MONTHLY REPORT ON

SHORT-TERM TRANSACTIONS OF ELECTRICITY

(December 2010)

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. In this context, "short-term transactions of electricity" means 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 2010 is as under:

I: Volume of Short-term Transactions of Electricity

During the Month of December 2010, total electricity generation excluding generation from renewable and captive power plants in India was 67079.74 MUs (Table-1).

Of the total electricity generation, 6183.94 MUs (9.22%) were transacted through short-term, comprising of 2802.59 MUs (4.18%) through Bilateral (through traders and tem-ahead contracts on Power Exchanges and directly between distribution companies), followed by 2121.38 MUs (3.16%) through UI and 1259.97 MUs (1.88%) through day ahead collective transactions on Power Exchanges (IEX and PXIL) (Table-1 & Chart-2).

Of the total short-term transactions, Bilateral constitute 45.32% (31.02% through traders and term-ahead contracts on Power Exchanges and 14.30% directly between distribution companies) followed by 34.30% through UI and 20.37% 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 38 trading licensees as on 31.12.2010, of which only 16 have engaged in trading during December 2010. Top 5 trading licenses had a share of 85 % 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 above 0.18 indicates high concentration. The HHI computed for volume of electricity traded by trading licensees was 0.2045 for the month of December, which shows high concentration of market power by them (Table-2).

The volume of electricity transacted through IEX and PXIL was 1121.37 MUs and 138.60 MUs respectively. The volume of total Buy bids and Sale bids was 1368.58 MUs and 1965.70 MUs respectively in IEX and 245.88 MUs and 389.93 MUs respectively in PXIL. The gap between the volume of buy bids and sale bids placed through power exchanges shows that there was less demand in IEX (0.70 times) and in PXIL (0.63 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 75.57 MU in IEX and 150.86 MU in PXIL (Table-5A&5B).

II: Price of Short-term Transactions of Electricity

(1*) Price of electricity transacted through Traders:* Weighted average sale price has been computed for the electricity transacted through traders and it was Rs.3.95/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 Rs.4.12/kWh, Rs.4.86/kWh and Rs.3.46/kWh respectively. Minimum and Maximum sale price was Rs.2.56/kWh and Rs.5.89/kWh respectively (Table-3 & 4).

(2*) 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 was Rs.0.88/kWh, Rs.4.50/kWh and Rs.2.47/kWh respectively in IEX and Rs0.95/kWh, Rs.6.50/kWh and Rs.2.99/kWh respectively in PXIL (Table-5).

The weighted average price of electricity transacted in term-ahead market through the weekly contracts of power exchanges was Rs.2.66/kWh in IEX and Rs.2.68/kWh in PXIL (Table-5A & Table-5B).

(3*) 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 Rs.2.54/kWh in the NEW Grid and Rs.2.64/kWh in the SR Grid. Minimum and Maximum price of UI was Rs.0.00/kWh and Rs.12.22/kWh respectively in the New Grid and Rs.0.00/kWh and Rs.17.46/kWh respectively in the SR Grid (Table-6).

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 Entity[1]-Wise):

Of the total bilateral transactions, top 5 regional entities selling 61% of the volume are Jindal Power Ltd, Punjab, West Bengal, Haryana and Andhra Pradesh. Top 5 regional entities purchasing 68% of the volume are Tamil Nadu, Madhya Pradesh, Maharashtra, Rajasthan and Jammu & Kashmir (Table-7 & 8).

Of the total Power Exchange transactions, top 5 regional entities selling 67% of the volume are Chattisgarh, Gujarat, Lanco Amarkantak Ltd, Karnataka and Lanco Kondapally Ltd and top 5 regional entities purchasing 87% of the volume are Punjab, Tamil Nadu, Rajasthan, Haryana and Maharashtra (Table-9 & 10).

Of the total UI transactions, top 5 regional entities underdrawing 50% of the volume are Gujarat, Maharashtra, Chattisgarh, Uttar Pradesh and West Bengal. Top 5 regional entities overdrawing 58% of the volume are Haryana, Rajasthan, Uttarakhand, Madhya Pradesh and Tamil Nadu (Table-11 & 12).

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-13. Top 5 regional entities selling electricity are Chattisgarh, West Bengal, Jindal Power Ltd,

[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.*

Gujarat and Delhi and top 5 regional entities purchasing electricity are Tamil Nadu, Rajasthan, Haryana, Madhya Pradesh and Uttarakhand.

IV: Congestion[2] 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 2010, congestion occurred in both the power exchanges, the details of which are shown in Table-14. The volume of electricity that could not be cleared due to congestion and could not been 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 1.7% and 18.0% 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 34.14% in IEX and 38.71% in PXIL. The congestion occurred in most number of times during 18:00-24:00 hours period of the day in both the exchanges.

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[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 9.22 %.
- Of the total short-term transactions of electricity, 45.32% transacted through bilateral (through traders and term ahead contracts on power exchanges and directly by distribution companies) followed by 34.30% through UI and 20.37% through Power Exchanges.
- Volume of electricity transacted through power exchanges (day ahead and term ahead i.e. 1487 MU) is reaching closer to the volume of electricity transacted through traders (1691 MU).
- Top 5 trading licenses are having share of 84.5% in the total volume traded by all the trading licensees.
- The price of electricity transacted through Trading Licensees was relatively high (Rs.3.95/kWh) when compared with the price of electricity transacted through Power Exchanges (Rs 2.47/kWh in IEX and 2.99/ kWh in PXIL). The price of electricity transacted through UI was Rs.2.54/ kWh in NEW Grid and Rs.2.64/ kWh in SR Grid.
- The Herfindahl Hirschman Index computed for volume of electricity traded by trading licensees was 0.2045 shows high concentration of market power.
- The gap between the volume of sale bids and buy bids placed through power exchanges shows that there was less demand in IEX (1:0.70) and in PXIL (1:0.63) when compared with the supply offered through these exchanges.
- Top 5 regional entities selling electricity are Chattisgarh, West Bengal, Jindal Power Ltd, Gujarat and Delhi and top 5 regional entities purchasing electricity are Tamil Nadu, Rajasthan, Haryana, Madhya Pradesh and Uttarakhand.
- The volume of electricity that could not be cleared due to congestion was about 1.7% and 18.0% of the actual cleared volume in IEX and PXIL, respectively. In percentage of time terms, congestion occurred 34.14% of the time (254 hrs in the month) in IEX and 38.71% of the time (288 hrs in the month) in PXIL.
- The congestion occurred in most number of times during 18:00-24:00 hours period of the day in both the exchanges.

