

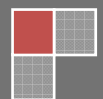


Monthly Report on Short-term Transactions of Electricity in India

September, 2012



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Abbreviations

Abbreviation	Expanded Version
ACBIL	ACB India Limited
ACP	Area Clearing Price
ACV	Area Clearing Volume
AD HYDRO	AD Hydro Power Limited
BALCO	Bharat Aluminium Company Limited
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CGPL	Coastal Gujarat Power Ltd
DCPP	Donga Mahua Captive Power Plant
DVC	Damodar Valley Corporation
IEX	Indian Energy Exchange Limited
JINDAL POWER	Jindal Power Limited
KARCHAM WANGTOO	Jaypee Karcham Hydro Corporation Limited
LANCO_AMK	Lanco Amarkantak Power Private Limited
LANCO BUDHIL	Lanco Budhil Hydro Power Private Limited
LANCO_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 Ltd. Stations
NJPC	Nathpa Jhakri Hydroelectric Power Station
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 September 2012 is as under:

I: Volume of Short-term Transactions of Electricity

During the month of September 2012, total electricity generation excluding generation from renewable and captive power plants in India was 73074.53 MUs (Table-1).

Of the total electricity generation, 8298.99 MUs (11.36%) were transacted through short-term, comprising of 4727.76 MUs (6.47%) through Bilateral (through traders and term-ahead contracts on Power Exchanges and directly between distribution companies), followed by 1909.61 MUs (2.61%) through day ahead collective transactions on Power Exchanges (IEX and PXIL) and 1661.62 MUs (2.27%) through UI (Table-1 & Figure-2).

Of the total short-term transactions, Bilateral constitute 56.97% (37.02% through traders and term-ahead contracts on Power Exchanges and 19.95% directly between distribution companies) followed by 23.01% through day ahead collective transactions on Power Exchanges and 20.02% through UI (Table-1& Figure-1). Daily volume of short-term transactions is shown in Table-17 & 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 45 trading licensees as on 30.09.2012, of which only 18 have engaged in trading during

September 2012. Top 5 trading licenses had a share of 73.76% 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 below 0.15 indicates non-concentration of market power. The HHI computed for volume of electricity traded by trading licensees was 0.1474 for the month of September 2012, which indicates that there was no concentration of market power (Table-2).

The volume of electricity transacted through IEX and PXIL in the day ahead market was 1878.69 MUs and 30.92 MUs respectively. The volume of total Buy bids and Sale bids was 3116.67 MUs and 3076.22 MUs respectively in IEX and 125.16 MUs and 262.86 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 (1.01 times) and less demand in PXIL (0.48 times) when compared with the supply offered through these exchanges.

The volume of electricity transacted in term-ahead market through weekly contracts was 13.87 MUs in IEX (Table-6) and 4.33 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 ₹4.37/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 ₹4.37/kWh, ₹5.69/kWh and ₹4.26/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 electricity transacted through IEX and PXIL separately. The Minimum, Maximum and Weighted Average prices were ₹0.005/kWh, ₹14.71/kWh and ₹2.98/kWh respectively in IEX and ₹1.00/kWh, ₹20.00/kWh and ₹2.34/kWh respectively in PXIL (Table-5).

The weighted average price of electricity transacted in term-ahead market through the weekly contracts was ₹4.07/kWh in IEX (Table-6) and ₹3.35/kWh in PXIL (Table-7).

(iii) Price of electricity transacted Through UI: All-India UI price has been computed for NEW Grid and SR Grid separately. The average UI price was ₹1.45/kWh in the NEW Grid and ₹3.69/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 ₹12.60/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 Table-18, Figure-5 & 6.

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

Of the total bilateral transactions, top 5 regional entities sold 45.91% of the volume, and these were Madhya Pradesh, Gujarat, Sterlite Energy Ltd., Jaypee Karcham Hydro Corporation Ltd., and Jammu & Kashmir. Top 5 regional entities purchased 66.65% of the volume, and these were Punjab, Andhra Pradesh, Maharashtra, Uttar Pradesh and West Bengal (Table-9, 10 & 19).

Of the total Power Exchange transactions, top 5 regional entities 66.79% of the volume, and these were Himachal Pradesh, Madhya Pradesh, Karnataka, Jaypee Karcham Hydro Corporation Ltd. and Jindal Power Ltd. Top 5 regional entities purchased 73.11% of the volume, and these were Gujarat, Punjab, Rajasthan, Maharashtra and Haryana (Table-11, 12 & 19).

Of the total UI transactions, top 5 regional entities underdrew 35.11% of the volume, and these were Delhi, Jharkhand, Jammu & Kashmir, Maharashtra and Uttar Pradesh. Top 5 regional entities overdrew 33.83% of the volume, and these were Rajasthan, Punjab, Uttar Pradesh, West Bengal and Sterlite Energy Ltd. (Table-13, 14 & 19).

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 & 19. Top 5 electricity selling regional entities were Madhya Pradesh, Himachal Pradesh, Jaypee Karcham Wangtoo Hydro Corporation Ltd., Karnataka and Jindal Power Ltd. Top 5 electricity purchasing regional entities were Punjab, Andhra Pradesh, Maharashtra, Uttar Pradesh and Haryana.

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 September 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 18.04% and 172.71% of the actual cleared volume in IEX and PXIL, respectively. In terms of time, congestion occurred was 98.75% and 100.00% time in IEX & 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 11.36%.
- Of the total short-term transactions of electricity, 56.97% was transacted through bilateral (through traders and term ahead contracts on power exchanges and directly by distribution companies), followed by 23.01% through Power Exchanges and 20.02% through UI.
- Top 5 trading licensees had a share of 73.76% in the total volume traded by all the trading licensees.
- The Herfindahl Hirschman Index computed for volume of electricity traded by trading licensees was 0.1474, indicating an unconcentration of market power.
- The price of electricity transacted through trading licensees (₹4.37/kWh) was higher when compared with the price of electricity transacted through IEX (₹2.98/kWh) and PXIL (₹2.34/kWh) respectively.
- The price of electricity transacted through UI was ₹1.45/kWh in the NEW Grid and ₹3.69/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 (1:1.01) and less demand in PXIL (1:0.48) 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., Karnataka and Jindal Power Ltd. Top 5 electricity purchasing regional entities were Punjab, Andhra Pradesh, Maharashtra, Uttar Pradesh and Haryana.
- The volume of electricity that could not be cleared in the power exchanges due to congestion was about 18.04% and 172.71% of the actual cleared volume in IEX and PXIL, respectively. In terms of time, congestion occurred was 98.75% and 100.00% time in IEX & PXIL, respectively.

