

Monthly Report on Short-term Transactions of Electricity in India

May, 2016



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Abbreviations

Abbreviation	Expanded Version
ACBIL	ACB (India) Limited
ACP	Area Clearing Price
ACV	Area Clearing Volume
Adani HVDC	Adani Power Limited (High Voltage Direct Line Current Line)
AD HYDRO	AD Hydro Power Limited
BALCO	Bharat Aluminum Company Limited
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CGPL	Coastal Gujarat Power Limited
CHUZACHEN HEP	Chuzachen Hydro electric power project
COASTGEN	Coastal Energen Private Limited
DAGACHU	Dagachhu Hydro Power Corporation
DB POWER	Diligent Power Pvt. Ltd.
DCPP	Donga Mahua Captive Power Plant
DGEN MEGA POWER	DGEN Mega Power Project
DHARIWAL POWER	Dhariwal Power Station
DSM	Deviation Settlement Mechanism
DVC	Damodar Valley Corporation
EMCO	EMCO Energy Limited
ESSAR POWER	Essar Power Limited
ESSAR STEEL	Essar Steel Ltd
GMR CHHATTISGARH	GMR Chhattisgarh Energy Limited
GMR KAMALANGA	GMR Kamalanga Energy Ltd.
IEX	Indian Energy Exchange Limited
J&K	Jammu & Kashmir
JAYPEE NIGRIE	Jaypee Nigrie Super Thermal Power Project
JINDAL POWER	Jindal Power Limited
JINDAL STAGE-II	Jindal Power Ltd Stage II
JITPL	Jindal India Thermal Power Ltd.
JORETHANG	Jorethang Loop Hydroelectric Power Project
KARCHAM WANGTOO	Jaypee Karcham Hydro Corporation Limited
KORBA WEST POWER	Korba West Power Company Limited
KSK MAHANADI	KSK Mahanadi Power Ltd
LANKO BUDHIL	Lanco Budhil Hydro Power Private Limited
LANKOAMK	Lanco Amarkantak Power Private Limited
LANKOKONDAPALLY	Lanco Kondapally Power Private Limited
LOKTAK	Loktak Power Project
MALANA	Malana Hydroelectric Plant

MB POWER	MB Power Ltd
MEENAKSHI	Meenakshi Energy Private Limited
MP	Madhya Pradesh
MUs	Million Units
NEEPCO	North Eastern Electric Power Corporation Limited
NHPC STATIONS	National Hydro Electric Power Corporation Ltd. Stations
NTPC STATIONS	National Thermal Power Corporation Ltd. Stations
NJPC	Nathpa Jhakri Hydroelectric Power Station
NLDC	National Load Despatch Centre
NSPCL	NTPC - SAIL Power Company Private Limited
OTC	Over The Counter
PX	Power Exchange
PXIL	Power Exchange India Limited
RANGIT HEP	Rangit Hydro electric power project
REC	Renewable Energy Certificate
RGPPL	Ratnagiri Gas and Power Private Limited
RLDC	Regional Load Despatch Centre
RTC	Round The Clock
SHREE CEMENT	Shree Cement Limited
SIMHAPURI	Simhapuri Energy Private Limited
SPECTRUM	Spectrum Power Generation Ltd
STERLITE	Sterlite Energy Limited
TEESTA HEP	Teesta Hydro Electric Power Project
THERMAL POWERTECH	Thermal Powertech Corporation India Limited
URI2	URI2 Hydro Power Project
UT	Union Territory
VANDANA VIDYUT	Vandana Vidyut Limited

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 (inter-State & intra-State) 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 Deviation Settlement Mechanism (DSM). 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; (iii) to analyse effect of congestion on volume of electricity transacted through power exchanges; (iv) to analyse bilateral contracts executed by traders; (v) to provide information on volume and price of Renewable Energy Certificates (RECs) transacted through power exchanges; and (vi) to disclose/disseminate all relevant market information. The details of the report for the month of **May, 2016** are as under:

I: Volume of Short-term Transactions of Electricity

During May 2016, total electricity generation excluding generation from renewable and captive power plants in India was 99833.67 MUs (Table-1).

Of the total electricity generation, 9923.36 MUs (9.94%) was transacted through short-term, comprising of 4931.86 MUs (4.94%) through bilateral (through traders and term-ahead contracts on power exchanges and directly between distribution companies), followed by 2936.37 MUs (2.94%) through day ahead collective transactions on power exchanges (IEX and PXIL) and 2055.13 MUs (2.06%) through DSM (Table-1 & Figure-2).

Of the total short-term transactions, bilateral constitutes 49.70% (33.13% through traders and term-ahead contracts on power exchanges and 16.57% directly between distribution companies) followed by 29.59% through day ahead collective transactions on power exchanges and 20.71% through DSM (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 the trading licensees is provided in Table-2 & Figure-4. The volume of electricity transacted by the trading licensees includes bilateral transactions and the transactions undertaken through power exchanges. There were 40 trading licensees as on May, 2016. In May 2016, 22 trading licensees were engaged in short term trading. Top 5 trading licensees had a share of 70.74% in the total volume traded by all the licensees. These are PTC India Ltd., Mittal Processors (P) Ltd., Tata Power Trading Company (P) Ltd., JSW Power Trading Company Ltd. and Adani Enterprises Ltd.

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 concentration, and vice versa. The HHI below 0.15 indicates non-concentration, HHI between 0.15 and 0.25 indicates moderate concentration and HHI above 0.25 indicates high concentration. The HHI has been computed based on the volume of electricity traded (inter-State & intra-State) by inter-State trading licensees, and it was 0.1463 for the month of May 2016, which indicates non-concentration of market power (Table-2).

The volume of electricity transacted through IEX and PXIL in the day ahead market was 2916.71 MUs and 19.66 MUs respectively. The volume of total buy bids and sell bids was 3424.74 MUs and 5736.44 MUs respectively in IEX while the same was 50.09 MUs and 48.73 MUs respectively in PXIL. The variation in the volume of buy bids and sell bids placed through power exchanges shows variation in the demand and supply position.

The volume of electricity transacted through IEX and PXIL in the term-ahead market was 55.97 MUs and 62.36 MUs respectively (Table-6 & Table-7).

II: Price of Short-term Transactions of Electricity

(i) *Price of electricity transacted through Traders:* The minimum, maximum and weighted average sale prices have been computed for the electricity transacted through traders and the sale prices were ₹2.52/kWh, ₹6.54/kWh and ₹3.64/kWh respectively (Table-3). The weighted average sale prices were also computed for the transactions during Round

the Clock (RTC), Peak and Off-Peak periods separately, and the sale prices were ₹3.70/kWh, ₹3.40/kWh and ₹3.08/kWh respectively (Table-4).

(ii) Price of electricity transacted through Power Exchanges: The 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 ₹0.09/kWh, ₹6.50/kWh and ₹2.45/kWh respectively in IEX and ₹2.18/kWh, ₹3.0/kWh and ₹2.61/kWh respectively in PXIL (Table-5).

The price of electricity transacted through IEX and PXIL in the term-ahead market was ₹3.92/kWh and ₹2.94/kWh respectively (Table-6 and Table-7).

(iii) Price of electricity transacted through DSM: The average deviation settlement price was ₹1.60/kWh. The minimum and maximum deviation settlement prices were ₹0.00/kWh and ₹6.16/kWh respectively (Table-8).

The prices of electricity transacted through trading licensees, power exchanges and DSM 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 42.54% of the volume, and these were Thermal Powertech Corporation India Ltd., Rajasthan, Jammu & Kashmir, Diligent Power Pvt. Ltd. and Himachal Pradesh. Top 5 regional entities purchased 66.01% of the volume, and these were Uttar Pradesh, Maharashtra, West Bengal, Telangana, and Delhi (Table-9& 10).

Of the total power exchange transactions, top 5 regional entities sold 38.40% of the volume, and these were Himachal Pradesh, Jindal India Thermal Power Ltd., Jaypee Karcham Hydro Corporation Ltd., Jindal Power Ltd. and Madhya Pradesh. Top 5 regional entities purchased 49.89% of the volume, and these were Gujarat, Rajasthan, Essar Steel Ltd., Haryana and Punjab (Table-11 & 12).

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.

Of the total DSM transactions, top 5 regional entities underdrew 29.49% of the volume, and these were Maharashtra, Uttar Pradesh, NTPC Stations (Western Region), Madhya Pradesh and Punjab (Table-13). Top 5 regional entities overdrew 25.26% of the volume, and these were Uttar Pradesh, NTPC Stations (Eastern Region), NTPC Stations (Northern Region), NTPC Stations (Western Region) and Tamil Nadu (Table-14).

Regional entity-wise total volume of net short-term transactions of electricity i.e. volume of net transactions through bilateral, power exchanges and DSM is shown in Table-15 & 19. Top 5 electricity selling regional entities were Himachal Pradesh, Jindal India Thermal Power Ltd, Thermal Powertech Corporation India Ltd., Diligent Power Pvt. Ltd. and Jammu & Kashmir. Top 5 electricity purchasing regional entities were Uttar Pradesh, West Bengal, Telangana, Maharashtra and Bihar.

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 May 2016, congestion occurred in both the power exchanges. The details of congestion 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

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.