Format-1

VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (ALL INDIA) (MUs)						
Month: December 2010						
Date	Bilateral		Power Exchange (Market 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-Dec-10	49.61	27.16	34.88	2.57	70.44	2082.75
2-Dec-10	49.61	25.67	37.77	2.92	71.50	2074.75
3-Dec-10	50.40	25.64	39.83	3.19	65.42	2122.21
4-Dec-10	52.18	24.90	38.21	4.02	63.46	2118.48
5-Dec-10	52.53	25.03	36.03	4.48	67.05	2046.01
6-Dec-10	56.29	24.90	34.69	3.16	67.10	2094.55
7-Dec-10	58.14	24.90	36.72	4.57	70.41	2109.88
8-Dec-10	65.12	24.37	36.70	4.35	62.72	2124.50
9-Dec-10	64.01	24.70	31.33	4.00	61.40	2143.58
10-Dec-10	65.25	25.20	29.40	3.55	66.92	2138.73
11-Dec-10	63.97	24.67	29.30	2.76	72.48	2156.81
12-Dec-10	65.35	26.72	31.44	3.54	68.31	2112.21
13-Dec-10	65.56	26.17	28.52	3.22	64.54	2177.68
14-Dec-10	65.16	26.17	30.99	3.43	63.38	2220.43
15-Dec-10	65.02	28.57	30.70	4.09	70.32	2207.18
16-Dec-10	64.07	29.77	32.27	4.51	68.94	2190.11
17-Dec-10	64.49	29.60	35.13	5.37	68.11	2167.44
18-Dec-10	63.97	29.27	37.00	4.24	67.52	2176.69
19-Dec-10	63.23	31.37	40.13	3.50	70.01	2104.50
20-Dec-10	63.84	30.75	43.17	4.00	65.43	2147.70
21-Dec-10	63.16	31.07	39.15	4.81	73.35	2175.07
22-Dec-10	64.48	31.13	38.28	5.71	69.48	2204.43
23-Dec-10	64.13	31.13	39.19	6.50	68.10	2216.79
24-Dec-10	63.95	30.87	42.25	7.54	63.67	2240.02
25-Dec-10	63.93	32.38	44.09	6.45	74.45	2231.39
26-Dec-10	63.93	32.38	40.18	6.27	67.86	2166.94
27-Dec-10	65.07	31.40	41.05	6.93	62.79	2214.91
28-Dec-10	65.80	31.40	36.80	5.78	71.48	2224.74
29-Dec-10	66.14	32.60	35.67	5.18	73.78	2241.82
30-Dec-10	65.81	32.60	36.34	4.11	73.29	2211.29
31-Dec-10	63.83	32.05	34.15	3.87	77.71	2236.15
Total	**1918.04**	**884.55**	**1121.37**	**138.60**	**2121.38**	**67079.74**

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.

