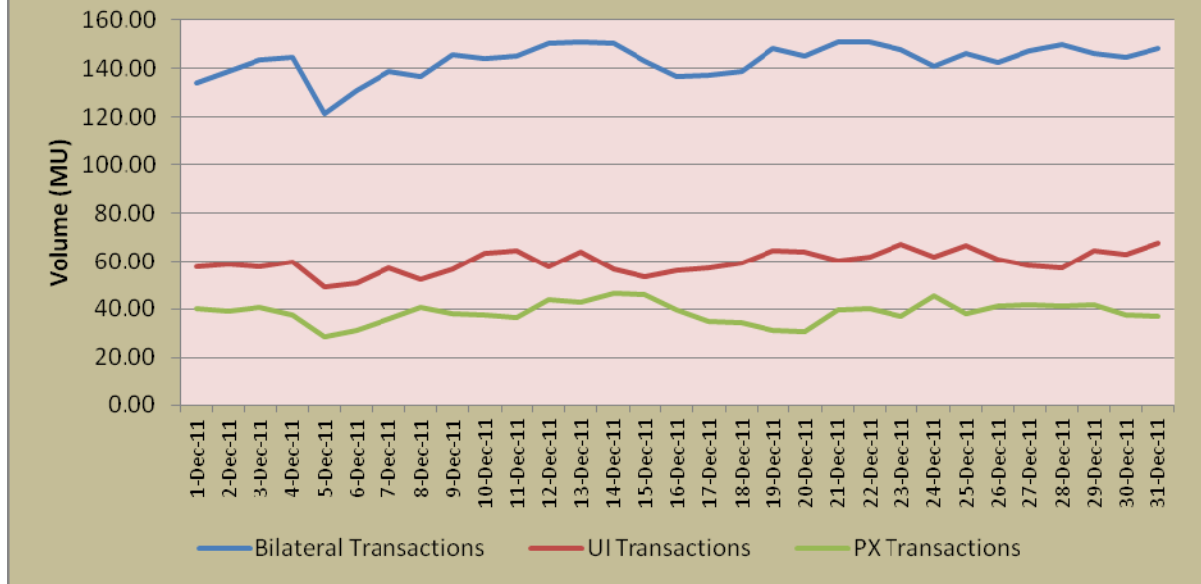


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, DECEMBER 2011

Sr.No	Name of the Trading Licensee	% Share in total Volume transacted by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd	31.73%	0.1007
2	NTPC Vidyut Vyapar Nigam Ltd	13.01%	0.0169
3	Tata Power Trading Company (P) Ltd	12.14%	0.0147
4	Reliance Energy Trading (P) Ltd	8.92%	0.0080
5	Adani Enterprises Ltd	8.23%	0.0068
6	National Energy Trading & Services Ltd	7.77%	0.0060
7	Knowledge Infrastructure Systems (P) Ltd	4.95%	0.0024
8	Shree Cement Ltd.	3.21%	0.0010
9	Jaiprakash Associate Ltd.	2.58%	0.0007
10	Instinct Infra & Power Ltd.	2.51%	0.0006
11	JSW Power Trading Company Ltd	2.20%	0.0005
12	GMR Energy Trading Ltd	1.55%	0.0002
13	Global Energy (P) Ltd.	0.99%	0.0001
14	RPG Power Trading Company Ltd.	0.18%	0.0000
15	Essar Electric Power Development Corp. Ltd.	0.01%	0.0000
	TOTAL	100.00%	0.1587
	Top 5 trading licensees	74.04%	