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 IEX and PXIL due to congestion was 4.99% and 50.95% of the unconstrained cleared volume respectively. In terms of time, congestion occurred was 84.24% in IEX and 20.00% in PXIL (Table-16).

V: Bilateral Contracts executed by Traders

In addition to the analysis on short-term transactions of electricity in May 2016, this section covers an analysis of bilateral contracts executed in June, 2016.

(i) Duration of bilateral contracts: During June, 2016, a total of 123 bilateral contracts (excluding banking/swap contracts) have been executed by traders for the volume of 1433.08 MUs. Figure-7 shows the percentage of contracts categorized according to the period of power supply. It can be observed from the figure that 72.36% of the bilateral contracts were executed for duration of up to one week, 26.83% of the contracts were executed for duration of more than a week and upto one month and 0.81% of the contracts were executed for more than one month and upto three months.

During the month, 153 banking/swapping bilateral contracts were also executed for the volume of 4387.77 MUs.

(ii) Forward Curve based on price of bilateral contracts: A forward curve reflects present day's expectation of prices for a future period. The forward curve of electricity prices are based on sale prices of bilateral contracts executed by traders. The price of each contract for each day is taken into consideration while constructing the forward curve. On the basis of these prices, the weighted average price for each day is calculated using various sale prices of contracts for delivery on that particular day.

Figure-8 represents the forward curve of electricity sale prices for the period from June, 2016 to October, 2016 based on bilateral contracts⁴ executed till June, 2016. Forward curves have been drawn for the contracts executed in June, 2016 and May, 2016 for the purpose of comparison. It is observed that the forward prices for the contracts executed in

⁴Excluding Banking/Swapping contracts

June, 2016 are relatively higher during the months of July and August, 2016 and are relatively lower for the month of October, 2016 than the forward prices of contracts executed in May, 2016.

VI: Volume and Price of Renewable Energy Certificates (RECs)

The concept of Renewable Energy Certificates (RECs) seeks to address mismatch between availability of renewable energy and the requirement of the obligated entities to meet their renewable purchase obligation by purchasing green attributes of renewable energy remotely located in the form of RECs. The REC mechanism is a market based instrument, to promote renewable sources of energy and development of electricity market.

One REC is equivalent to 1 MWh electricity injected into the grid from renewable energy sources. The REC is exchanged only in the power exchanges approved by CERC within the band of a floor price and forbearance (ceiling) price as notified by CERC from time to time. The first REC trading session was held on power exchanges in March, 2011.

The details of REC transactions for the month of May, 2016 are shown in Table-20. The market clearing volume of solar RECs transacted on IEX and PXIL were 17113 and 2970 respectively and the market clearing price of these RECs was ₹3500/MWh on both the power exchanges. Market clearing volume of non-solar RECs transacted on IEX and PXIL were 88923 and 72935 respectively and the market clearing price of these RECs was ₹1500/MWh on both the power exchanges.

The gap between the volume of buy and sell bids of RECs placed through power exchanges shows that there was less demand for both solar and non-solar RECs. For Solar RECs, the ratio of buy bids to sell bids was 0.006 and 0.004 for IEX and PXIL respectively. For non-solar RECs, the ratio of buy bids to sell bids was 0.012 and 0.014 for IEX and PXIL respectively.

VII: Inferences:

- The percentage of short-term transactions of electricity to total electricity generation was 9.94%.
- Of the total short-term transactions of electricity, 49.70% was transacted through bilateral (through traders and term ahead contracts on power exchanges and directly by distribution companies), followed by 29.59% through power exchanges and 20.71% through DSM.
- Top 5 trading licensees had a share of 70.74% in the total volume traded by all the trading licensees.
- The Herfindahl Hirschman Index computed for the volume of electricity traded by trading licensees was 0.1463, indicating non-concentration of market power.
- The weighted average price of electricity transacted through trading licensees was ₹3.64/kWh. The weighted average prices of electricity transacted through IEX and PXIL were ₹2.45/kWh and ₹2.61/kWh respectively.
- The average price of electricity transacted through DSM was ₹1.60/kWh.
- Top 5 electricity selling regional entities were Himachal Pradesh, Jindal India Thermal Power Ltd, Thermal Powertech Corporation India Ltd., Diligent Power Pvt. Ltd. and Jammu & Kashmir. Top 5 electricity purchasing regional entities were Uttar Pradesh, West Bengal, Telangana, Maharashtra and Bihar.
- The volume of electricity that could not be cleared due to congestion was 4.99% and 50.95% of the unconstrained cleared volume in IEX and PXIL, respectively. In terms of time, congestion occurred was 84.24% of the time in IEX and 20.00% of the time in PXIL.
- In June 2016, 72.36% of the bilateral contracts were executed for duration of up to one week, 26.83% of the contracts were executed for duration of more than a week and upto one month and 0.81% of the contracts were executed for a period of more than one month and upto three months.

- The forward prices for the contracts executed in June, 2016 are relatively higher in the months of July and August, 2016 and relatively lower for the month of October, 2016 than the forward prices of contracts executed in May, 2016.
- The market clearing volume of solar RECs transacted on IEX and PXIL were 17113 and 2970 respectively and the market clearing price of these RECs was ₹3500/MWh on both the power exchanges. Market clearing volume of non-solar RECs transacted on IEX and PXIL were 88923 and 72935 respectively and the market clearing price of these RECs was ₹1500/MWh on both the power exchanges.

Table-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (ALL INDIA), MAY 2016				
Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	4931.86	49.70	4.94
	(i) Through Traders and PXs	3287.82	33.13	3.29
	(ii) Direct	1644.04	16.57	1.65
2	Through Power Exchanges	2936.37	29.59	2.94
	(i) IEX	2916.71	29.39	2.92
	(ii) PXIL	19.66	0.20	0.020
3	Through DSM	2055.13	20.71	2.06
	Total	9923.36	-	9.94
	Total Generation	99833.67	-	-

Source: NLDC

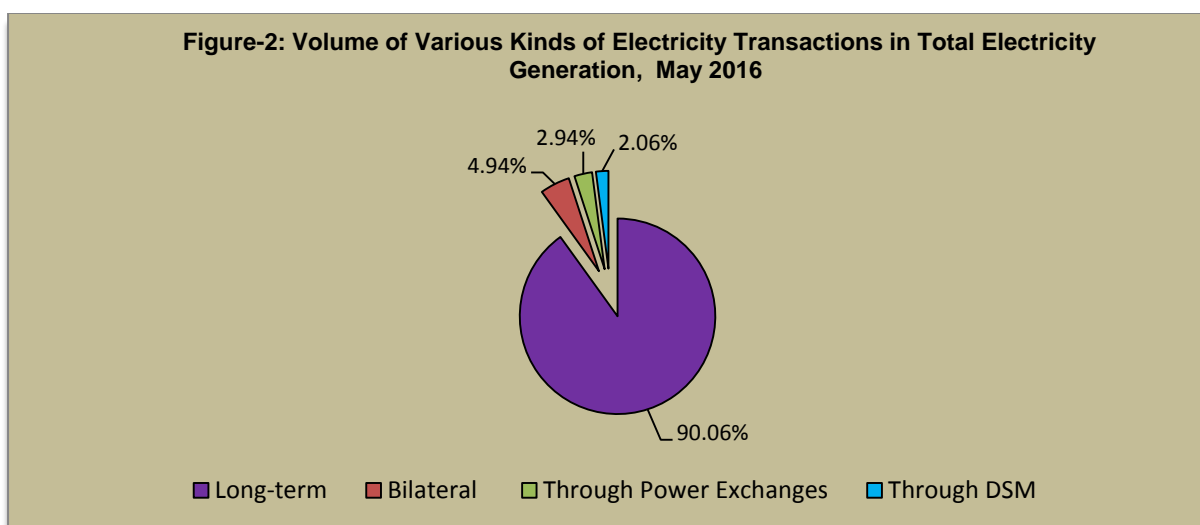
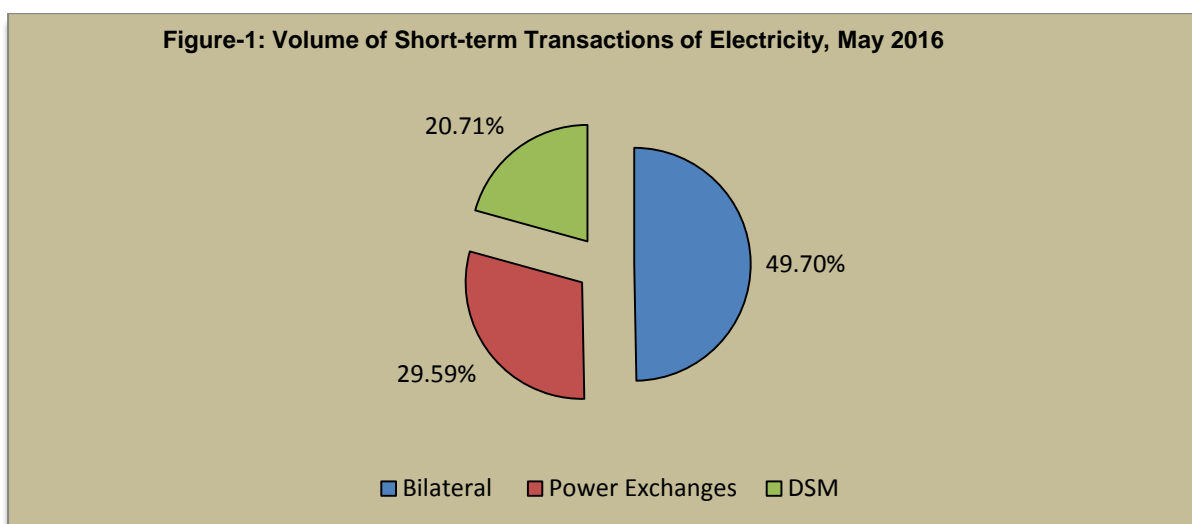