Format-2

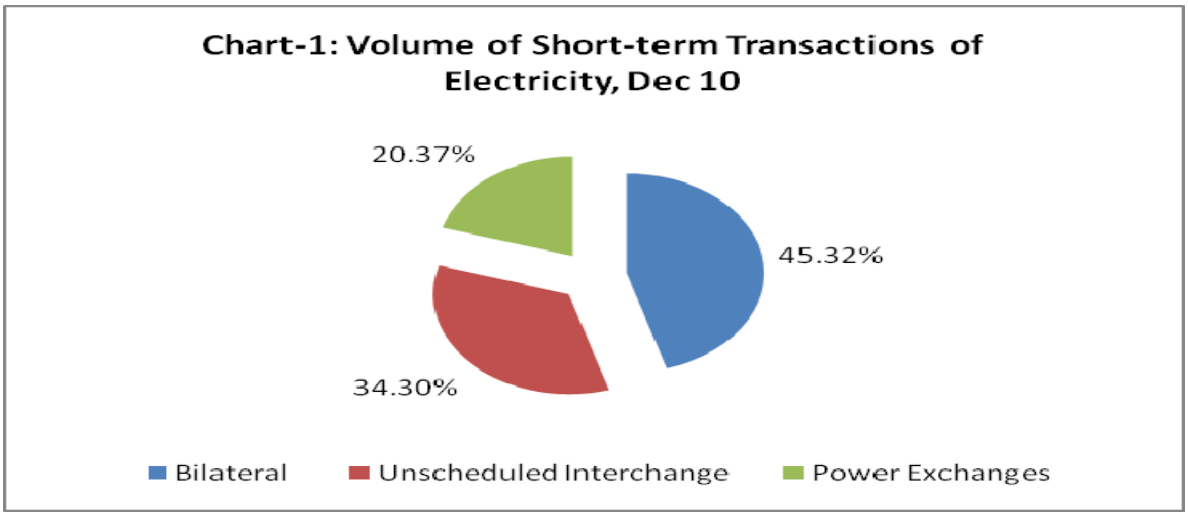
PRICE OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (Rs/KWh)												
Month: December 2010												
Market Segment	**Day ahead market of IEX**			**Day ahead market of PXIL**			**Under Drawl/Over Drawl from the Grid (UI)**					
							NEW Grid			**SR Grid**		
Date	**Mini-mum MCP**	**Maxi-mum MCP**	**Weighted Average***	**Mini-mum MCP**	**Maxi-mum MCP**	**Weighted Average***	**Mini-mum Price**	**Maxi-mum Price**	**Ave-rage Price****	**Mini-mum Price**	**Maxi-mum Price**	**Ave-rage Price****
1-Dec-10	0.88	4.00	2.39	1.18	5.50	3.56	0.00	6.85	2.51	0.00	12.22	2.89
2-Dec-10	1.00	4.25	2.46	1.18	5.30	3.63	0.16	12.22	2.74	0.00	17.46	2.68
3-Dec-10	1.00	3.95	2.39	1.00	5.30	2.94	0.00	12.22	3.30	0.00	5.44	2.17
4-Dec-10	1.00	4.00	2.39	1.00	5.26	2.87	0.00	12.22	3.38	0.00	4.03	1.81
5-Dec-10	1.26	3.50	2.27	1.00	5.30	3.23	0.00	6.38	1.73	0.00	3.57	1.28
6-Dec-10	1.20	4.00	2.57	1.00	5.50	2.74	0.00	5.44	2.12	0.00	4.97	1.45
7-Dec-10	1.00	4.45	2.46	1.00	5.40	3.05	0.00	6.38	2.18	0.00	5.44	1.56
8-Dec-10	1.00	3.90	2.41	1.00	5.40	2.83	0.00	6.85	2.12	0.00	3.57	1.62
9-Dec-10	1.00	3.25	2.04	1.00	5.40	2.77	0.00	4.50	1.93	0.00	4.03	1.54
10-Dec-10	0.95	2.85	1.73	0.95	5.40	2.49	0.00	6.38	2.48	0.00	4.50	1.55
11-Dec-10	0.95	2.50	1.60	0.95	3.50	2.21	0.16	7.79	2.80	0.00	4.50	2.10
12-Dec-10	0.97	2.50	1.68	0.97	4.75	1.81	0.00	3.72	1.67	0.00	3.41	1.22
13-Dec-10	1.20	3.50	1.97	1.20	5.00	2.63	0.00	4.03	1.74	0.00	4.50	2.48
14-Dec-10	1.40	3.70	2.19	1.25	5.50	2.71	0.00	6.38	2.40	0.00	8.26	3.01
15-Dec-10	1.40	3.25	2.22	1.25	5.40	2.75	0.47	7.32	2.94	0.00	7.32	3.14
16-Dec-10	1.30	3.40	2.29	1.35	5.40	2.97	0.16	5.91	2.68	0.00	12.22	3.47
17-Dec-10	1.30	3.51	2.44	1.30	5.40	2.67	0.00	12.22	3.73	0.00	7.32	3.47
18-Dec-10	1.25	3.31	2.33	1.60	5.40	3.18	0.00	12.22	2.79	0.00	12.22	2.95
19-Dec-10	1.20	3.25	2.41	1.20	5.20	2.76	0.00	4.50	1.66	0.00	5.91	2.12
20-Dec-10	1.10	3.81	2.67	1.10	5.00	3.09	0.00	6.38	2.06	0.00	7.32	2.56
21-Dec-10	1.10	4.00	2.70	1.10	5.00	3.26	0.31	12.22	3.18	0.00	12.22	2.98
22-Dec-10	1.04	4.00	2.74	1.10	5.01	3.17	0.00	7.32	2.73	0.62	12.22	3.40
23-Dec-10	1.03	3.75	2.79	1.10	5.00	3.18	0.78	6.85	3.01	0.47	12.22	3.45
24-Dec-10	1.05	4.00	2.79	1.10	4.95	3.20	0.00	8.26	2.90	0.00	12.22	3.59
25-Dec-10	1.10	3.65	2.73	1.10	4.90	3.25	0.31	7.79	2.56	0.47	12.22	3.54
26-Dec-10	1.10	3.65	2.58	1.10	4.00	3.04	0.00	12.22	2.39	0.00	6.85	3.07
27-Dec-10	1.10	3.99	2.76	1.10	4.50	3.22	0.47	12.22	3.62	0.31	12.22	4.02
28-Dec-10	1.10	4.00	2.92	1.10	4.50	3.18	0.00	12.22	3.19	0.00	7.79	3.48
29-Dec-10	1.10	4.50	3.01	1.10	4.52	3.18	0.00	7.79	2.72	0.00	7.32	3.06
30-Dec-10	1.20	4.33	2.96	1.20	6.50	3.09	0.00	3.41	1.47	0.00	5.91	2.64
31-Dec-10	1.00	3.85	2.67	1.10	5.50	3.00	0.00	6.38	2.10	1.24	7.32	3.65
	0.88#	4.50#	2.47	0.95#	6.50#	2.99	0.00#	12.22#	2.54	0.00#	17.46#	2.64
Source: Data on price of PX transactions from IEX and PXIL and data on UI Price from NLDC												
* Weighted average price computed based on Market Clearing Volume (MCV) and Market Clearing Price (MCP) for each hour of the day												
** 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												