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

Source: Information submitted by trading licensees

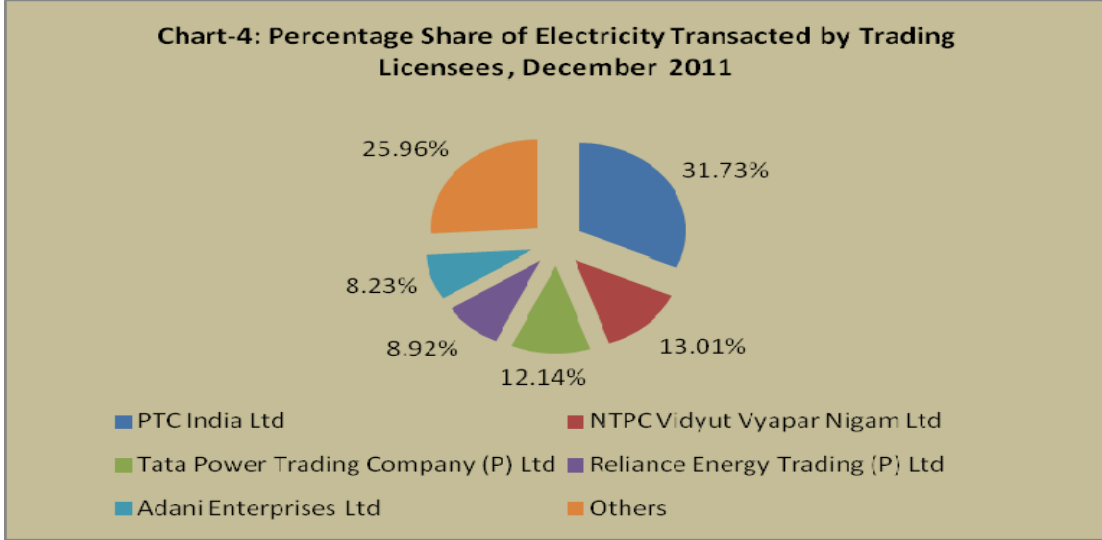


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, DECEMBER 2011		
Sr.No		Sale Price of Traders (₹/kWh)
1	Minimum	2.96
2	Maximum	7.07
3	Weighted Average	4.17

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), DECEMBER 2011		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	4.12
2	PEAK	6.05
3	OFF PEAK	4.46

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, DECEMBER 2011			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	1.95	2.15
2	Maximum	20.00	14.01
3	Weighted Average	4.05	4.02

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, DECEMBER 2011			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	1.82	4.61
2	Day Ahead Contingency Contracts	0.63	4.66
3	Weekly Contracts	61.51	5.12
	Total	63.96	

Source: IEX

Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, DECEMBER 2011			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Weekly Contracts	2.10	4.70
	Total	2.10	

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH UI, DECEMBER 2011			
Sr.No		Price in NEW Grid (₹/kWh)	Price in SR Grid (₹/kWh)
1	Minimum	0.00	0.00
2	Maximum	17.46	12.22
3	Average	5.40	4.35

Source: NLDC

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

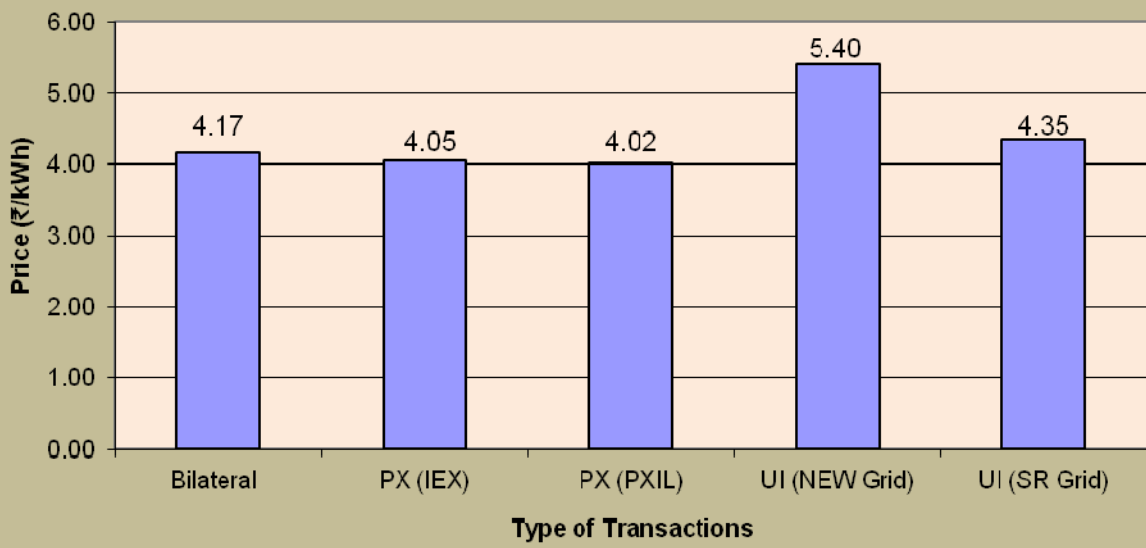


Chart-6: Price of Short-term Transactions of Electricity, December 2011 (Day-wise)