Table-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (ALL INDIA), SEPTEMBER 2012				
Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	4727.76	56.97%	6.47%
	(i) Through Traders and PXs	3072.15	37.02%	4.20%
	(ii) Direct	1655.61	19.95%	2.27%
2	Through Power Exchanges	1909.61	23.01%	2.61%
	IEX	1878.69	22.64%	2.57%
	PXIL	30.92	0.37%	0.04%
3	Through UI	1661.62	20.02%	2.27%
	Total	8298.99	100.00%	11.36%
	Total Generation	73074.53	–	–

Source: NLDC

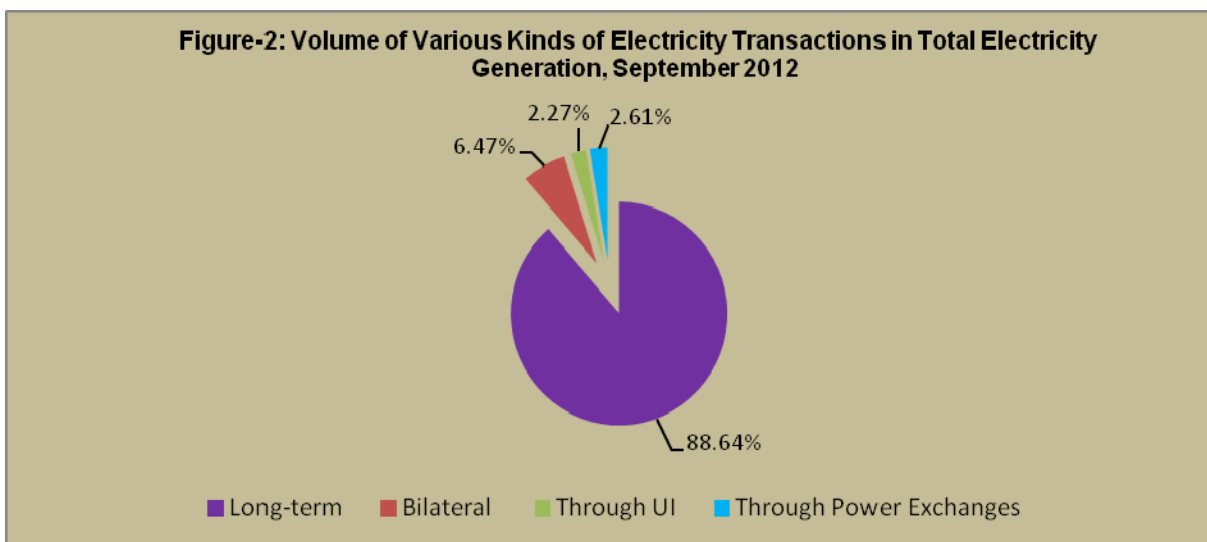
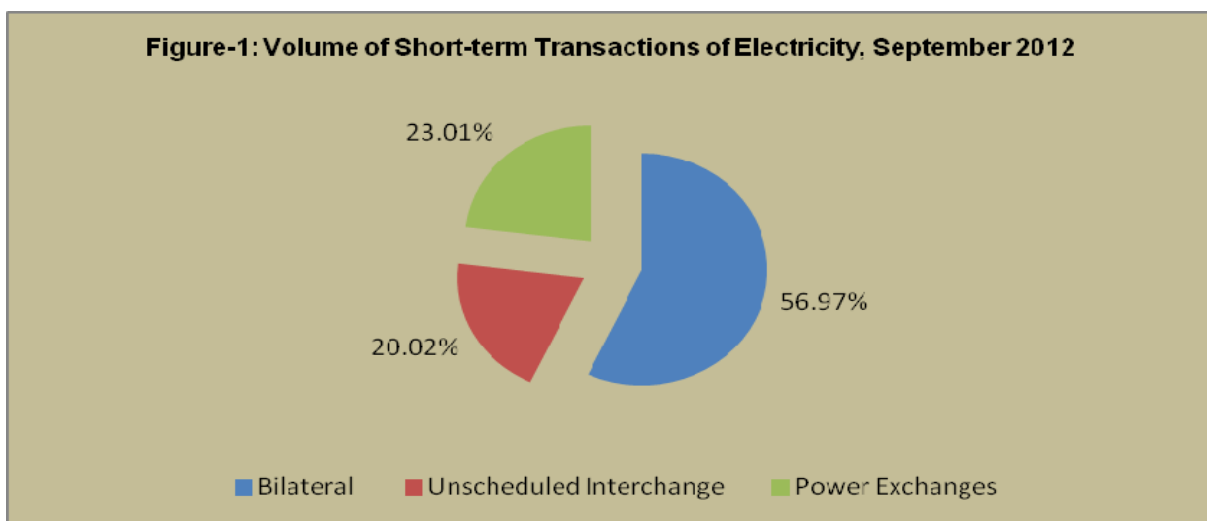


Figure-3: Volume of Short-term Transactions of Electricity, September 2012 (Day-wise)