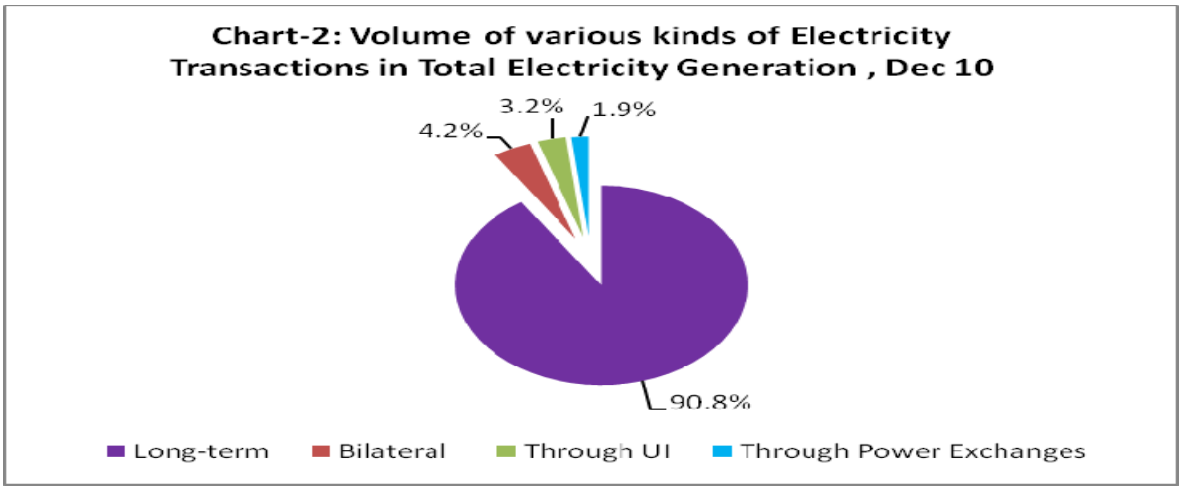
Format-3

VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY*-WISE) (MUs)										
Month: December 2010										
Name of the State/UT/Other Regional Entity	**Through Bilateral**			**Through Power Exchange**			**Through UI with Regional Grid**			**Total Net****
	Sale	**Pur-chase**	**Net***	**Sale**	**Pur-chase**	**Net***	**Export (Under Drawl)**	**Import (Over Drawl)**	**Net***	
Punjab	447	27	-420	11	404	393	84	68	-16	-42
Haryana	219	34	-185	0	110	110	4	534	530	454
Rajasthan	12	289	277	9	230	222	57	157	100	598
Delhi	149	0	-148	72	8	-63	106	33	-73	-284
Uttar Pradesh	95	45	-49	0	55	55	170	69	-101	-96
Uttarakhand	0	130	130	4	0	-4	4	127	123	249
Himachal Pradesh	19	181	162	9	0	-9	24	37	12	166
J & K	41	247	206	2	0	-2	29	48	19	223
UT Chandigarh	7	0	-7	0	0	0	2	12	10	2
MP	0	378	378	3	10	7	58	120	62	447
Maharashtra	115	322	207	45	76	31	189	23	-166	73
Gujarat	103	0	-103	140	21	-119	291	15	-276	-499
Chattisgarh	107	0	-107	393	0	-393	174	12	-162	-662
Daman and Diu	0	0	0	0	1	1	11	16	5	6
Dadra & Nagar Haveli	0	0	0	0	8	8	5	30	25	33
Andhra Pradesh	164	15	-149	61	35	-26	83	35	-47	-223
Karnataka	113	231	118	103	6	-97	39	53	14	34
Kerala	55	121	66	0	18	18	2	95	93	177
Tamilnadu	26	680	655	0	271	271	23	117	94	1020
Pondicherry	0	0	0	0	0	0	18	2	-16	-16
West Bengal	394	2	-392	69	0	-69	137	42	-96	-557
Orissa	27	0	-27	15	0	-15	62	43	-19	-61
Bihar	0	0	0	0	0	0	15	21	6	6
Jharkhand	0	74	74	0	0	0	24	15	-9	65
Sikkim	0	2	2	22	0	-22	6	4	-2	-21
DVC	74	0	-74	0	0	0	128	3	-124	-199
Arunachal Pradesh	0	0	0	0	5	5	1	9	7	12
Assam	1	10	10	1	0	-1	12	8	-4	4
Manipur	0	0	0	0	0	0	2	10	8	8
Meghalaya	2	12	10	0	0	0	3	16	13	22
Mizoram	0	1	1	2	0	-2	0	13	13	11
Nagaland	0	0	0	0	0	0	0	14	14	14
Tripura	1	0	-1	23	0	-23	5	1	-3	-28
GOA	0	0	0	2	1	0	18	12	-6	-7
JINDAL POWER	459	0	-459	62	0	-62	4	3	-1	-522
LANKO_AMK	0	0	0	138	0	-138	111	0	-111	-248
LANKO_KONDAPALLY	137	0	-137	72	0	-72	4	12	7	-202
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), DEC 2010				
Sr.No	**Short-term transactions**	**Volume (MUs)**	**% to Volume of short-term transactions**	**% to Total Generation**
1	Bilateral	2802.59	45.32%	4.18%
	(i) Through Traders and PXs	*1918.04*	31.02%	2.86%
	(ii) Direct	*884.55*	14.30%	1.32%
2	Through Power Exchanges	1259.97	20.37%	1.88%
	IEX	*1121.37*	18.13%	1.67%
	PXIL	*138.60*	2.24%	0.21%
3	Through UI	2121.38	34.30%	3.16%
	Total	**6183.94**	**100.00%**	**9.22%**
	Total Generation	**67079.74**	–	–