Figure-3: Volume of Short-term Transactions of Electricity, May 2016 (Day-wise)

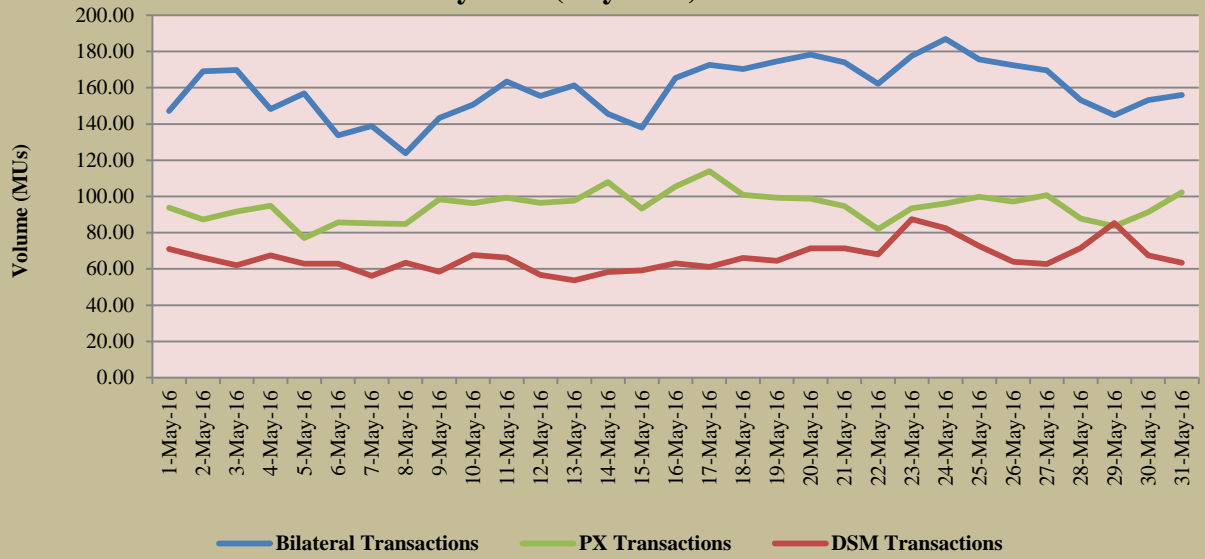


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, MAY 2016			
Sr.No	Name of the Trading Licensee	% Share in total Volume transacted by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd.	30.25	0.0915
2	Mittal Processors (P) Ltd.	12.79	0.0164
3	Tata Power Trading Company (P) Ltd.	11.45	0.0131
4	JSW Power Trading Company Ltd	8.68	0.0075
5	Adani Enterprises Ltd.	7.58	0.0057
6	Manikaran Power Ltd.	6.42	0.0041
7	GMR Energy Trading Ltd.	5.30	0.0028
8	NTPC Vidyut Vyapar Nigam Ltd.	4.92	0.0024
9	Arunachal Pradesh Power Corporation (P) ltd	4.11	0.0017
10	Knowledge Infrastructure Systems (P) Ltd	2.26	0.0005
11	SN Power Markets Pvt. Ltd.	1.23	0.0002
12	My Home Power Private Ltd.	1.10	0.0001
13	National Energy Trading & Services Ltd.	1.10	0.0001
14	Instinct Infra & Power Ltd.	0.94	0.0001
15	RPG Power Trading Company Ltd.	0.80	0.0001
16	Gita Power & Infrastructure Private Limited	0.29	0.0000
17	Shree Cement Ltd.	0.26	0.0000
18	Customized Energy Solutions India (P) Ltd.	0.23	0.0000
19	Jaiprakash Associates Ltd.	0.13	0.0000
20	Phillip Commodities India (P) Ltd.	0.09	0.0000
21	Essar Electric Power Development Corp. Ltd.	0.06	0.0000
22	Ambitious Power Trading Company Ltd.	0.01	0.0000
TOTAL		100.00%	0.1463
Top 5 trading licensees		70.74%	
<i>Note 1: Volume of electricity transacted by the trading licensees includes bilateral transactions (inter-state & intra-state) and the transactions undertaken through power exchanges.</i>			
<i>Note 2: Volume of electricity transacted by Global Energy Ltd is not included.</i>			
<i>Source: Information submitted by trading licensees</i>			

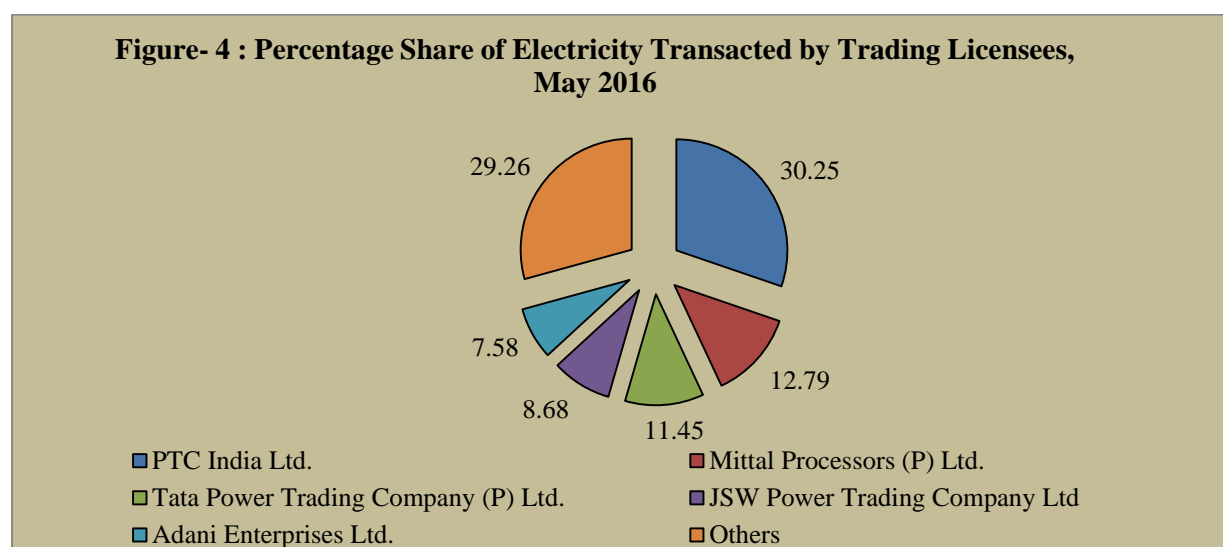


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, MAY 2016		
Sr.No	Item	Sale Price of Traders (₹/kWh)
1	Minimum	2.52
2	Maximum	6.54
3	Weighted Average	3.64

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), MAY 2016		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	3.70
2	PEAK	3.40
3	OFF PEAK	3.08

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, MAY 2016			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	0.09	2.18
2	Maximum	6.50	3.00
3	Weighted Average	2.45	2.61

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, MAY 2016			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	14.12	3.27
2	Day Ahead Contingency Contracts	9.98	3.26
3	Daily Contracts	0.50	3.83
4	Weekly Contracts	31.36	4.43
	Total	55.97	3.92