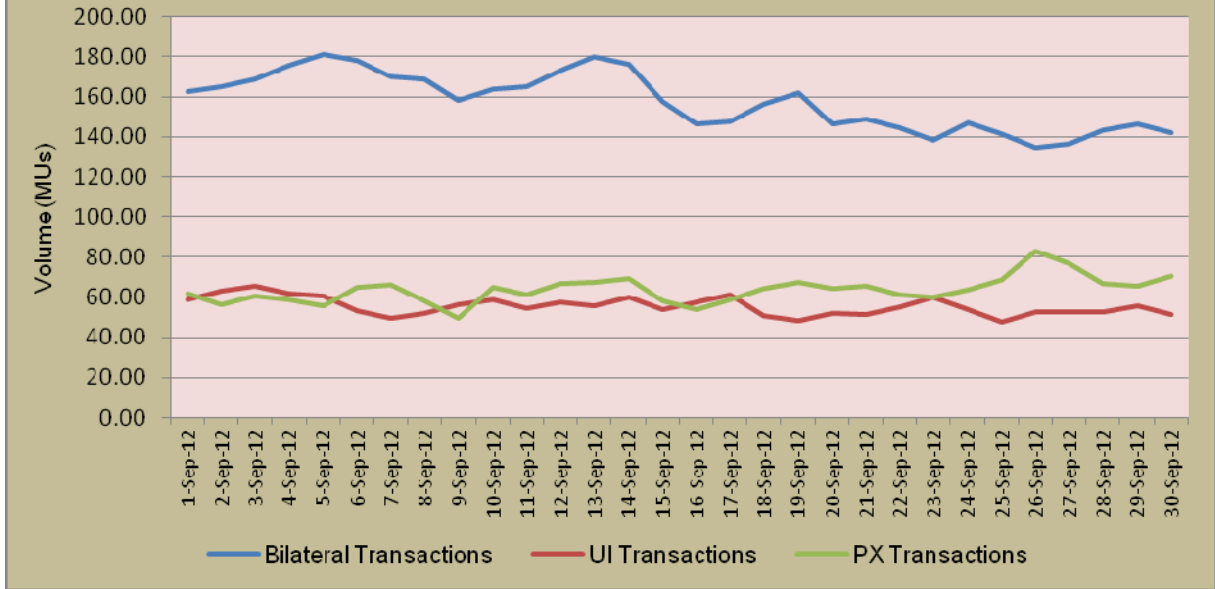


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, SEPTEMBER 2012			
Sr.No	Name of the Trading Licensee	% Share in total Volume transacted by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd	29.41%	0.0865
2	NTPC Vidyut Vyapar Nigam Ltd	13.82%	0.0191
3	JSW Power Trading Company Ltd	12.97%	0.0168
4	Tata Power Trading Company (P) Ltd	9.71%	0.0094
5	Knowledge Infrastructure Systems (P) Ltd	7.84%	0.0061
6	National Energy Trading & Services Ltd	6.22%	0.0039
7	Reliance Energy Trading (P) Ltd	4.17%	0.0017
8	Adani Enterprises Ltd	3.90%	0.0015
9	Jaiprakash Associates Ltd.	2.69%	0.0007
10	Shree Cement Ltd.	2.34%	0.0005
11	Global Energy (P) Ltd.	2.12%	0.0004
12	Instinct Infra & Power Ltd.	1.44%	0.0002
13	Essar Electric Power Development Corp. Ltd.	1.43%	0.0002
14	RPG Power Trading Company Ltd.	0.90%	0.0001
15	Manikaran Power Ltd.	0.50%	0.0000
16	GMR Energy Trading Ltd	0.50%	0.0000
17	Customized Energy Solutions India Pvt. Ltd.	0.04%	0.0000
18	Pune Power Development Pvt. Ltd.	0.00%	0.0000
TOTAL		100.00%	0.1474
Top 5 trading licensees		73.76%	
<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>			

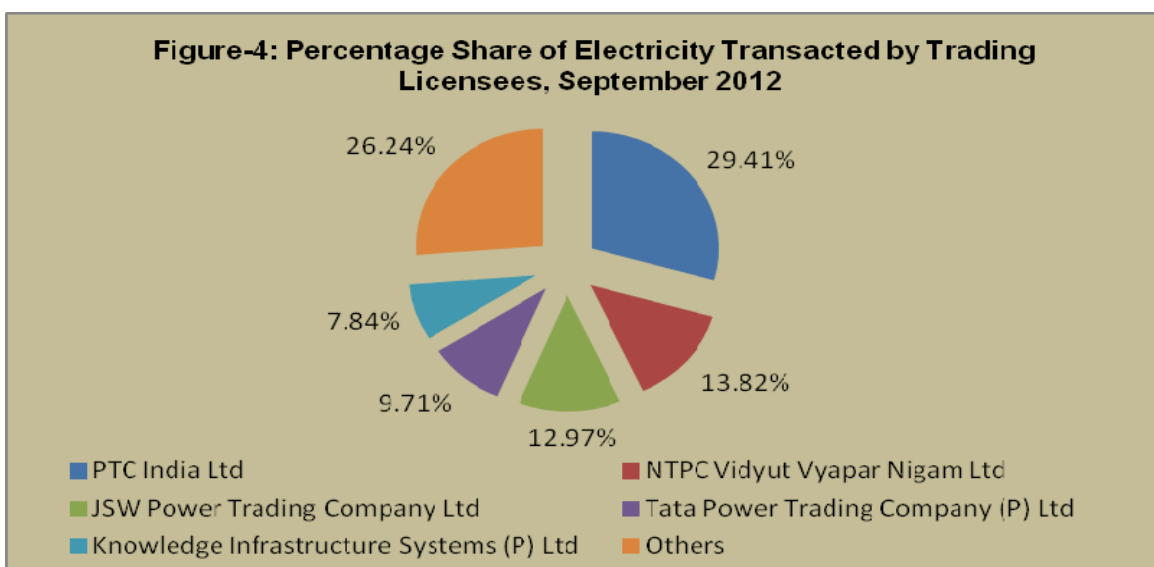


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, SEPTEMBER 2012		
Sr.No		Sale Price of Traders (₹/kWh)
1	Minimum	2.90
2	Maximum	8.04
3	Weighted Average	4.37

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), SEPTEMBER 2012		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	4.37
2	PEAK	5.69
3	OFF PEAK	4.26

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, SEPTEMBER 2012			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	0.005	1.00
2	Maximum	14.71	20.00
3	Weighted Average	2.98	2.34

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, SEPTEMBER 2012			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	11.37	3.32
2	Day-ahead Contingency Contracts	4.60	3.53
3	Daily Contracts	6.00	3.10
4	Weekly Contracts	13.87	4.07
	Total	35.83	3.60

Source: IEX

Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, SEPTEMBER 2012			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Weekly Contracts	4.33	3.35
	Total	4.33	3.35

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH UI, SEPTEMBER 2012			
Sr.No		Price in NEW Grid (₹/kWh)	Price in SR Grid (₹/kWh)
1	Minimum	0.00	0.00
2	Maximum	12.22	12.60
3	Average	1.45	3.69