Source: NLDC





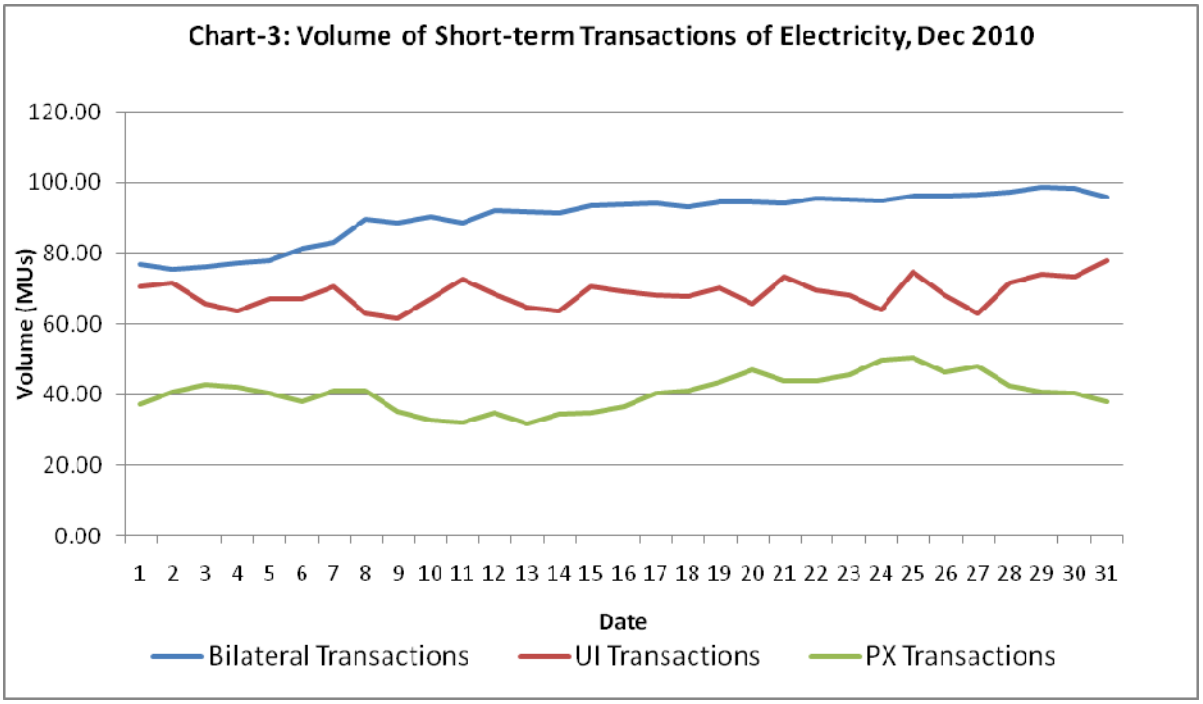


Chart-3: Volume of Short-term Transactions of Electricity, Dec 2010
120.00
100.00
80.00
60.00
40.00
20.00
0.00
Volume (MUs)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Date
Bilateral Transactions
UI Transactions
PX Transactions

Table-2: Percentage Share of Electricity Traded by Trading Licensees during December 2010			
Sr.No	**Name of the Trading Licensee**	**% Share in total Volume traded by Licensees**	**Herfindahl-Hirschman Index**
1	PTC India Ltd	35.97%	0.1294
2	NTPC Vidyut Vyapar Nigam Ltd	20.34%	0.0414
3	National Energy Trading & Services Limited	11.69%	0.0137
4	Reliance Energy Trading (P) Ltd	11.54%	0.0133
5	Tata Power Trading Company (P) Ltd	5.27%	0.0028
6	JSW Power Trading Company Ltd	3.55%	0.0013
7	Instinct Advertisement & Marketing Ltd	3.28%	0.0011
8	Shree Cement Ltd.	2.79%	0.0008
9	GMR Energy Trading Ltd	2.03%	0.0004
10	Knowledge Infrastructure Systems (P) Ltd	1.93%	0.0004
11	RPG Power Trading Company Ltd.	0.96%	0.0001
12	Pune Power Development (P) Ltd	0.31%	0.0000
13	Mittal Power Processor Ltd.	0.27%	0.0000
14	Global Energy Pvt. Ltd.	0.05%	0.0000
15	Jindal Power Trading Company Ltd.	0.02%	0.0000
16	Essar Electric Power Development Corp. Ltd.	0.001%	0.0000
	Total	100.00%	**0.2045**
	Top 5 trading licensees	**84.81%**	
Note: Volume of electricity traded by the licensees includes bilateral transactions (inter-state) and the transactions undertaken through power exchanges.			
Source: Information submitted by trading licensees			

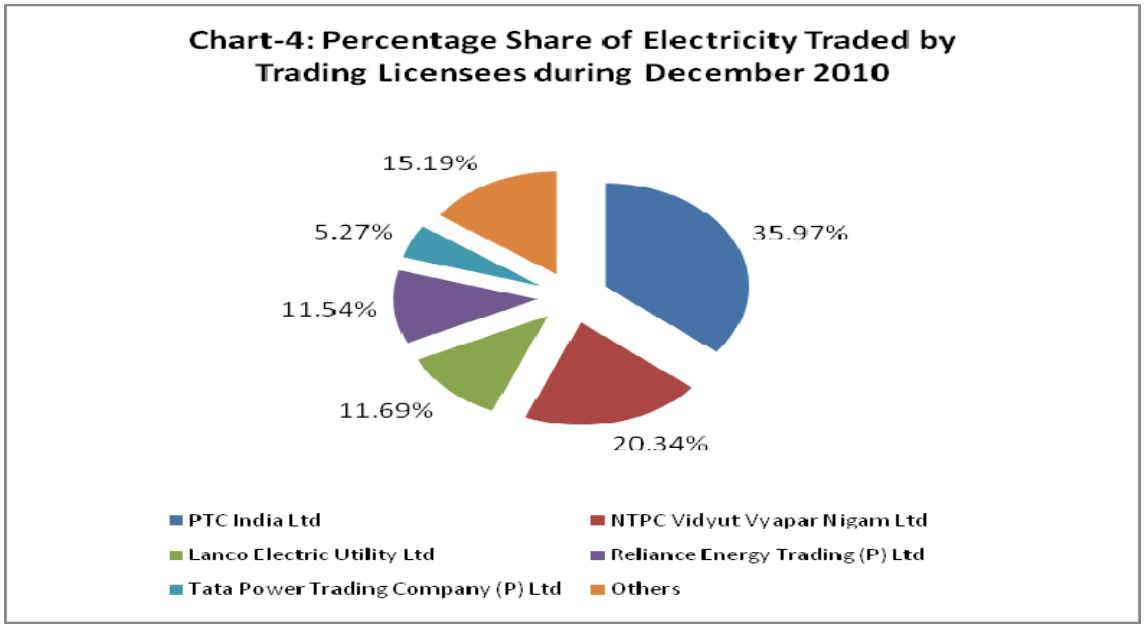


Table-3: PRICE OF POWER TRANSACTED THROUGH TRADERS		
Sr.No	**Period of Trade**	**Weighted Average Sale Price (Rs)**
1	RTC	4.12
2	PEAK	4.86
3	OFF PEAK	3.46