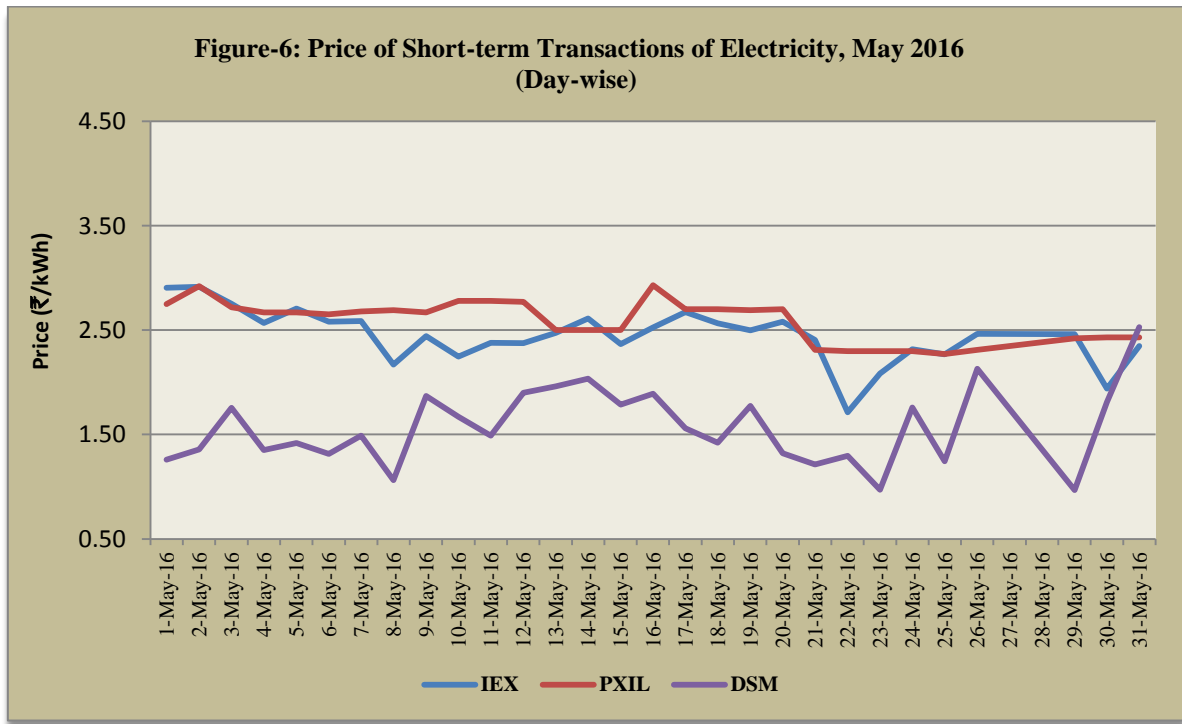
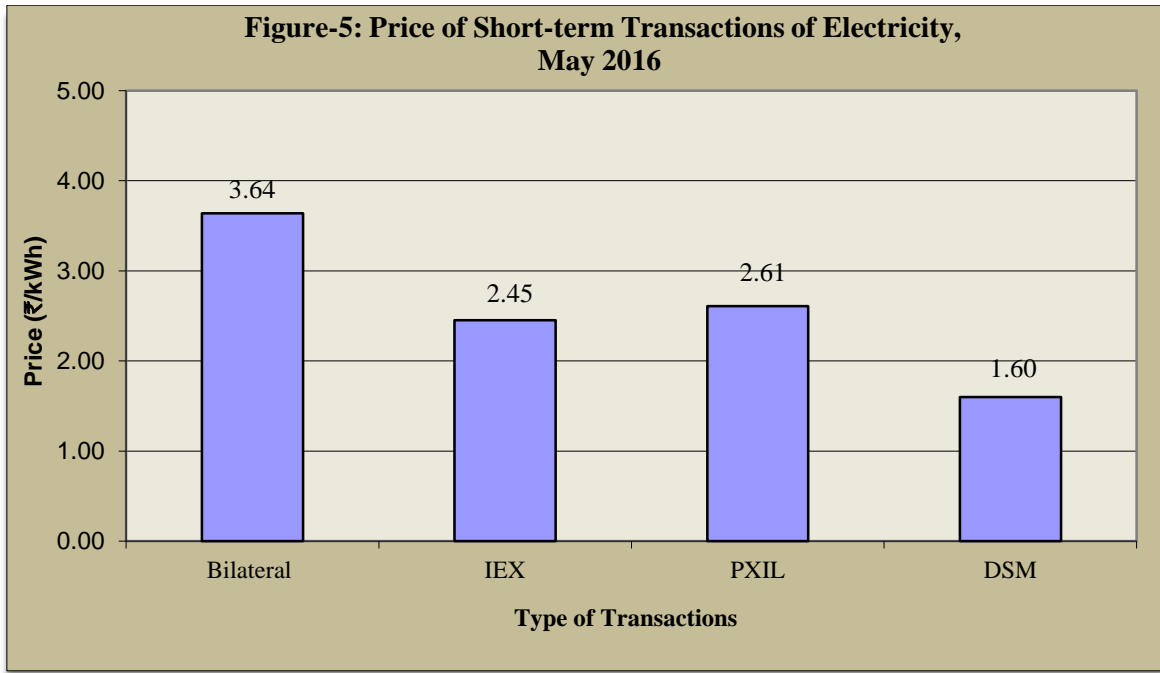
Source: IEX

Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, MAY 2016			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	55.49	2.94
2	Daily Contracts	6.88	2.94
	Total	62.36	2.94

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH DSM, MAY 2016		
Sr.No	Item	Price in All India Grid (₹/kWh)
1	Minimum	0.00
2	Maximum	6.16
3	Average	1.60

Source: NLDC



**Table-9: VOLUME OF ELECTRICITY SOLD THROUGH BILATERAL,
MAY 2016**

Name of the State/UT/Other Regional Entity	Volume of Sale (MUs)	% of Volume
THERMAL POWERTECH	437.84	9.78
RAJASTHAN	412.10	9.20
J & K	402.47	8.99
DB POWER	336.04	7.50
HIMACHAL PRADESH	316.32	7.06
GMR KAMALANGA	307.08	6.86
GUJARAT	289.96	6.48
JITPL	263.52	5.89
JINDAL POWER	183.90	4.11
KORBA WEST POWER	156.66	3.50
IL & FS	155.67	3.48
SHREE CEMENT	154.90	3.46
ADHUNIK POWER LTD	144.24	3.22
PUNJAB	136.76	3.05
HARYANA	120.57	2.69
COASTGEN	94.96	2.12
GMR CHHATTISGARH	89.62	2.00
DVC	74.75	1.67
SIMHAPURI	66.01	1.47
KARCHAM WANGTOO	59.02	1.32
ODISHA	34.96	0.78
MEENAKSHI	31.05	0.69
JINDAL STAGE-II	26.50	0.59
ANDHRA PRADESH	23.37	0.52
NSPCL	20.59	0.46
MP	20.50	0.46
MEGHALAYA	19.49	0.44
WEST BENGAL	18.53	0.41
DAGACHU	13.35	0.30
MANIPUR	13.24	0.30
TELANGANA	11.65	0.26
ACBIL	9.09	0.20
DELHI	5.16	0.12
UTTAR PRADESH	4.68	0.10
ESSAR POWER	4.51	0.10
LANKO_AMK	4.37	0.10
ASSAM	4.35	0.10
AD HYDRO	3.59	0.08
DCPP	2.38	0.05
LANKO KONDAPALLI	2.10	0.05
TRIPURA	0.96	0.02
STERLITE	0.75	0.02
Total	4477.55	100.00
Volume Sold by top 5 Regional Entities	1904.76	42.54

**Table-10: VOLUME OF ELECTRICITY PURCHASED THROUGH BILATERAL,
MAY 2016**

Name of the State/UT/Other Regional Entity	Volume of Purchase (MUs)	% of Volume
UTTAR PRADESH	825.44	17.43
MAHARASHTRA	701.91	14.82
WEST BENGAL	624.42	13.18
TELANGANA	624.32	13.18
DELHI	350.53	7.40
HARYANA	274.00	5.78
BIHAR	179.61	3.79
JHARKHAND	116.30	2.46
PUNJAB	114.94	2.43
CHHATTISGARH	112.97	2.38
UTTARAKHAND	105.91	2.24
ODISHA	102.13	2.16
TAMIL NADU	94.33	1.99
DADRA & NAGAR HAVELI	88.39	1.87
ANDHRA PRADESH	83.15	1.76
ASSAM	56.29	1.19
KARNATAKA	55.97	1.18
NEPAL(NVVN)	55.41	1.17
GUJARAT	35.71	0.75
KERALA	34.28	0.72
ESSAR STEEL	28.91	0.61
GOA	21.08	0.45
HIMACHAL PRADESH	17.40	0.37
CHANDIGARH	11.16	0.24
MP	11.16	0.24
MEGHALAYA	10.63	0.22
MANIPUR	0.59	0.01
TOTAL	4736.94	100.00
Volume Purchased by top 5 Regional Entities	3126.62	66.01

Table-11: VOLUME OF ELECTRICITY SOLD THROUGH POWER EXCHANGES, MAY 2016		
Name of the State/UT/Other Regional Entity	Volume of Sale (MUs)	% of Volume
HIMACHAL PRADESH	346.33	10.38
JITPL	345.33	10.35
KARCHAM WANGTOO	242.24	7.26
JINDAL POWER	182.32	5.47
MP	164.66	4.94
KORBA WEST POWER	114.91	3.44
JAYPEE NIGRIE	112.54	3.37
GUJARAT	110.02	3.30
DELHI	104.16	3.12
DB POWER	99.19	2.97
BALCO	89.53	2.68
DCPP	83.03	2.49
CHHATTISGARH	74.47	2.23
AD HYDRO	73.61	2.21
HARYANA	68.55	2.05
MEENAKSHI	66.55	1.99
SIMHAPURI	66.07	1.98
RAJASTHAN	62.14	1.86
NHPC STATIONS	61.45	1.84
TELANGANA	59.99	1.80
ASSAM	55.43	1.66
IL & FS	52.29	1.57
GMR CHHATTISGARH	46.72	1.40
ACBIL	42.77	1.28
DHARIWAL POWER	40.55	1.22
CHUZACHEN HEP	40.10	1.20
TRIPURA	37.91	1.14
SIKKIM	35.78	1.07
JHABUA POWER_MP	33.87	1.02
NEEPCO STATIONS	32.25	0.97
JINDAL STAGE-II	32.13	0.96
ODISHA	31.00	0.93
J & K	30.96	0.93
SHREE CEMENT	30.90	0.93
SPECTRUM	28.37	0.85
THERMAL POWERTECH	27.24	0.82
MANIPUR	26.82	0.80
NJPC	20.54	0.62
JORETHANG	18.38	0.55
MIZORAM	16.87	0.51
MB POWER	15.81	0.47
MEGHALAYA	15.80	0.47
DVC	15.37	0.46
WEST BENGAL	14.56	0.44
COASTGEN	13.09	0.39
MAHARASHTRA	9.96	0.30
ANDHRA PRADESH	8.28	0.25