Source: NLDC

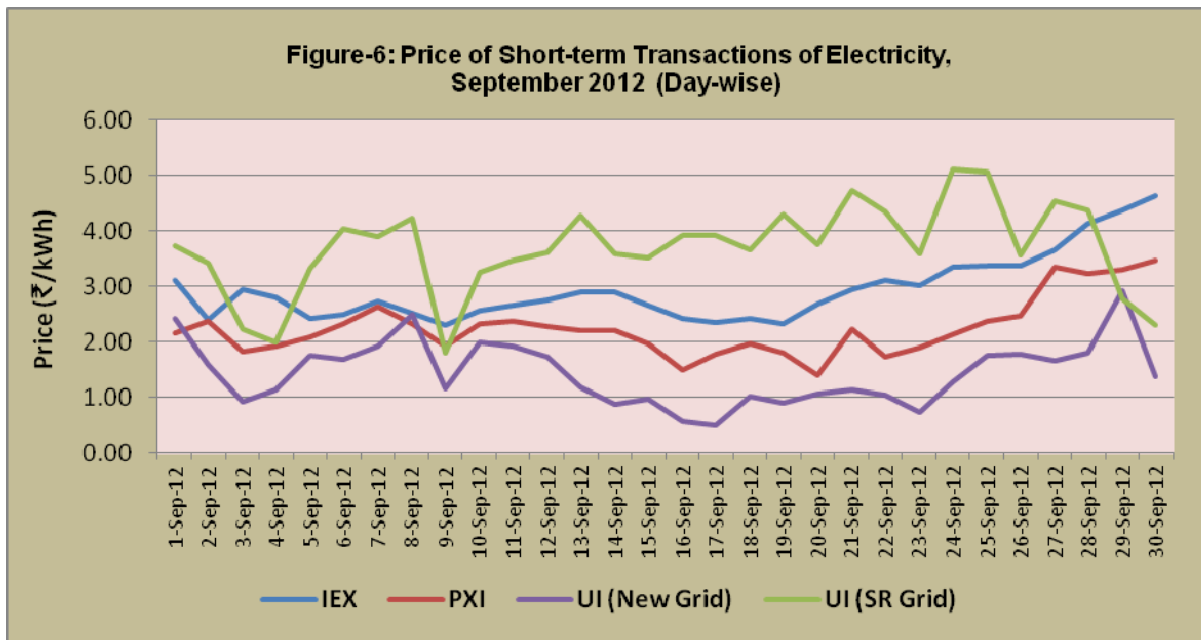
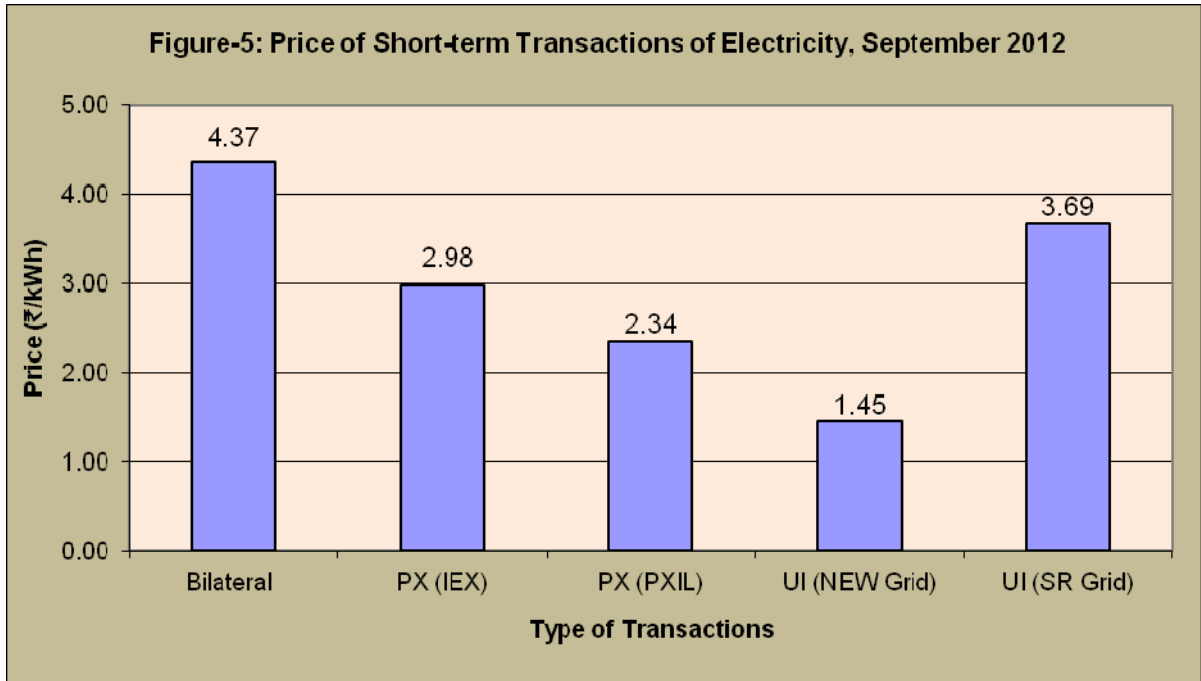


Table-9: VOLUME OF ELECTRICITY SALE THROUGH BILATERAL, SEPTEMBER 2012		
Name of the State/UT/Other Regional Entity	Volume of Sale (MUs)	% of Volume
MP	531.31	11.91%
Gujarat	455.79	10.21%
STERLITE	371.00	8.31%
KARCHAM WANGTOO	359.48	8.06%
J & K	331.36	7.43%
DVC	299.50	6.71%
Karnataka	282.33	6.33%
JINDAL POWER	252.14	5.65%
Himachal Pradesh	245.89	5.51%
West Bengal	230.90	5.17%
Rajasthan	161.42	3.62%
LANKO_AMK	147.78	3.31%
SIMHAPURI	144.21	3.23%
Maharashtra	106.43	2.38%
Orissa	94.64	2.12%
Chattisgarh	85.82	1.92%
SHREE CEMENT	54.48	1.22%
Uttarakhand	53.24	1.19%
AD HYDRO	53.18	1.19%
DCPP	47.54	1.07%
ACBIL	43.86	0.98%
Jharkhand	25.87	0.58%
Sikkim	22.70	0.51%
Delhi	21.95	0.49%
MAITHON POWER LTD	16.52	0.37%
Meghalaya	8.95	0.20%
Andhra Pradesh	8.55	0.19%
Uttar Pradesh	5.80	0.13%
Tripura	0.13	0.00%
Total	4462.77	100.00%
Volume of sale by top 5 States	2048.94	45.91%