Source: Information submitted by trading licensees

Table-4: PRICE OF POWER TRANSACTED THROUGH TRADERS		
Sr.No		**Sale Price (Rs/KWh)**
1	Minimum	2.56
2	Maximum	5.89
3	Weighted Average	3.95

Source: Information submitted by trading licensees

Table-5: PRICE OF POWER TRANSACTED THROUGH POWER EXCHANGE (Rs/KWh)			
Sr.No	**MCP**	**IEX**	**PXIL**
1	Minimum	0.88	0.95
2	Maximum	4.50	6.50
3	Weighted Average	2.47	2.99

Source: Information submitted by IEX and PXIL

Table-5A: Term ahead market of IEX			
Sr.No	**Term ahead contracts**	**Actual Scheduled Volume (MUs)**	**Weighted Average Price (Rs/kwh)**
1	Intra-Day Contracts	0.40	4.20
2	Weekly Contracts	75.57	2.66
	Total	**75.97**	

Source: IEX

Table-5B: Term ahead market of PXIL			
Sr.No	**Term ahead contracts**	**Actual Scheduled Volume (MUs)**	**Weighted Average Price (Rs/kwh)**
1	Weekly Contracts	150.86	2.68
	Total	**150.86**	

Source: PXIL

Table-6: PRICE OF POWER TRANSACTED THROUGH UI (Rs/KWh)			
Sr.No		**NEW Grid**	**SR Grid**
1	Minimum	0.00	0.00
2	Maximum	12.22	17.46
3	Average	2.54	2.64

Source: NLDC

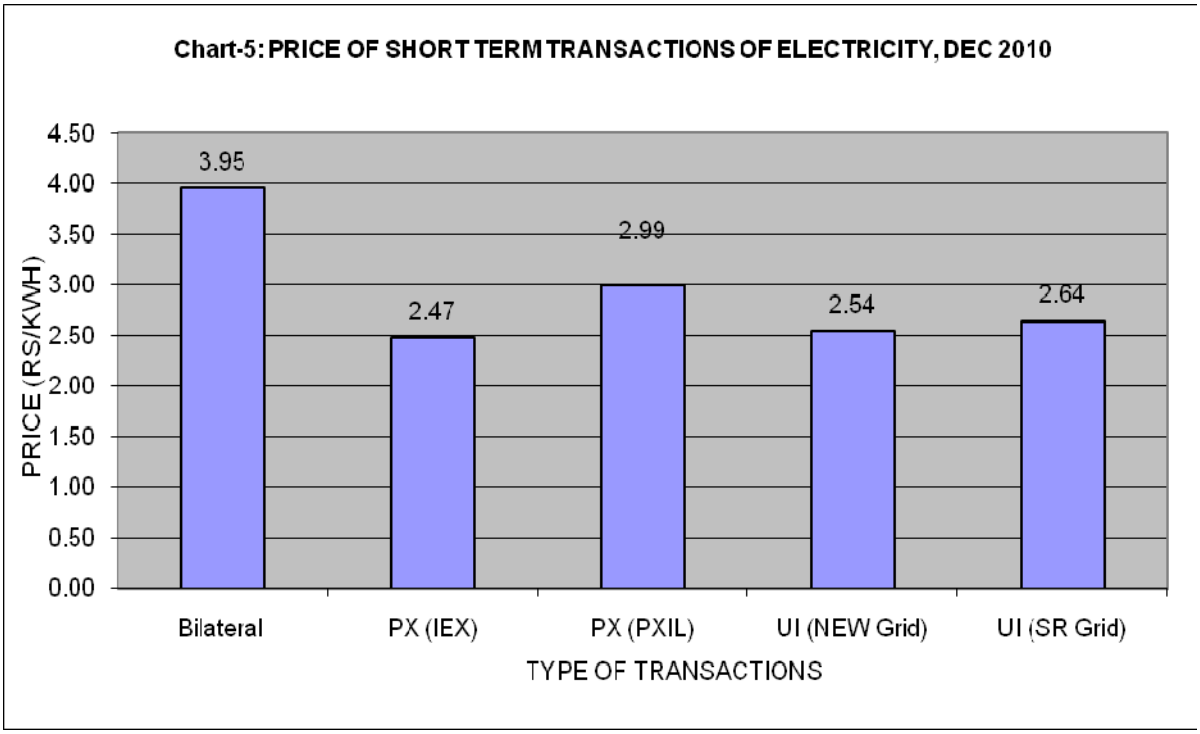


Chart-5: PRICE OF SHORT TERM TRANSACTIONS OF ELECTRICITY, DEC 2010
PRICE (RS/KWH)
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
3.95
2.47
2.99
2.54
2.64
Bilateral
PX (IEX)
PX (PXIL)
UI (NEW Grid)
UI (SR Grid)
TYPE OF TRANSACTIONS