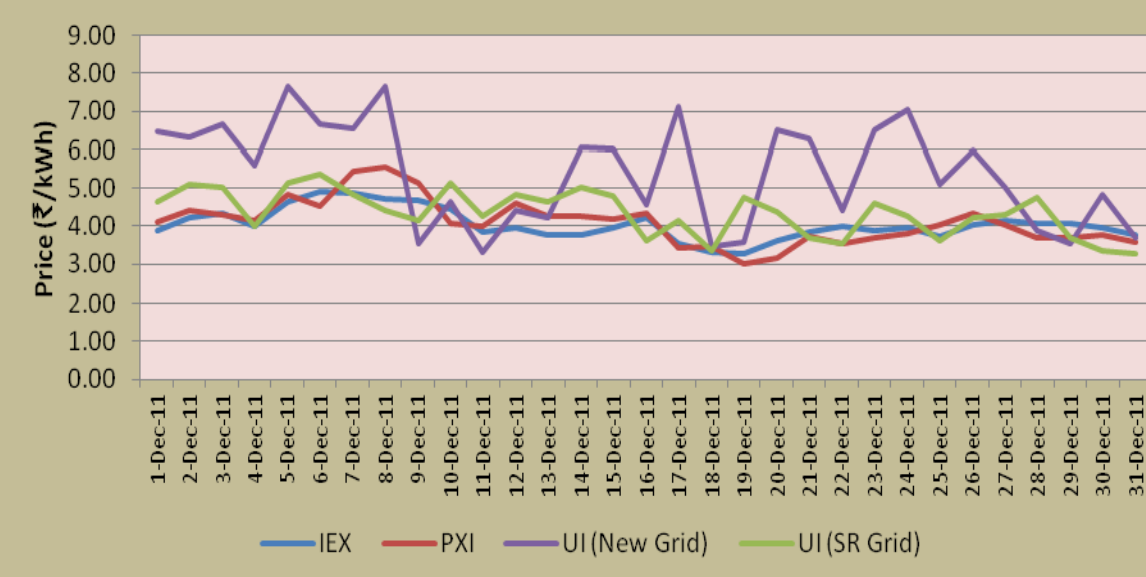


Table-9: VOLUME OF ELECTRICITY SALE THROUGH BILATERAL, DECEMBER 2011		
Name of the State/UT/Other Regional Entity	Volume of sale (MUs)	% of Volume
Gujarat	621.19	13.98%
JINDAL POWER	615.18	13.85%
Chattisgarh	544.47	12.26%
West Bengal	418.59	9.42%
Punjab	333.04	7.50%
Delhi	290.29	6.53%
LANKO_AMK	282.97	6.37%
STERLITE	273.53	6.16%
Haryana	231.23	5.20%
LANKO_KONDAPALLY	133.85	3.01%
MAITHON POWER LTD	115.98	2.61%
DVC	112.82	2.54%
Karnataka	101.84	2.29%
Rajasthan	101.53	2.29%
SHREE CEMENT	71.98	1.62%
KARCHAM WANGTOO	50.95	1.15%
J & K	39.96	0.90%
Maharashtra	35.88	0.81%
Andhra Pradesh	32.54	0.73%
Orissa	10.72	0.24%
UT Chandigarh	7.44	0.17%
Tripura	5.64	0.13%
AD HYDRO	5.34	0.12%
Himachal Pradesh	3.62	0.08%
Jharkhand	2.26	0.05%
Total	4442.85	100.00%
Volume of sale by top 5 States	2532.49	57.00%

Table-10: VOLUME OF ELECTRICITY PURCHASE THROUGH BILATERAL, DECEMBER 2011		
Name of the State/UT/Other Regional Entity	Volume of Purchase (MUs)	% of Volume
Maharashtra	663.74	15.83%
Rajasthan	567.62	13.54%
MP	546.50	13.03%
Tamilnadu	475.56	11.34%
Uttarakhand	231.54	5.52%
J & K	221.39	5.28%
Bihar	208.65	4.98%
Uttar Pradesh	201.29	4.80%
Himachal Pradesh	182.29	4.35%
Kerala	174.89	4.17%
Haryana	168.02	4.01%
Karnataka	84.01	2.00%
Jharkhand	74.40	1.77%
Delhi	69.78	1.66%
DVC	56.20	1.34%
Dadra & Nagar Haveli	51.41	1.23%
Assam	43.59	1.04%
Chattisgarh	42.74	1.02%
Andhra Pradesh	31.01	0.74%
Orissa	29.78	0.71%
West Bengal	25.76	0.61%
GOA	23.55	0.56%
Meghalaya	13.15	0.31%
Punjab	3.60	0.09%
Sikkim	2.29	0.05%
Tripura	0.17	0.00%
Total	4192.91	100.00%
Volume of sale by top 5 States	2484.96	59.27%