Table-10: VOLUME OF ELECTRICITY PURCHASE THROUGH BILATERAL, SEPTEMBER 2012		
Name of the State/UT/Other Regional Entity	Volume of Purchase (MUs)	% of Volume
Punjab	931.82	20.77%
Andhra Pradesh	690.94	15.40%
Maharashtra	559.78	12.48%
Uttar Pradesh	472.10	10.52%
West Bengal	335.14	7.47%
Delhi	262.97	5.86%
Haryana	212.06	4.73%
Gujarat	210.92	4.70%
Bihar	182.79	4.08%
J & K	144.20	3.21%
Tamilnadu	125.88	2.81%
Kerala	94.76	2.11%
Jharkhand	72.00	1.61%
Dadra & Nagar Haveli	49.08	1.09%
Assam	33.01	0.74%
Chattisgarh	27.10	0.60%
UT Chandigarh	20.82	0.46%
DVC	20.51	0.46%
Himachal Pradesh	15.26	0.34%
GOA	9.60	0.21%
Sikkim	7.84	0.17%
Rajasthan	5.09	0.11%
MP	0.95	0.02%
Meenakshi	0.95	0.02%
Total	4485.58	100.00%
Volume of sale by top 5 States	2989.78	66.65%

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

Name of the State/UT/Other Regional Entity	Volume of Sale (MUs)	% of Volume
Himachal Pradesh	383.80	20.10%
MP	343.86	18.01%
Karnataka	232.53	12.18%
KARCHAM WANGTOO	177.91	9.32%
JINDAL POWER	137.40	7.20%
Delhi	105.09	5.50%
Gujarat	103.94	5.44%
NHPC Stations	93.82	4.91%
Andhra Pradesh	44.62	2.34%
West Bengal	34.22	1.79%
LANKO_AMK	31.64	1.66%
Chattisgarh	26.44	1.38%
AD HYDRO	24.79	1.30%
Sikkim	22.74	1.19%
Uttarakhand	20.74	1.09%
NEEPCO Stations	19.10	1.00%
DCPP	14.62	0.77%
Meghalaya	12.32	0.64%
DVC	9.96	0.52%
Orissa	9.92	0.52%
UT Chandigarh	9.62	0.50%
Assam	8.57	0.45%
SHREE CEMENT	8.16	0.43%
Rajasthan	7.07	0.37%
Mizoram	5.86	0.31%
Maharashtra	4.88	0.26%
GOA	3.56	0.19%
ACBIL	2.85	0.15%
SIMHAPURI	2.77	0.15%
Tripura	2.75	0.14%
Lanco Budhil	1.95	0.10%
J & K	1.71	0.09%
STERLITE	0.36	0.02%
MAITHON POWER LTD	0.02	0.00%
Total	1909.61	100.00%
Volume of sale by top 5 States	1275.50	66.79%

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

Name of the State/UT/Other Regional Entity	Volume of Purchase (MUs)	% of Volume
Gujarat	341.97	17.91%
Punjab	327.02	17.12%
Rajasthan	319.32	16.72%
Maharashtra	245.87	12.88%
Haryana	161.92	8.48%
Kerala	126.72	6.64%
Andhra Pradesh	122.63	6.42%
Uttar Pradesh	79.29	4.15%
West Bengal	48.34	2.53%
Tamilnadu	44.07	2.31%
MP	39.29	2.06%
Assam	25.40	1.33%
Uttarakhand	13.71	0.72%
Karnataka	4.25	0.22%
Chattisgarh	3.17	0.17%
Meghalaya	2.42	0.13%
Himachal Pradesh	2.10	0.11%
Delhi	1.62	0.09%
Arunachal Pradesh	0.49	0.03%
Total	1909.61	100.00%
Volume of purchase by top 5 States	1396.10	73.11%

Table-13: VOLUME OF ELECTRICITY EXPORT THROUGH UI, SEPTEMBER 2012		
Name of the State/UT/Other Regional Entity	Volume of Export (MUs)	% of Volume
Delhi	140.44	11.16%
Jharkhand	79.33	6.30%
J & K	76.86	6.11%
Maharashtra	73.20	5.82%
Uttar Pradesh	72.07	5.73%
MP	69.70	5.54%
Gujarat	63.47	5.04%
Karnataka	47.71	3.79%
Haryana	46.93	3.73%
Tamilnadu	46.84	3.72%
LANKO_AMK	40.45	3.21%
NHPC Stations	38.04	3.02%
Rajasthan	33.74	2.68%
West Bengal	32.06	2.55%
Chattisgarh	29.14	2.32%
JINDAL POWER	28.43	2.26%
Uttarakhand	24.15	1.92%
Bihar	23.57	1.87%
Orissa	20.74	1.65%
Himachal Pradesh	19.13	1.52%
Punjab	18.69	1.49%
KARCHAM WANGTOO	17.70	1.41%
Dadra & Nagar Haveli	17.19	1.37%
Andhra Pradesh	16.02	1.27%
DVC	15.76	1.25%
GOA	15.24	1.21%
Assam	13.36	1.06%
Manipur	13.22	1.05%
Pondicherry	11.42	0.91%
Meghalaya	10.76	0.85%
Arunachal Pradesh	10.11	0.80%
NJPC	9.36	0.74%
UT Chandigarh	9.17	0.73%
NEEPCO Stations	8.71	0.69%
Nagaland	8.50	0.68%
Daman and Diu	7.49	0.60%
Tripura	7.27	0.58%
AD HYDRO	6.06	0.48%
Mizoram	5.58	0.44%
MAITHON POWER LTD	4.80	0.38%
STERLITE	4.70	0.37%
CGPL	4.67	0.37%
BALCO	3.77	0.30%
Sikkim	3.33	0.26%
SHREE CEMENT	2.85	0.23%
ACBIL	1.98	0.16%
DCPP	1.53	0.12%
NSPCL	1.33	0.11%
RGPPL(Dabhol)	0.86	0.07%
SIMHAPURI	0.54	0.04%
Kerala	0.29	0.02%
LANKO_KONDAPALLY	0.20	0.02%
Total	1258.46	100.00%
Volume of Export by top 5 States	441.90	35.11%