GMR KAMALANGA	7.55	0.23
STERLITE	6.19	0.19
PUNJAB	5.00	0.15
LANCO BUDHIL	3.97	0.12
KERALA	3.81	0.11
MALANA	3.79	0.11
GOA	1.78	0.05
UTTAR PRADESH	1.60	0.05
MAITHON POWER LTD	1.44	0.04
NAGALAND	0.07	0.00
CHANDIGARH	0.03	0.00
Total	3336.03	100.00
Volume sold by top 5 Regional Entities	1280.88	38.40

**Table-12: VOLUME OF ELECTRICITY PURCHASED THROUGH POWER EXCHANGES,
MAY 2016**

Name of the State/UT/Other Regional Entity	Volume of Purchase (MUs)	% of Volume
GUJARAT	433.55	13.80
RAJASTHAN	378.20	12.04
ESSAR STEEL	309.66	9.85
HARYANA	225.45	7.17
PUNJAB	220.78	7.03
BIHAR	207.46	6.60
TELANGANA	206.67	6.58
KARNATAKA	180.90	5.76
UTTARAKHAND	139.73	4.45
ANDHRA PRADESH	129.92	4.13
WEST BENGAL	122.81	3.91
MAHARASHTRA	106.56	3.39
KERALA	87.10	2.77
DELHI	76.38	2.43
MP	58.50	1.86
DADRA & NAGAR HAVELI	42.51	1.35
DAMAN AND DIU	38.27	1.22
ASSAM	36.98	1.18
TAMIL NADU	23.22	0.74
UTTAR PRADESH	20.96	0.67
CHHATTISGARH	16.50	0.52
ODISHA	15.27	0.49
HIMACHAL PRADESH	12.45	0.40
GOA	12.08	0.38
JHARKHAND	11.32	0.36
J & K	10.63	0.34
CHANDIGARH	8.96	0.29
MEGHALAYA	5.53	0.18
NAGALAND	3.59	0.11
ARUNACHAL PRADESH	0.18	0.01
TRIPURA	0.06	0.00
TOTAL	3142.18	100.00
Volume purchased by top 5 Regional Entities	1567.64	49.89

Table-13: VOLUME OF ELECTRICITY UNDER DRAWAL (EXPORTED) THROUGH DSM, MAY 2016

Name of the State/UT/Other Regional Entity	Volume of Under drawal (MUs)	% of Volume
MAHARASHTRA	131.03	6.98
UTTAR PRADESH	110.26	5.87
NTPC STATIONS-WR	108.11	5.76
MP	102.59	5.46
PUNJAB	101.68	5.42
GUJARAT	97.54	5.20
HARYANA	89.00	4.74
TAMIL NADU	83.05	4.42
BIHAR	74.69	3.98
RAJASTHAN	71.96	3.83
NHPC STATIONS	59.12	3.15
TELANGANA	59.12	3.15
KARNATAKA	58.38	3.11
ANDHRA PRADESH	48.63	2.59
CHHATTISGARH	47.78	2.55
UTTARAKHAND	45.97	2.45
DELHI	39.35	2.10
NTPC STATIONS-NR	36.37	1.94
WEST BENGAL	32.61	1.74
NEEPCO STATIONS	29.73	1.58
HIMACHAL PRADESH	28.01	1.49
JHARKHAND	27.06	1.44
ASSAM	26.00	1.38
ESSAR STEEL	23.20	1.24
NTPC STATIONS-ER	19.57	1.04
DVC	18.51	0.99
ODISHA	18.06	0.96
NTPC STATIONS-SR	14.05	0.75
CGPL	13.79	0.73
TRIPURA	13.69	0.73
MEGHALAYA	13.15	0.70
PONDICHERRY	12.49	0.67
JITPL	10.91	0.58
NJPC	10.89	0.58
JINDAL POWER	10.48	0.56
DADRA & NAGAR HAVELI	9.92	0.53
TEESTA HEP	9.91	0.53
MAITHON POWER LTD	8.05	0.43
SIKKIM	7.88	0.42
GOA	7.05	0.38
ARUNACHAL PRADESH	6.95	0.37
MANIPUR	6.87	0.37
NSPCL	6.78	0.36
KARCHAM WANGTOO	6.71	0.36
JAYPEE NIGRIE	6.53	0.35
GMR KAMALANGA	6.46	0.34

THERMAL POWERTECH	5.73	0.31
AD HYDRO	5.70	0.30
DCPP	5.61	0.30
NAGALAND	5.48	0.29
IL & FS	5.40	0.29
CHUZACHEN HEP	5.24	0.28
JORETHANG	4.80	0.26
KSK MAHANADI	4.34	0.23
ADHUNIK POWER LTD	4.27	0.23
LANKO_AMK	4.16	0.22
URI-2	3.83	0.20
RGPPPL(DABHOL)	3.53	0.19
NEPAL(NVVN)	3.49	0.19
SIMHAPURI	3.47	0.19
DB POWER	3.42	0.18
COASTGEN	3.38	0.18
MIZORAM	3.20	0.17
BALCO	3.17	0.17
KORBA WEST POWER	2.74	0.15
MB POWER	2.41	0.13
CHANDIGARH	2.28	0.12
RANGIT HEP	2.17	0.12
GMR CHHATTISGARH	1.84	0.10
DAMAN AND DIU	1.76	0.09
SHREE CEMENT	1.58	0.08
EMCO	1.49	0.08
MEENAKSHI	1.34	0.07
LANCO BUDHIL	1.06	0.06
STERLITE	0.98	0.05
ACBIL	0.97	0.05
DAGACHU	0.95	0.05
DHARIWAL POWER	0.91	0.05
LOKTAK	0.36	0.02
MALANA	0.25	0.01
ADANI HVDC	0.11	0.01
VANDANA VIDYUT	0.03	0.00
ESSAR POWER	0.02	0.00
Total	1877.26	100.00
Volume Exported by top 5 Regional Entities	553.66	29.49

Table-14: VOLUME OF ELECTRICITY OVER DRAWAL (IMPORTED) THROUGH DSM, MAY 2016		
Name of the State/UT/Other Regional Entity	Volume of Over drawal (MUs)	% of Volume
UTTAR PRADESH	133.24	7.44
NTPC STATIONS-ER	89.94	5.02
NTPC STATIONS-NR	89.39	4.99
NTPC STATIONS-WR	70.75	3.95
TAMIL NADU	69.08	3.86
HARYANA	63.43	3.54
KERALA	63.05	3.52
KARNATAKA	61.47	3.43
ANDHRA PRADESH	57.38	3.20
WEST BENGAL	54.61	3.05
RAJASTHAN	54.27	3.03
MAHARASHTRA	52.82	2.95
CHHATTISGARH	52.36	2.92
ODISHA	50.30	2.81
BIHAR	48.46	2.71
DVC	46.56	2.60
GOA	45.01	2.51
HIMACHAL PRADESH	44.45	2.48
NTPC STATIONS-SR	44.33	2.48
GUJARAT	42.02	2.35
JHARKHAND	39.31	2.20
TELANGANA	35.17	1.96
ASSAM	33.00	1.84
MP	32.42	1.81
DELHI	31.12	1.74
BALCO	30.42	1.70
CHANDIGARH	23.44	1.31
PUNJAB	22.78	1.27
ESSAR STEEL	21.96	1.23
UTTARAKHAND	21.31	1.19
JITPL	20.61	1.15
CGPL	12.00	0.67
DAMAN AND DIU	11.26	0.63
GMR KAMALANGA	11.08	0.62
TRIPURA	10.98	0.61
NHPC STATIONS	10.37	0.58
MB POWER	10.17	0.57
STERLITE	10.08	0.56
IL & FS	9.73	0.54
JAYPEE NIGRIE	9.59	0.54
KARCHAM WANGTOO	9.05	0.51
ARUNACHAL PRADESH	8.81	0.49
KORBA WEST POWER	8.50	0.47
MAITHON POWER LTD	8.00	0.45