Table-11: VOLUME OF ELECTRICITY SALE THROUGH POWER EXCHANGES, DECEMBER 2011		
Name of the State/UT/Other Regional Entity	Volume of Sale (MUs)	% of Volume
Gujarat	303.09	25.48%
Karnataka	150.41	12.65%
Delhi	103.08	8.67%
Chattisgarh	89.02	7.48%
KARCHAM WANGTOO	82.93	6.97%
Maharashtra	69.29	5.83%
West Bengal	64.82	5.45%
Rajasthan	61.48	5.17%
STERLITE	41.23	3.47%
MAITHON POWER LTD	34.85	2.93%
DVC	29.89	2.51%
GOA	24.19	2.03%
LANKO_AMK	22.22	1.87%
Andhra Pradesh	21.64	1.82%
Sikkim	19.17	1.61%
LANKO_KONDAPALLY	17.12	1.44%
JINDAL POWER	12.35	1.04%
MP	10.80	0.91%
Himachal Pradesh	8.14	0.68%
Tripura	5.87	0.49%
SHREE CEMENT	4.89	0.41%
Meghalaya	4.49	0.38%
AD HYDRO	3.32	0.28%
UT Chandigarh	1.89	0.16%
Assam	1.32	0.11%
Mizoram	1.28	0.11%
J & K	0.31	0.03%
Punjab	0.22	0.02%
Haryana	0.01	0.00%
Total	1189.30	100.00%
Volume of sale by top 5 States	728.52	61.26%

**Table-12: VOLUME OF ELECTRICITY PURCHASE THROUGH POWER EXCHANGES,
DECEMBER 2011**

Name of the State/UT/Other Regional Entity	Volume of Purchase (MUs)	% of Volume
Andhra Pradesh	206.06	17.23%
Punjab	172.51	14.42%
Gujarat	151.09	12.63%
MP	139.97	11.70%
Maharashtra	139.85	11.69%
Tamilnadu	125.30	10.48%
Kerala	74.64	6.24%
Rajasthan	53.47	4.47%
Haryana	32.87	2.75%
Karnataka	31.59	2.64%
Assam	20.97	1.75%
Himachal Pradesh	14.45	1.21%
Orissa	10.66	0.89%
West Bengal	10.13	0.85%
Arunachal Pradesh	6.81	0.57%
Uttarakhand	2.42	0.20%
Delhi	1.96	0.16%
UT Chandigarh	0.77	0.06%
Tripura	0.42	0.04%
DVC	0.15	0.01%
Total	1196.09	100.00%
Volume of purchase by top 5 States	809.49	67.68%

Table-13: VOLUME OF ELECTRICITY EXPORT THROUGH UI, DECEMBER 2011		
Name of the State/UT/Other Regional Entity	Volume of Export (MUs)	% of Volume
Gujarat	182.72	12.79%
Delhi	179.35	12.55%
DVC	132.83	9.30%
Uttar Pradesh	123.49	8.64%
Maharashtra	97.98	6.86%
West Bengal	79.05	5.53%
Andhra Pradesh	52.64	3.68%
Orissa	49.08	3.43%
Tamilnadu	47.14	3.30%
Pondicherry	45.30	3.17%
Dadra & Nagar Haveli	40.12	2.81%
MP	38.41	2.69%
Punjab	37.55	2.63%
STERLITE	29.44	2.06%
LANKO_AMK	26.40	1.85%
Haryana	24.01	1.68%
Rajasthan	23.24	1.63%
Bihar	22.53	1.58%
Himachal Pradesh	19.30	1.35%
J & K	19.22	1.34%
Daman and Diu	16.09	1.13%
Karnataka	14.72	1.03%
JINDAL POWER	12.52	0.88%
RGPPL (Dabhol)	12.03	0.84%
SHREE CEMENT	10.94	0.77%
GOA	9.60	0.67%
Chattisgarh	9.54	0.67%
Jharkhand	9.37	0.66%
ACBIL	9.24	0.65%
Uttarakhand	8.78	0.61%
Assam	8.71	0.61%
KARCHAM WANGTOO	8.41	0.59%
Tripura	5.64	0.39%
Manipur	4.24	0.30%
NSPCL	3.22	0.23%
Sikkim	2.81	0.20%
Meghalaya	2.68	0.19%
MAITHON POWER LTD	2.60	0.18%
Kerala	2.44	0.17%
UT Chandigarh	2.30	0.16%
LANKO_KONDAPALLY	1.36	0.10%
AD HYDRO	1.06	0.07%
Mizoram	0.41	0.03%
Nagaland	0.35	0.02%
Arunachal Pradesh	0.09	0.01%
Total	1428.94	100.00%
Volume of Export by top 5 States	716.37	50.13%