Table-14: VOLUME OF ELECTRICITY IMPORT THROUGH UI, SEPTEMBER 2012		
Name of the State/UT/Other Regional Entity	Volume of Import (MUs)	% of Volume
Rajasthan	117.07	7.66%
Punjab	115.06	7.53%
Uttar Pradesh	111.41	7.29%
West Bengal	87.35	5.72%
STERLITE	85.86	5.62%
Haryana	77.15	5.05%
Kerala	72.82	4.77%
DVC	72.27	4.73%
Orissa	71.36	4.67%
Andhra Pradesh	69.72	4.56%
Maharashtra	66.97	4.38%
Chattisgarh	52.13	3.41%
MP	44.95	2.94%
Uttarakhand	42.62	2.79%
Gujarat	42.28	2.77%
NHPC Stations	41.62	2.72%
Tamilnadu	34.46	2.26%
RGPPL(Dabhol)	30.11	1.97%
Bihar	29.38	1.92%
Assam	25.24	1.65%
Himachal Pradesh	22.96	1.50%
J & K	19.40	1.27%
GOA	18.99	1.24%
DCPP	17.95	1.18%
Karnataka	16.43	1.08%
SIMHAPURI	13.62	0.89%
JINDAL POWER	11.88	0.78%
KARCHAM WANGTOO	10.42	0.68%
CGPL	10.36	0.68%
MAITHON POWER LTD	8.77	0.57%
Dadra & Nagar Haveli	7.60	0.50%
NJPC	7.03	0.46%
SHREE CEMENT	6.60	0.43%
Jharkhand	6.54	0.43%
LANKO_KONDAPALLY	6.28	0.41%
Delhi	5.94	0.39%
Daman and Diu	5.41	0.35%
LANKO_AMK	4.98	0.33%
AD HYDRO	4.13	0.27%
Meghalaya	3.92	0.26%
Sikkim	3.90	0.26%
Tripura	3.41	0.22%
ACBIL	3.39	0.22%
UT Chandigarh	3.35	0.22%
NEEPCO Stations	3.14	0.21%
Arunachal Pradesh	2.99	0.20%
Pondicherry	2.40	0.16%
BALCO	2.18	0.14%
NSPCL	1.83	0.12%
Nagaland	0.70	0.05%
Mizoram	0.70	0.05%
Manipur	0.65	0.04%
Total	1527.70	100.00%
Volume of Export by top 5 States	516.75	33.83%

Table-15: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY-WISE), SEPTEMBER 2012		
Sr.No.	Name of the State/UT/Other Regional Entity	Total volume of net short-term transactions of electricity*
1	Punjab	1355.21
2	Andhra Pradesh	814.10
3	Maharashtra	688.11
4	Uttar Pradesh	584.93
5	Haryana	404.20
6	Kerala	294.02
7	Rajasthan	239.25
8	Bihar	188.60
9	West Bengal	173.65
10	Tamilnadu	157.57
11	Assam	61.72
12	Dadra & Nagar Haveli	39.49
13	RGPPL(Dabhol)	29.25
14	GOA	9.79
15	LANKO_KONDAPALLY	6.07
16	CGPL	5.70
17	UT Chandigarh	5.37
18	Delhi	3.05
19	Meenakshi	0.95
20	NSPCL	0.50
21	BALCO	-1.60
22	Lanco Budhil	-1.95
23	Daman and Diu	-2.08
24	NJPC	-2.33
25	Arunachal Pradesh	-6.63
26	Tripura	-6.73
27	Nagaland	-7.80
28	Pondicherry	-9.02
29	Mizoram	-10.75
30	MAITHON POWER LTD	-12.56
31	Manipur	-12.57
32	NEEPCO Stations	-24.67
33	Meghalaya	-25.69
34	Jharkhand	-26.66
35	Gujarat	-28.02
36	Sikkim	-37.03
37	Uttarakhand	-41.80
38	ACBIL	-45.30
39	DCPP	-45.74
40	Orissa	-53.95
41	SHREE CEMENT	-58.88
42	Chattisgarh	-58.99
43	AD HYDRO	-79.90
44	NHPC Stations	-90.25
45	SIMHAPURI	-133.90
46	LANKO_AMK	-214.89
47	DVC	-232.44
48	J & K	-246.34
49	STERLITE	-290.19
50	JINDAL POWER	-406.09
51	Karnataka	-541.90
52	KARCHAM WANGTOO	-544.66
53	Himachal Pradesh	-608.50
54	MP	-859.68
* 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, SEPTEMBER 2012			
	Details of Congestion	IEX	PXIL
A	Unconstrained Cleared Volume* (MUs)	2217.58	84.31
B	Actual Cleared Volume and hence scheduled (MUs)	1878.69	30.92
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	338.89	53.40
D	Volume of electricity that could not be cleared as % to Actual Cleared Volume	18.04%	172.71%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	98.75%	100.00%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	24.89%	25.00%
	6.00 - 12.00 hours	25.32%	25.00%
	12.00 - 18.00 hours	24.75%	25.00%
	18.00 - 24.00 hours	25.04%	25.00%
<i>* This power would have been scheduled had there been no congestion.</i>			
<i>Source: IEX & PXIL</i>			