AD HYDRO	6.22	0.35
GMR CHHATTISGARH	5.76	0.32
SHREE CEMENT	5.75	0.32
MANIPUR	5.11	0.29
LANCO BUDHIL	4.67	0.26
JINDAL POWER	4.53	0.25
MIZORAM	4.23	0.24
THERMAL POWERTECH	4.16	0.23
DB POWER	4.12	0.23
SIKKIM	3.93	0.22
ESSAR POWER	3.89	0.22
NSPCL	3.87	0.22
COASTGEN	3.86	0.22
NEEPCO STATIONS	3.84	0.21
NAGALAND	3.77	0.21
ACBIL	3.65	0.20
ADHUNIK POWER LTD	3.16	0.18
MEENAKSHI	3.14	0.18
MEGHALAYA	3.09	0.17
RGPPPL(DABHOL)	2.94	0.16
DCPP	2.55	0.14
DGEN MEGA POWER	2.50	0.14
DADRA & NAGAR HAVELI	2.31	0.13
NEPAL(NVVN)	2.23	0.12
PONDICHERRY	1.99	0.11
JORETHANG	1.85	0.10
EMCO	1.83	0.10
DAGACHU	1.79	0.10
CHUZACHEN HEP	1.72	0.10
LANKO KONDAPALLI	1.72	0.10
RANGIT HEP	1.14	0.06
KSK MAHANADI	1.00	0.06
TEESTA HEP	0.47	0.03
MALANA	0.39	0.02
SIMHAPURI	0.38	0.02
LOKTAK	0.37	0.02
DHARIWAL POWER	0.34	0.02
URI-2	0.23	0.01
SPECTRUM	0.23	0.01
LANKO_AMK	0.08	0.00
ADANI HVDC	0.06	0.00
TOTAL	1790.78	100.00
Volume Imported by top 5 Regional Entities	452.40	25.26

**Table-15: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY
(REGIONAL ENTITY-WISE), MAY 2016**

Sr.No.	Name of the State/UT/Other Regional Entity	Total volume of net short-term transactions of electricity*
1	UTTAR PRADESH	863.11
2	WEST BENGAL	736.14
3	TELANGANA	735.41
4	MAHARASHTRA	720.30
5	BIHAR	360.83
6	ESSAR STEEL	337.33
7	DELHI	309.36
8	HARYANA	284.77
9	KARNATAKA	239.95
10	UTTARAKHAND	220.98
11	ANDHRA PRADESH	190.17
12	KERALA	174.78
13	JHARKHAND	139.87
14	DADRA & NAGAR HAVELI	123.29
15	PUNJAB	115.07
16	TAMIL NADU	103.58
17	ODISHA	83.68
18	NTPC STATIONS-ER	70.38
19	GOA	69.34
20	CHHATTISGARH	59.58
21	NEPAL(NVVN)	54.15
22	NTPC STATIONS-NR	53.02
23	DAMAN AND DIU	47.76
24	CHANDIGARH	41.25
25	ASSAM	40.49
26	NTPC STATIONS-SR	30.28
27	GUJARAT	13.76
28	DGEN MEGA POWER	2.50
29	STERLITE	2.16
30	ARUNACHAL PRADESH	2.05
31	NAGALAND	1.80
32	EMCO	0.34
33	LOKTAK	0.01
34	VANDANA VIDYUT	-0.03
35	ADANI HVDC	-0.05
36	LANCO BUDHIL	-0.36
37	LANCO KONDAPALLI	-0.38
38	RGPPL(DABHOL)	-0.60
39	ESSAR POWER	-0.64
40	RANGIT HEP	-1.03
41	MAITHON POWER LTD	-1.49
42	CGPL	-1.80
43	KSK MAHANADI	-3.35
44	URI-2	-3.60
45	MALANA	-3.65
46	MB POWER	-8.05
47	LANKO_AMK	-8.44

49	PONDICHERRY	-10.50
50	DAGACHU	-12.51
51	MIZORAM	-15.84
52	JORETHANG	-21.33
53	NSPCL	-23.49
54	NJPC	-23.58
55	SPECTRUM	-28.14
56	MEGHALAYA	-29.18
57	JHABUA POWER_MP	-33.87
58	NTPC STATIONS-WR	-37.36
59	SIKKIM	-39.73
60	DHARIWAL POWER	-41.11
61	MANIPUR	-41.23
62	TRIPURA	-41.53
63	CHUZACHEN HEP	-43.61
64	ACBIL	-49.19
65	NEEPCO STATIONS	-58.14
66	JINDAL STAGE-II	-58.63
67	DVC	-62.08
68	BALCO	-62.28
69	AD HYDRO	-76.68
70	DCPP	-88.48
71	MEENAKSHI	-95.80
72	COASTGEN	-107.57
73	JAYPEE NIGRIE	-109.47
74	NHPC STATIONS	-110.20
75	RAJASTHAN	-113.72
76	GMR CHHATTISGARH	-132.42
77	SIMHAPURI	-135.18
78	ADHUNIK POWER LTD	-145.36
79	SHREE CEMENT	-181.62
80	MP	-185.67
81	IL & FS	-203.63
82	KORBA WEST POWER	-265.81
83	KARCHAM WANGTOO	-298.92
84	GMR KAMALANGA	-310.01
85	JINDAL POWER	-372.17
86	J & K	-422.79
87	DB POWER	-434.51
88	THERMAL POWERTECH	-466.65
89	JITPL	-599.16
90	HIMACHAL PRADESH	-616.35
* 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, MAY 2016			
	Details of Congestion	IEX	PXIL
A	Unconstrained Cleared Volume* (MUs)	3082.53	40.09
B	Actual Cleared Volume and hence scheduled (MUs)	2928.71	19.66
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	153.82	20.43
D	Volume of electricity that could not be cleared as % to Unconstrained Cleared Volume	4.99%	50.95%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	84.24%	20.00%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	22.78%	25.00%
	6.00 - 12.00 hours	23.57%	25.00%
	12.00 - 18.00 hours	27.80%	25.00%
	18.00 - 24.00 hours	25.85%	25.00%
* This power would have been scheduled had there been no congestion.			
Source: IEX & PXIL & NLDC			

Table-17: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA (DAY-WISE) (MUs), MAY 2016

Date	Bilateral		Power Exchange (Area Clearing Volume# of Day Ahead Market)		Deviation Settlement (Over Drawl+Under Generation)	Total Electricity Generation (MU) as given at CEA Website*
	Through Traders and PXs**	Direct	IEX	PXIL		
1-May-16	90.20	56.91	93.30	0.47	71.03	3193.07
2-May-16	115.27	53.86	86.42	0.77	66.31	3352.73
3-May-16	118.71	51.11	90.57	1.05	61.94	3380.23
4-May-16	99.25	49.01	91.12	3.69	67.51	3300.28
5-May-16	102.21	54.70	76.91	0.06	62.86	3278.34
6-May-16	80.81	52.92	85.66	0.03	62.95	3253.12
7-May-16	83.72	55.09	84.21	1.01	56.22	3315.15
8-May-16	77.88	46.02	83.82	0.97	63.35	3205.28
9-May-16	92.29	50.94	97.03	1.38	58.45	3346.10
10-May-16	97.66	53.07	95.55	0.75	67.71	3332.58
11-May-16	107.56	55.86	98.89	0.38	66.28	3332.58
12-May-16	102.50	52.92	95.80	0.72	56.62	3388.97
13-May-16	112.32	48.88	96.71	1.00	53.66	3366.90
14-May-16	107.71	37.91	107.17	0.83	58.36	3347.08
15-May-16	98.30	39.72	92.54	0.67	59.24	3310.11
16-May-16	130.90	34.52	105.27	0.13	63.14	3329.67
17-May-16	128.02	44.64	113.39	0.52	61.08	3347.57
18-May-16	126.68	43.60	100.09	0.69	66.10	3319.80
19-May-16	120.60	53.98	98.82	0.47	64.42	3297.90
20-May-16	119.68	58.50	98.56	0.13	71.36	3182.90
21-May-16	114.40	59.62	94.20	0.58	71.43	3092.65
22-May-16	103.87	58.34	81.41	0.50	68.06	3074.96
23-May-16	114.70	62.86	92.94	0.57	87.44	3017.77
24-May-16	122.16	64.69	95.48	0.57	82.48	2966.61
25-May-16	115.78	59.74	99.23	0.58	72.63	3004.18
26-May-16	116.68	55.79	96.62	0.56	64.01	3115.03
27-May-16	107.68	61.87	100.64	0.13	62.67	3223.92
28-May-16	92.35	60.83	87.65	0.10	71.52	3178.23
29-May-16	92.06	52.85	83.45	0.09	85.39	2858.45
30-May-16	97.12	56.02	91.14	0.15	67.50	2978.69
31-May-16	98.75	57.27	102.12	0.15	63.40	3142.82
Total	3287.82	1644.04	2916.71	19.66	2055.13	99833.67

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 (DAY-WISE)(₹/kWh), MAY 2016