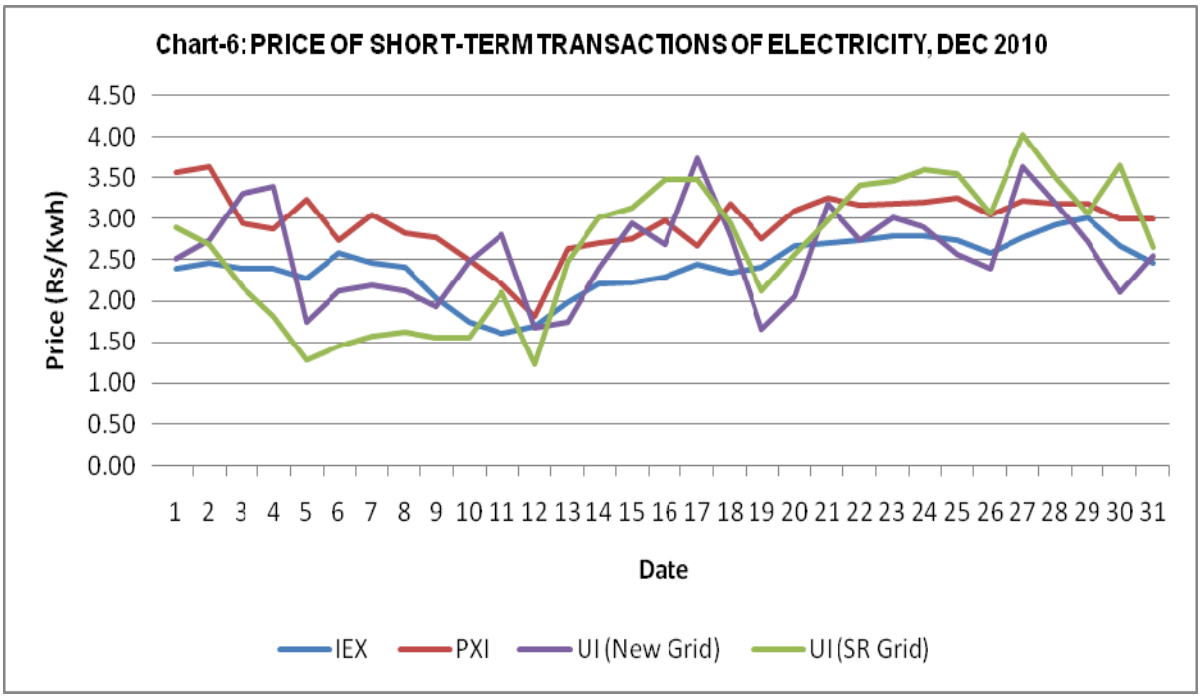


Chart-6: PRICE OF SHORT-TERM TRANSACTIONS OF ELECTRICITY, DEC 2010
Price (Rs/Kwh)
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Date
IEX
PXI
UI (New Grid)
UI (SR Grid)

Table-7: VOLUME OF ELECTRICITY SALE THROUGH BILATERAL		
Name of the State/UT/Other Regional Entity	**Volume of Sale (MUs)**	**% of Volume**
JINDAL POWER	458.94	0.17
Punjab	447.33	0.16
West Bengal	393.90	0.14
Haryana	219.27	0.08
Andhra Pradesh	164.35	0.06
Delhi	148.53	0.05
LANKO_KONDAPALLY	137.18	0.05
Maharashtra	114.89	0.04
Karnataka	112.77	0.04
Chattisgarh	106.57	0.04
Gujarat	103.26	0.04
Uttar Pradesh	94.74	0.03
DVC	74.40	0.03
Kerala	55.38	0.02
J & K	41.11	0.01
Orissa	27.21	0.01
Tamilnadu	25.54	0.01
Himachal Pradesh	18.55	0.01
Rajasthan	11.74	0.00
UT Chandigarh	7.44	0.00
Meghalaya	2.00	0.00
Tripura	1.49	0.00
Assam	0.72	0.00
Total	**2767.28**	**1.00**
Volume of sale by top 5 States	**1683.77**	**61%**

Table-8: VOLUME OF ELECTRICITY PURCHASE THROUGH BILATERAL		
Name of the State/UT/Other Regional Entity	**Volume of Purchase (MUs)**	**% of Volume**
Tamilnadu	680.27	24.27%
MP	377.81	13.48%
Maharashtra	322.26	11.50%
Rajasthan	289.03	10.31%
J & K	246.81	8.81%
Karnataka	230.68	8.23%
Himachal Pradesh	180.90	6.45%
Uttarakhand	130.20	4.65%
Kerala	121.35	4.33%
Jharkhand	74.40	2.65%
Uttar Pradesh	45.35	1.62%
Haryana	33.82	1.21%
Punjab	27.47	0.98%
Andhra Pradesh	15.34	0.55%
Meghalaya	11.57	0.41%
Assam	10.37	0.37%
Sikkim	2.27	0.08%
West Bengal	1.72	0.06%
Mizoram	0.58	0.02%
Delhi	0.41	0.01%
Total	**2802.59**	**100%**
Volume of purchase by top 5 States	**1916.17**	**68%**

Table-9: VOLUME OF ELECTRICITY SALE THROUGH POWER EXCHANGE		
Name of the State/UT/Other Regional Entity	**Volume of Sale (MUs)**	**% of Volume**
Chattisgarh	393.31	31.22%
Gujarat	140.34	11.14%
LANKO_AMK	137.85	10.94%
Karnataka	103.42	8.21%
LANKO_KONDAPALLY	71.95	5.71%
Delhi	71.53	5.68%
West Bengal	69.09	5.48%
JINDAL POWER	61.98	4.92%
Andhra Pradesh	61.40	4.87%
Maharashtra	45.10	3.58%
Tripura	23.46	1.86%
Sikkim	21.94	1.74%
Orissa	15.03	1.19%
Punjab	10.80	0.86%
Himachal Pradesh	9.02	0.72%
Rajasthan	8.75	0.69%
Uttarakhand	4.08	0.32%
MP	2.81	0.22%
Mizoram	2.29	0.18%
J & K	1.84	0.15%
GOA	1.72	0.14%
Assam	1.29	0.10%
Meghalaya	0.44	0.04%
Kerala	0.35	0.03%
Total	**1259.79**	**100.00%**
Volume of purchase by top 5 States	**846.87**	**67%**

Table-10: VOLUME OF ELECTRICITY PURCHASE THROUGH POWER EXCHANGE		
Name of the State/UT/Other Regional Entity	**Volume of Purchase (MUs)**	**% of Volume**
Punjab	404.14	32.08%
Tamilnadu	271.19	21.52%
Rajasthan	230.35	18.28%
Haryana	109.56	8.70%
Maharashtra	76.03	6.03%
Uttar Pradesh	54.60	4.33%
Andhra Pradesh	35.25	2.80%
Gujarat	21.06	1.67%
Kerala	18.04	1.43%
MP	9.62	0.76%
Delhi	8.31	0.66%
Dadra & Nagar Haveli	8.01	0.64%
Karnataka	6.06	0.48%
Arunachal Pradesh	5.01	0.40%
GOA	1.49	0.12%
Daman and Diu	0.76	0.06%
West Bengal	0.37	0.03%
Tripura	0.14	0.01%
Total	**1259.97**	**100.00%**
Volume of sale by top 5 States	**1091.26**	**87%**