Table-17: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA (MUs), SEPTEMBER 2012 (DAY-WISE)						
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-Sep-12	91.53	71.02	60.81	0.82	58.95	2479.84
2-Sep-12	95.93	69.25	55.09	0.87	62.93	2431.97
3-Sep-12	101.71	67.24	59.85	0.66	65.31	2422.06
4-Sep-12	105.43	70.50	57.68	1.08	61.82	2368.17
5-Sep-12	110.06	71.10	54.71	0.70	60.53	2364.25
6-Sep-12	108.23	70.18	64.04	0.80	53.03	2356.79
7-Sep-12	99.45	70.62	64.80	1.36	49.11	2351.57
8-Sep-12	101.19	67.72	57.06	1.22	51.58	2339.47
9-Sep-12	99.16	59.28	49.00	0.61	56.05	2311.22
10-Sep-12	103.45	60.35	63.70	1.21	58.64	2374.35
11-Sep-12	99.83	65.23	60.13	1.39	54.68	2405.95
12-Sep-12	111.69	61.70	65.71	0.96	57.42	2454.94
13-Sep-12	125.11	54.80	66.34	0.94	55.47	2472.13
14-Sep-12	114.74	61.51	68.13	1.05	60.22	2420.38
15-Sep-12	104.44	53.22	57.04	0.80	53.69	2381.59
16-Sep-12	98.56	47.94	53.13	0.80	57.67	2303.64
17-Sep-12	97.74	49.96	58.00	0.62	61.26	2316.53
18-Sep-12	104.65	51.98	63.05	1.00	50.68	2352.76
19-Sep-12	107.47	54.41	66.84	0.84	48.47	2433.70
20-Sep-12	97.11	49.36	64.02	0.57	51.99	2457.23
21-Sep-12	98.14	50.82	64.07	1.34	51.47	2493.39
22-Sep-12	94.68	49.62	60.61	0.90	55.07	2511.83
23-Sep-12	93.82	44.30	58.76	1.00	59.96	2426.89
24-Sep-12	99.78	47.46	62.73	1.01	53.71	2505.28
25-Sep-12	94.80	46.58	67.46	1.18	47.48	2540.46
26-Sep-12	87.78	46.90	80.79	2.00	52.36	2574.27
27-Sep-12	91.72	44.78	75.41	1.65	52.34	2587.63
28-Sep-12	108.99	34.40	65.24	1.65	52.50	2595.74
29-Sep-12	113.43	32.85	64.56	1.01	55.86	2536.07
30-Sep-12	111.51	30.56	69.93	0.90	51.40	2504.43
Total	3072.15	1655.61	1878.69	30.92	1661.62	73074.53

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.

**Table-18: PRICE OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (₹/kWh), SEPTEMBER 2012
(DAY-WISE)**

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-Sep-12	1.50	12.51	3.13	1.20	5.50	2.16	0.00	6.38	2.42	1.09	6.85	3.73	
2-Sep-12	1.30	12.51	2.40	1.20	5.50	2.38	0.00	3.88	1.59	0.78	12.22	3.43	
3-Sep-12	1.50	14.01	2.95	1.30	2.00	1.82	0.00	3.41	0.92	0.00	7.32	2.24	
4-Sep-12	1.50	14.01	2.80	1.30	2.50	1.92	0.00	4.97	1.15	0.00	5.91	2.00	
5-Sep-12	1.30	14.51	2.41	1.92	2.60	2.09	0.00	12.22	1.76	0.93	7.79	3.34	
6-Sep-12	1.50	14.51	2.49	1.40	9.50	2.34	0.00	12.22	1.69	1.09	7.79	4.04	
7-Sep-12	1.46	14.51	2.74	1.92	10.00	2.63	0.00	7.32	1.93	0.16	12.22	3.91	
8-Sep-12	1.29	14.51	2.52	1.92	2.60	2.33	0.00	12.22	2.49	0.93	7.32	4.23	
9-Sep-12	1.20	14.51	2.31	1.86	2.00	1.93	0.00	4.50	1.16	0.00	4.97	1.81	
10-Sep-12	1.40	14.51	2.57	1.12	3.00	2.32	0.00	5.91	1.99	0.00	12.22	3.26	
11-Sep-12	1.30	14.71	2.65	1.78	3.15	2.38	0.00	6.38	1.93	0.62	6.85	3.48	
12-Sep-12	1.40	14.71	2.75	1.80	3.00	2.27	0.00	5.44	1.73	0.93	12.22	3.62	
13-Sep-12	1.50	14.71	2.89	1.79	3.00	2.22	0.00	3.10	1.19	1.71	12.22	4.28	
14-Sep-12	1.45	14.71	2.91	1.75	2.60	2.20	0.00	5.91	0.88	1.09	12.22	3.59	
15-Sep-12	1.20	14.01	2.66	1.80	2.19	1.96	0.00	2.95	0.98	0.47	6.38	3.51	
16-Sep-12	1.20	14.01	2.42	1.12	2.00	1.49	0.00	2.48	0.57	1.09	7.79	3.94	
17-Sep-12	1.20	14.01	2.35	1.12	20.00	1.78	0.00	1.49	0.50	0.99	9.11	3.93	
18-Sep-12	1.15	14.51	2.44	1.80	2.70	1.98	0.00	9.11	1.03	1.49	8.55	3.67	
19-Sep-12	1.14	14.51	2.34	1.20	2.30	1.80	0.00	4.78	0.90	1.32	12.60	4.31	
20-Sep-12	1.00	14.51	2.68	1.00	2.19	1.40	0.00	5.63	1.07	0.83	9.68	3.77	
21-Sep-12	1.09	14.52	2.96	1.00	3.10	2.23	0.00	5.91	1.14	0.66	9.39	4.75	
22-Sep-12	1.09	14.52	3.11	1.00	2.50	1.73	0.00	1.49	1.05	0.83	10.52	4.35	
23-Sep-12	1.05	14.52	3.01	1.46	2.50	1.89	0.00	5.06	0.74	1.49	9.11	3.59	
24-Sep-12	0.50	14.52	3.36	1.00	2.73	2.14	0.00	5.06	1.29	0.99	10.52	5.12	
25-Sep-12	0.005	14.52	3.38	1.00	13.01	2.37	0.00	8.83	1.77	1.49	9.96	5.08	
26-Sep-12	0.97	14.52	3.38	1.92	3.70	2.46	0.00	8.55	1.79	1.49	7.99	3.58	
27-Sep-12	0.85	14.52	3.67	2.15	13.01	3.35	0.00	7.99	1.66	0.99	9.96	4.54	
28-Sep-12	0.005	14.02	4.13	2.35	14.00	3.23	0.00	5.63	1.82	1.49	9.11	4.37	
29-Sep-12	0.005	13.76	4.38	2.18	4.70	3.30	0.50	9.96	2.92	0.83	5.91	2.79	
30-Sep-12	2.39	13.60	4.64	2.19	16.35	3.47	0.00	5.34	1.37	0.00	5.91	2.31	
	0.005#	14.71#	2.98	1.00#	20.00#	2.34	0.00#	12.22#	1.45	0.00#	12.60#	3.69	