Market Segment	Day ahead market of IEX			Day ahead market of PXIL			Under Drawl/Over Drawl from the Grid (DSM)		
	Date	Minimum ACP	Maximum ACP	Weighted Average Price*	Minimum ACP	Maximum ACP	Weighted Average Price*	All India Grid	
							Mini-mum Price	Maximum Price	Average Price**
1-May-16	1.05	6.20	2.91	2.75	2.75	2.75	0.00	3.45	1.26
2-May-16	1.60	6.20	2.92	2.90	3.00	2.92	0.00	3.45	1.36
3-May-16	1.80	4.98	2.75	2.72	2.74	2.72	0.00	5.95	1.75
4-May-16	0.80	5.82	2.57	2.67	2.67	2.67	0.00	3.24	1.35
5-May-16	0.80	6.50	2.71	2.67	2.67	2.67	0.00	3.45	1.42
6-May-16	0.19	5.95	2.58	2.65	2.65	2.65	0.00	3.24	1.31
7-May-16	0.10	4.01	2.59	2.60	2.81	2.68	0.00	3.45	1.49
8-May-16	0.10	3.75	2.17	2.60	2.81	2.69	0.00	2.82	1.06
9-May-16	0.60	3.68	2.44	2.60	2.75	2.67	0.00	5.74	1.87
10-May-16	0.09	3.60	2.25	2.58	3.00	2.78	0.00	5.11	1.67
11-May-16	1.25	3.70	2.38	2.59	3.00	2.78	0.00	3.45	1.49
12-May-16	1.73	3.40	2.38	2.56	3.00	2.77	0.00	5.11	1.90
13-May-16	2.04	3.40	2.47	2.50	2.50	2.50	0.00	4.91	1.96
14-May-16	2.11	3.50	2.61	2.50	2.51	2.50	0.00	5.32	2.03
15-May-16	1.64	3.60	2.37	2.50	2.50	2.50	0.00	5.95	1.79
16-May-16	1.25	4.01	2.53	2.70	3.00	2.93	0.00	3.45	1.89
17-May-16	2.00	6.00	2.67	2.70	2.70	2.70	0.00	3.03	1.56
18-May-16	1.40	3.59	2.56	2.70	2.70	2.70	0.00	3.45	1.42
19-May-16	1.26	3.74	2.50	2.69	2.69	2.69	0.00	5.32	1.77
20-May-16	1.00	3.80	2.58	2.70	2.70	2.70	0.00	3.45	1.32
21-May-16	0.28	3.93	2.41	2.26	2.68	2.31	0.00	3.24	1.21
22-May-16	0.24	3.15	1.71	2.26	2.51	2.30	0.00	3.45	1.30
23-May-16	0.50	4.25	2.08	2.26	2.51	2.30	0.00	3.03	0.97
24-May-16	0.75	3.52	2.32	2.26	2.51	2.30	0.00	5.95	1.76
25-May-16	1.00	4.01	2.27	2.22	2.49	2.27	0.00	3.45	1.25
26-May-16	0.60	5.00	2.46	2.26	2.51	2.31	0.36	6.16	2.13
27-May-16	0.24	5.43	2.43	2.30	2.51	2.38	0.00	5.74	2.35
28-May-16	0.50	5.43	2.61	2.30	2.51	2.45	0.00	3.45	1.58
29-May-16	0.60	4.70	2.46	2.18	2.51	2.42	0.00	3.45	0.97
30-May-16	0.24	3.00	1.94	2.22	2.51	2.43	0.00	4.91	1.81
31-May-16	0.70	5.32	2.35	2.23	2.51	2.43	0.00	6.16	2.53
	0.09#	6.50#	2.45	2.18#	3.00#	2.61	0#	6.16#	1.60**

Source: Data on price of PX transactions from IEX and PXIL and data on DSM 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 DSM of 96 time blocks of 15 minutes each in a day. DSM price includes Ceiling DSM Rate +40% additional DSM charge.

Maximum/Minimum in the month

Table-19: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY*-WISE) (MUs), MAY 2016

Name of the State/UT/Other Regional Entity	Through Bilateral			Through Power Exchange			Through DSM with Regional Grid			Total Net***
	Sale	Pur- chase	Net**	Sale	Pur- chase	Net**	Import (Over Drawl)	Export (Under Drawl)	Net**	
PUNJAB	136.76	114.94	-21.82	5.00	220.78	215.78	22.78	101.68	-78.89	115.07
HARYANA	120.57	274.00	153.44	68.55	225.45	156.90	63.43	89.00	-25.57	284.77
RAJASTHAN	412.10	0.00	-412.10	62.14	378.20	316.07	54.27	71.96	-17.69	-113.72
DELHI	5.16	350.53	345.37	104.16	76.38	-27.78	31.12	39.35	-8.23	309.36
UTTAR PRADESH	4.68	825.44	820.76	1.60	20.96	19.36	133.24	110.26	22.98	863.11
UTTARAKHAND	0.00	105.91	105.91	0.00	139.73	139.73	21.31	45.97	-24.66	220.98
HIMACHAL PRADESH	316.32	17.40	-298.92	346.33	12.45	-333.88	44.45	28.01	16.44	-616.35
J & K	402.47	0.00	-402.47	30.96	10.63	-20.32	0.00	0.00	0.00	-422.79
CHANDIGARH	0.00	11.16	11.16	0.03	8.96	8.94	23.44	2.28	21.16	41.25
MP	20.50	11.16	-9.34	164.66	58.50	-106.16	32.42	102.59	-70.17	-185.67
MAHARASHTRA	0.00	701.91	701.91	9.96	106.56	96.60	52.82	131.03	-78.21	720.30
GUJARAT	289.96	35.71	-254.25	110.02	433.55	323.53	42.02	97.54	-55.52	13.76
CHHATTISGARH	0.00	112.97	112.97	74.47	16.50	-57.97	52.36	47.78	4.58	59.58
DAMAN AND DIU	0.00	0.00	0.00	0.00	38.27	38.27	11.26	1.76	9.49	47.76
DADRA & NAGAR HAVELI	0.00	88.39	88.39	0.00	42.51	42.51	2.31	9.92	-7.61	123.29
ANDHRA PRADESH	23.37	83.15	59.78	8.28	129.92	121.64	57.38	48.63	8.75	190.17
KARNATAKA	0.00	55.97	55.97	0.00	180.90	180.90	61.47	58.38	3.08	239.95
KERALA	0.00	34.28	34.28	3.81	87.10	83.29	63.05	5.84	57.22	174.78
TAMIL NADU	0.00	94.33	94.33	0.00	23.22	23.22	69.08	83.05	-13.97	103.58
PONDICHERRY	0.00	0.00	0.00	0.00	0.00	0.00	1.99	12.49	-10.50	-10.50
GOA	0.00	21.08	21.08	1.78	12.08	10.30	45.01	7.05	37.96	69.34
TELANGANA	11.65	624.32	612.67	59.99	206.67	146.69	35.17	59.12	-23.95	735.41
WEST BENGAL	18.53	624.42	605.88	14.56	122.81	108.25	54.61	32.61	22.01	736.14
ODISHA	34.96	102.13	67.17	31.00	15.27	-15.73	50.30	18.06	32.24	83.68
BIHAR	0.00	179.61	179.61	0.00	207.46	207.46	48.46	74.69	-26.23	360.83
JHARKHAND	0.00	116.30	116.30	0.00	11.32	11.32	39.31	27.06	12.25	139.87
SIKKIM	0.00	0.00	0.00	35.78	0.00	-35.78	3.93	7.88	-3.94	-39.73
DVC	74.75	0.00	-74.75	15.37	0.00	-15.37	46.56	18.51	28.05	-62.08
ARUNACHAL PRADESH	0.00	0.00	0.00	0.00	0.18	0.18	8.81	6.95	1.87	2.05
ASSAM	4.35	56.29	51.94	55.43	36.98	-18.45	33.00	26.00	7.00	40.49
MANIPUR	13.24	0.59	-12.65	26.82	0.00	-26.82	5.11	6.87	-1.76	-41.23
MEGHALAYA	19.49	10.63	-8.86	15.80	5.53	-10.27	3.09	13.15	-10.05	-29.18
MIZORAM	0.00	0.00	0.00	16.87	0.00	-16.87	4.23	3.20	1.04	-15.84
NAGALAND	0.00	0.00	0.00	0.07	3.59	3.51	3.77	5.48	-1.71	1.80
TRIPURA	0.96	0.00	-0.96	37.91	0.06	-37.85	10.98	13.69	-2.71	-41.53
NTPC STATIONS-NR	0.00	0.00	0.00	0.00	0.00	0.00	89.39	36.37	53.02	53.02
NHPC STATIONS	0.00	0.00	0.00	61.45	0.00	-61.45	10.37	59.12	-48.75	-110.20
NJPC	0.00	0.00	0.00	20.54	0.00	-20.54	7.85	10.89	-3.04	-23.58