Table-11: VOLUME OF ELECTRICITY EXPORT THROUGH UI		
Name of the State/UT/Other Regional Entity	**Volume of Export (MUs)**	**% of Volume**
Gujarat	290.82	15.27%
Maharashtra	188.54	9.90%
Chattisgarh	174.09	9.14%
Uttar Pradesh	169.59	8.90%
West Bengal	137.48	7.22%
DVC	127.53	6.70%
LANKO_AMK	110.98	5.83%
Delhi	105.86	5.56%
Punjab	84.25	4.42%
Andhra Pradesh	82.73	4.34%
Orissa	61.94	3.25%
MP	58.00	3.05%
Rajasthan	57.30	3.01%
Karnataka	39.26	2.06%
J & K	29.12	1.53%
Himachal Pradesh	24.25	1.27%
Jharkhand	23.97	1.26%
Tamilnadu	23.33	1.23%
GOA	18.26	0.96%
Pondicherry	17.61	0.92%
Bihar	15.34	0.81%
Assam	12.28	0.64%
Daman and Diu	11.38	0.60%
Sikkim	6.10	0.32%
Dadra & Nagar Haveli	4.76	0.25%
Tripura	4.51	0.24%
LANKO_KONDAPALLY	4.17	0.22%
Haryana	3.93	0.21%
JINDAL POWER	3.66	0.19%
Uttarakhand	3.66	0.19%
Meghalaya	2.88	0.15%
Manipur	2.43	0.13%
UT Chandigarh	1.89	0.10%
Kerala	1.60	0.08%
Arunachal Pradesh	1.11	0.06%
Mizoram	0.08	0.00%
Nagaland	0.04	0.00%
Total	**1904.74**	**100.00%**
Volume of Export by top 5 States	**960.52**	**50%**

Table-12: VOLUME OF ELECTRICITY IMPORT THROUGH UI		
Name of the State/UT/Other Regional Entity	**Volume of Import (MUs)**	**% of Volume**
Haryana	533.62	29.19%
Rajasthan	156.85	8.58%
Uttarakhand	127.02	6.95%
MP	120.04	6.57%
Tamilnadu	117.41	6.42%
Kerala	95.05	5.20%
Uttar Pradesh	68.78	3.76%
Punjab	68.29	3.74%
Karnataka	52.86	2.89%
J & K	48.25	2.64%
Orissa	43.08	2.36%
West Bengal	41.87	2.29%
Himachal Pradesh	36.67	2.01%
Andhra Pradesh	35.37	1.93%
Delhi	32.95	1.80%
Dadra & Nagar Haveli	30.08	1.65%
Maharashtra	22.80	1.25%
Bihar	21.12	1.16%
Daman and Diu	16.23	0.89%
Meghalaya	16.13	0.88%
Jharkhand	15.01	0.82%
Gujarat	14.82	0.81%
Nagaland	14.02	0.77%
Mizoram	12.65	0.69%
Chattisgarh	11.98	0.66%
GOA	11.95	0.65%
UT Chandigarh	11.60	0.63%
LANKO_KONDAPALLY	11.58	0.63%
Manipur	10.35	0.57%
Arunachal Pradesh	8.53	0.47%
Assam	7.82	0.43%
Sikkim	4.42	0.24%
DVC	3.06	0.17%
JINDAL POWER	2.54	0.14%
Pondicherry	1.74	0.10%
Tripura	1.20	0.07%
LANKO_AMK	0.34	0.02%
Total	**1828.07**	**100.00%**
Volume of Export by top 5 States	**1054.94**	**58%**

Table-13: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY-WISE)		
Sr.No	**Name of the State/UT/Other Regional Entity**	**Total volume of net short-term transactions of electricity***
1	Tamilnadu	1020.00
2	Rajasthan	598.44
3	Haryana	453.81
4	MP	446.65
5	Uttarakhand	249.48
6	J & K	222.99
7	Kerala	177.10
8	Himachal Pradesh	165.75
9	Maharashtra	72.58
10	Jharkhand	65.43
11	Karnataka	34.14
12	Dadra & Nagar Haveli	33.33
13	Meghalaya	22.37
14	Nagaland	13.98
15	Arunachal Pradesh	12.43
16	Mizoram	10.87
17	Manipur	7.92
18	Bihar	5.78
19	Daman and Diu	5.60
20	Assam	3.89
21	UT Chandigarh	2.28
22	GOA	-6.54
23	Pondicherry	-15.87
24	Sikkim	-21.35
25	Tripura	-28.13
26	Punjab	-42.48
27	Orissa	-61.11
28	Uttar Pradesh	-95.60
29	DVC	-198.87
30	LANKO_KONDAPALLY	-201.72
31	Andhra Pradesh	-222.52
32	LANKO_AMK	-248.50
33	Delhi	-284.24
34	Gujarat	-498.54
35	JINDAL POWER	-522.03
36	West Bengal	-556.51
37	Chattisgarh	-661.99
** 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-14: DETAILS OF CONGESTION IN DAY AHEAD COLLECTIVE TRANSACTIONS ON POWER EXCHANGES, DEC 2010			
	Details of Congestion	**IEX**	**PXIL**
A	Unconstrained Cleared Volume* (MU)	1140.62	163.55
B	Actual Cleared Volume and hence scheduled (MU)	1121.37	138.60
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MU) (A-B)	19.25	24.95
D	Volume of electricity that could not be cleared as % to Actual Cleared Volume	1.7%	18.0%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	34.14%	38.71%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	5%	6%
	6.00 - 12.00 hours	29%	27%
	12.00 - 18.00 hours	17%	20%
	18.00 - 24.00 hours	50%	46%

** This power would have been scheduled had there been no congestion.*