Table-14: VOLUME OF ELECTRICITY IMPORT THROUGH UI, DECEMBER 2011		
Name of the State/UT/Other Regional Entity	Volume of Import (MUs)	% of Volume
Rajasthan	198.27	11.31%
Haryana	174.21	9.94%
Chattisgarh	143.71	8.20%
MP	139.72	7.97%
Punjab	139.44	7.95%
Uttar Pradesh	115.93	6.61%
Uttarakhand	77.42	4.42%
J & K	64.61	3.68%
Karnataka	63.23	3.61%
Maharashtra	56.14	3.20%
Gujarat	54.24	3.09%
West Bengal	48.21	2.75%
Himachal Pradesh	46.96	2.68%
Kerala	44.24	2.52%
Jharkhand	42.25	2.41%
DVC	37.47	2.14%
Tamilnadu	36.28	2.07%
Andhra Pradesh	26.95	1.54%
STERLITE	25.34	1.45%
Arunachal Pradesh	21.20	1.21%
Orissa	20.98	1.20%
MAITHON POWER LTD	20.50	1.17%
GOA	18.06	1.03%
Meghalaya	17.88	1.02%
Assam	15.39	0.88%
Bihar	14.83	0.85%
Manipur	9.93	0.57%
Mizoram	9.45	0.54%
JINDAL POWER	9.08	0.52%
UT Chandigarh	8.43	0.48%
SHREE CEMENT	7.38	0.42%
Delhi	6.78	0.39%
Nagaland	6.66	0.38%
CGPL	6.63	0.38%
Sikkim	4.45	0.25%
LANKO_AMK	3.96	0.23%
Daman and Diu	3.81	0.22%
RGPPL (Dabhol)	3.22	0.18%
Tripura	2.58	0.15%
KARCHAM WANGTOO	2.21	0.13%
LANKO_KONDAPALLY	2.14	0.12%
ACBIL	1.44	0.08%
BALCO	0.74	0.04%
Dadra & Nagar Haveli	0.38	0.02%
NSPCL	0.37	0.02%
AD HYDRO	0.19	0.01%
Pondicherry	0.12	0.01%
Total	1753.42	100.00%
Volume of Export by top 5 States	795.34	45.36%

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

Sr.No	Name of the State/UT/Other Regional Entity	Total volume of net short-term transactions of electricity*
1	MP	776.97
2	Maharashtra	656.59
3	Rajasthan	633.12
4	Tamilnadu	589.99
5	Uttarakhand	302.60
6	Kerala	291.32
7	J & K	226.51
8	Himachal Pradesh	212.63
9	Bihar	200.95
10	Uttar Pradesh	193.73
11	Andhra Pradesh	157.20
12	Haryana	119.85
13	Jharkhand	105.03
14	Assam	69.91
15	Arunachal Pradesh	27.92
16	Meghalaya	23.86
17	Dadra & Nagar Haveli	11.66
18	Goa	7.82
19	Mizoram	7.76
20	CGPL	6.63
21	Nagaland	6.31
22	Manipur	5.69
23	Orissa	1.61
24	BALCO	0.74
25	UT Chandigarh	-2.42
26	NSPCL	-2.84
27	ACBIL	-7.80
28	RGPPL (Dabhol)	-8.81
29	AD HYDRO	-9.53
30	Daman and Diu	-12.27
31	Tripura	-13.98
32	Sikkim	-15.24
33	Pondicherry	-45.18
34	Punjab	-55.26
35	SHREE CEMENT	-80.42
36	Karnataka	-88.14
37	MAITHON POWER LTD	-132.94
38	KARCHAM WANGTOO	-140.08
39	LANKO_KONDAPALLY	-150.20
40	DVC	-181.72
41	STERLITE	-318.86
42	LANKO_AMK	-327.63
43	Chattisgarh	-456.59
44	West Bengal	-478.35
45	Delhi	-494.20
46	JINDAL POWER	-630.97
47	Gujarat	-901.66

* 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, DECEMBER 2011			
	Details of Congestion	IEX	PXIL
A	Unconstrained Cleared Volume* (MUs)	1341.12	49.00
B	Actual Cleared Volume and hence scheduled (MUs)	1159.28	36.80
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	181.84	12.20
D	Volume of electricity that could not be cleared as % to Actual Cleared Volume	16%	33%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	78.6%	79.2%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	27%	29%
	6.00 - 12.00 hours	27%	22%
	12.00 - 18.00 hours	18%	18%
	18.00 - 24.00 hours	28%	30%
* This power would have been scheduled had there been no congestion.			

Source: IEX & PXIL