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

Table-19: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY*-WISE) (MUs), SEPTEMBER 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 Draw)	Import (Over Draw)	Net**	
Punjab	0.00	931.82	931.82	0.00	327.02	327.02	18.69	115.06	96.37	1355.21
Haryana	0.00	212.06	212.06	0.00	161.92	161.92	46.93	77.15	30.22	404.20
Rajasthan	161.42	5.09	-156.33	7.07	319.32	312.25	33.74	117.07	83.33	239.25
Delhi	21.95	262.97	241.02	105.09	1.62	-103.47	140.44	5.94	-134.50	3.05
Uttar Pradesh	5.80	472.10	466.30	0.00	79.29	79.29	72.07	111.41	39.33	584.93
Uttarakhand	53.24	0.00	-53.24	20.74	13.71	-7.03	24.15	42.62	18.47	-41.80
Himachal Pradesh	245.89	15.26	-230.64	383.80	2.10	-381.69	19.13	22.96	3.83	-608.50
J & K	331.36	144.20	-187.16	1.71	0.00	-1.71	76.86	19.40	-57.47	-246.34
UT Chandigarh	0.00	20.82	20.82	9.62	0.00	-9.62	9.17	3.35	-5.82	5.37
MP	531.31	0.95	-530.36	343.86	39.29	-304.57	69.70	44.95	-24.75	-859.68
Maharashtra	106.43	559.78	453.35	4.88	245.87	240.99	73.20	66.97	-6.23	688.11
Gujarat	455.79	210.92	-244.86	103.94	341.97	238.03	63.47	42.28	-21.18	-28.02
Chattisgarh	85.82	27.10	-58.71	26.44	3.17	-23.27	29.14	52.13	22.99	-58.99
Daman and Diu	0.00	0.00	0.00	0.00	0.00	0.00	7.49	5.41	-2.08	-2.08
Dadra & Nagar Haveli	0.00	49.08	49.08	0.00	0.00	0.00	17.19	7.60	-9.59	39.49
Andhra Pradesh	8.55	690.94	682.39	44.62	122.63	78.01	16.02	69.72	53.70	814.10
Karnataka	282.33	0.00	-282.33	232.53	4.25	-228.28	47.71	16.43	-31.28	-541.90
Kerala	0.00	94.76	94.76	0.00	126.72	126.72	0.29	72.82	72.53	294.02
Tamilnadu	0.00	125.88	125.88	0.00	44.07	44.07	46.84	34.46	-12.38	157.57
Pondicherry	0.00	0.00	0.00	0.00	0.00	0.00	11.42	2.40	-9.02	-9.02
West Bengal	230.90	335.14	104.25	34.22	48.34	14.12	32.06	87.35	55.29	173.65
Orissa	94.64	0.00	-94.64	9.92	0.00	-9.92	20.74	71.36	50.62	-53.95
Bihar	0.00	182.79	182.79	0.00	0.00	0.00	23.57	29.38	5.81	188.60
Jharkhand	25.87	72.00	46.13	0.00	0.00	0.00	79.33	6.54	-72.79	-26.66
Sikkim	22.70	7.84	-14.86	22.74	0.00	-22.74	3.33	3.90	0.57	-37.03
DVC	299.50	20.51	-278.99	9.96	0.00	-9.96	15.76	72.27	56.51	-232.44
Arunachal Pradesh	0.00	0.00	0.00	0.00	0.49	0.49	10.11	2.99	-7.11	-6.63
Assam	0.00	33.01	33.01	8.57	25.40	16.83	13.36	25.24	11.88	61.72
Manipur	0.00	0.00	0.00	0.00	0.00	0.00	13.22	0.65	-12.57	-12.57
Meghalaya	8.95	0.00	-8.95	12.32	2.42	-9.90	10.76	3.92	-6.84	-25.69
Mizoram	0.00	0.00	0.00	5.86	0.00	-5.86	5.58	0.70	-4.89	-10.75
Nagaland	0.00	0.00	0.00	0.00	0.00	0.00	8.50	0.70	-7.80	-7.80
Tripura	0.13	0.00	-0.13	2.75	0.00	-2.75	7.27	3.41	-3.86	-6.73
GOA	0.00	9.60	9.60	3.56	0.00	-3.56	15.24	18.99	3.75	9.79
NHPC Stations	0.00	0.00	0.00	93.82	0.00	-93.82	38.04	41.62	3.57	-90.25
NJPC	0.00	0.00	0.00	0.00	0.00	0.00	9.36	7.03	-2.33	-2.33
AD HYDRO	53.18	0.00	-53.18	24.79	0.00	-24.79	6.06	4.13	-1.92	-79.90
KARCHAM WANGTOO	359.48	0.00	-359.48	177.91	0.00	-177.91	17.70	10.42	-7.27	-544.66
SHREE CEMENT	54.48	0.00	-54.48	8.16	0.00	-8.16	2.85	6.60	3.75	-58.88
Lanco Budhil	0.00	0.00	0.00	1.95	0.00	-1.95	0.00	0.00	0.00	-1.95
JINDAL POWER	252.14	0.00	-252.14	137.40	0.00	-137.40	28.43	11.88	-16.55	-406.09
LANKO_AMK	147.78	0.00	-147.78	31.64	0.00	-31.64	40.45	4.98	-35.47	-214.89
NSPCL	0.00	0.00	0.00	0.00	0.00	0.00	1.33	1.83	0.50	0.50
ACBIL	43.86	0.00	-43.86	2.85	0.00	-2.85	1.98	3.39	1.41	-45.30
BALCO	0.00	0.00	0.00	0.00	0.00	0.00	3.77	2.18	-1.60	-1.60
RGPPL(Dabhol)	0.00	0.00	0.00	0.00	0.00	0.00	0.86	30.11	29.25	29.25
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	4.67	10.36	5.70	5.70
DCPP	47.54	0.00	-47.54	14.62	0.00	-14.62	1.53	17.95	16.42	-45.74
LANKO_KONDAPALLY	0.00	0.00	0.00	0.00	0.00	0.00	0.20	6.28	6.07	6.07
SIMHAPURI	144.21	0.00	-144.21	2.77	0.00	-2.77	0.54	13.62	13.08	-133.90
Meenakshi	0.00	0.95	0.95	0.00	0.00	0.00	0.00	0.00	0.00	0.95
STERLITE	371.00	0.00	-371.00	0.36	0.00	-0.36	4.70	85.86	81.17	-290.19
MAITHON POWER LTD	16.52	0.00	-16.52	0.02	0.00	-0.02	4.80	8.77	3.98	-12.56
NEEPCO Stations	0.00	0.00	0.00	19.10	0.00	-19.10	8.71	3.14	-5.57	-24.67

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