AD HYDRO	3.59	0.00	-3.59	73.61	0.00	-73.61	6.22	5.70	0.52	-76.68
KARCHAM WANGTOO	59.02	0.00	-59.02	242.24	0.00	-242.24	9.05	6.71	2.34	-298.92
SHREE CEMENT	154.90	0.00	-154.90	30.90	0.00	-30.90	5.75	1.58	4.18	-181.62
LANCO BUDHIL	0.00	0.00	0.00	3.97	0.00	-3.97	4.67	1.06	3.61	-0.36
ADANI HVDC	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.11	-0.05	-0.05
MALANA	0.00	0.00	0.00	3.79	0.00	-3.79	0.39	0.25	0.14	-3.65
URI-2	0.00	0.00	0.00	0.00	0.00	0.00	0.23	3.83	-3.60	-3.60
NTPC STATIONS-WR	0.00	0.00	0.00	0.00	0.00	0.00	70.75	108.11	-37.36	-37.36
JINDAL POWER	183.90	0.00	-183.90	182.32	0.00	-182.32	4.53	10.48	-5.95	-372.17
LANKO_AMK	4.37	0.00	-4.37	0.00	0.00	0.00	0.08	4.16	-4.08	-8.44
NSPCL	20.59	0.00	-20.59	0.00	0.00	0.00	3.87	6.78	-2.90	-23.49
ACBIL	9.09	0.00	-9.09	42.77	0.00	-42.77	3.65	0.97	2.67	-49.19
BALCO	0.00	0.00	0.00	89.53	0.00	-89.53	30.42	3.17	27.26	-62.28
RGPPL(DABHOL)	0.00	0.00	0.00	0.00	0.00	0.00	2.94	3.53	-0.60	-0.60
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	12.00	13.79	-1.80	-1.80
DCPP	2.38	0.00	-2.38	83.03	0.00	-83.03	2.55	5.61	-3.07	-88.48
EMCO	0.00	0.00	0.00	0.00	0.00	0.00	1.83	1.49	0.34	0.34
VANDANA VIDYUT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	-0.03	-0.03
ESSAR STEEL	0.00	28.91	28.91	0.00	309.66	309.66	21.96	23.20	-1.24	337.33
KSK MAHANADI	0.00	0.00	0.00	0.00	0.00	0.00	1.00	4.34	-3.35	-3.35
ESSAR POWER	4.51	0.00	-4.51	0.00	0.00	0.00	3.89	0.02	3.87	-0.64
JINDAL STAGE-II	26.50	0.00	-26.50	32.13	0.00	-32.13	0.00	0.00	0.00	-58.63
DB POWER	336.04	0.00	-336.04	99.19	0.00	-99.19	4.12	3.42	0.71	-434.51
DHARIWAL POWER	0.00	0.00	0.00	40.55	0.00	-40.55	0.34	0.91	-0.56	-41.11
JAYPEE NIGRIE	0.00	0.00	0.00	112.54	0.00	-112.54	9.59	6.53	3.07	-109.47
DGEN MEGA POWER	0.00	0.00	0.00	0.00	0.00	0.00	2.50	0.00	2.50	2.50
GMR CHHATTISGARH	89.62	0.00	-89.62	46.72	0.00	-46.72	5.76	1.84	3.92	-132.42
KORBA WEST POWER	156.66	0.00	-156.66	114.91	0.00	-114.91	8.50	2.74	5.76	-265.81
MB POWER	0.00	0.00	0.00	15.81	0.00	-15.81	10.17	2.41	7.76	-8.05
SPECTRUM	0.00	0.00	0.00	28.37	0.00	-28.37	0.23	0.00	0.23	-28.14
JHABUA POWER_MP	0.00	0.00	0.00	33.87	0.00	-33.87	0.00	0.00	0.00	-33.87
NTPC STATIONS-SR	0.00	0.00	0.00	0.00	0.00	0.00	44.33	14.05	30.28	30.28
LANKO KONDAPALLI	2.10	0.00	-2.10	0.00	0.00	0.00	1.72	0.00	1.72	-0.38
SIMHAPURI	66.01	0.00	-66.01	66.07	0.00	-66.07	0.38	3.47	-3.09	-135.18
MEENAKSHI	31.05	0.00	-31.05	66.55	0.00	-66.55	3.14	1.34	1.80	-95.80
COASTGEN	94.96	0.00	-94.96	13.09	0.00	-13.09	3.86	3.38	0.48	-107.57
THERMAL POWERTECH	437.84	0.00	-437.84	27.24	0.00	-27.24	4.16	5.73	-1.57	-466.65
IL & FS	155.67	0.00	-155.67	52.29	0.00	-52.29	9.73	5.40	4.33	-203.63
NTPC STATIONS-ER	0.00	0.00	0.00	0.00	0.00	0.00	89.94	19.57	70.38	70.38
STERLITE	0.75	0.00	-0.75	6.19	0.00	-6.19	10.08	0.98	9.10	2.16
MAITHON POWER LTD	0.00	0.00	0.00	1.44	0.00	-1.44	8.00	8.05	-0.05	-1.49
ADHUNIK POWER LTD	144.24	0.00	-144.24	0.00	0.00	0.00	3.16	4.27	-1.11	-145.36
CHUZACHEN HEP	0.00	0.00	0.00	40.10	0.00	-40.10	1.72	5.24	-3.51	-43.61

RANGIT HEP	0.00	0.00	0.00	0.00	0.00	0.00	1.14	2.17	-1.03	-1.03
GMR KAMALANGA	307.08	0.00	-307.08	7.55	0.00	-7.55	11.08	6.46	4.61	-310.01
JITPL	263.52	0.00	-263.52	345.33	0.00	-345.33	20.61	10.91	9.70	-599.16
TEESTA HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.47	9.91	-9.44	-9.44
DAGACHU	13.35	0.00	-13.35	0.00	0.00	0.00	1.79	0.95	0.83	-12.51
JORETHANG	0.00	0.00	0.00	18.38	0.00	-18.38	1.85	4.80	-2.95	-21.33
NEPAL(NVVN)	0.00	55.41	55.41	0.00	0.00	0.00	2.23	3.49	-1.26	54.15
NEEPCO STATIONS	0.00	0.00	0.00	32.25	0.00	-32.25	3.84	29.73	-25.89	-58.14
LOKTAK	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.36	0.01	0.01
TOTAL	4477.55	4736.94	259.39	3336.0 3	3142.18	-193.85	1790.78	1877.26	-86.47	-20.93

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 DSM

Figure-7: Bilateral Contracts Executed by Traders in June, 2016 (%)

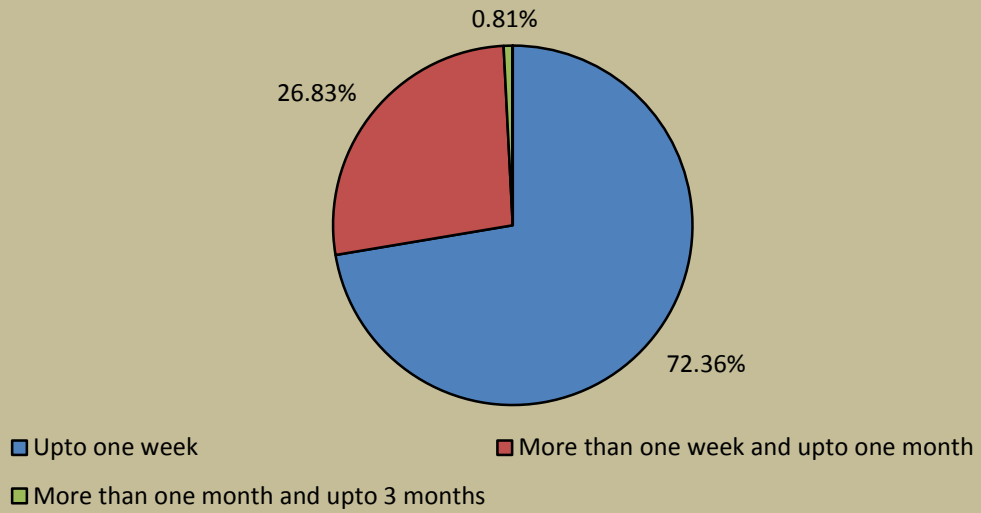


Figure-8: Forward Curve based on Prices of Bilateral Contracts

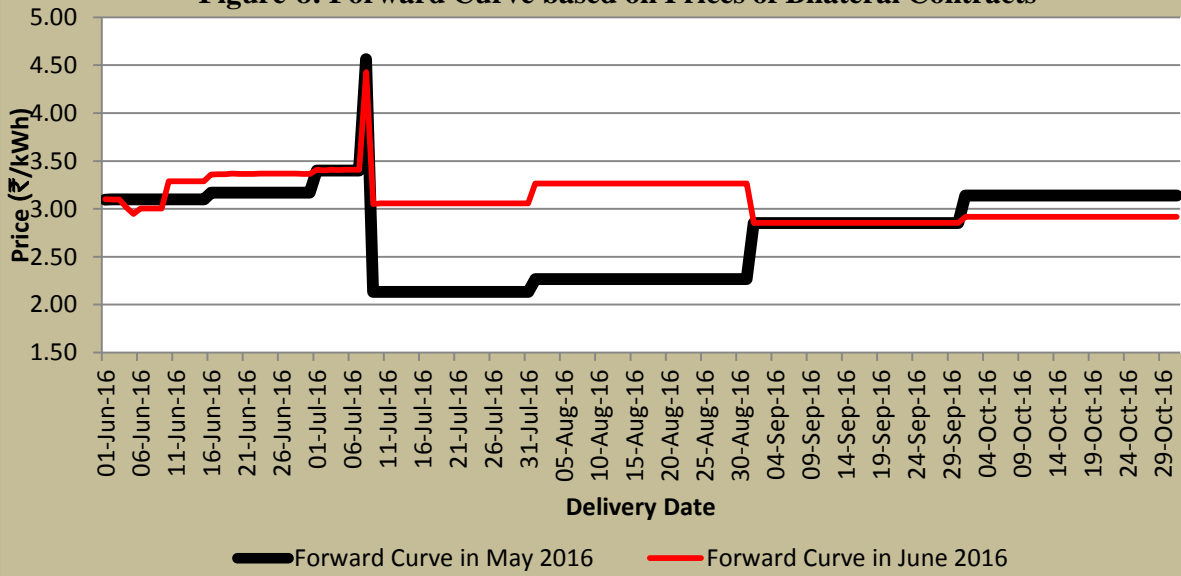


Table-20 : VOLUME AND PRICE OF RENEWABLE ENERGY CERTIFICATES (RECs) TRANSACTIONED THROUGH POWER EXCHANGES, MAY 2016					
Sr.No.	Details of REC Transactions	IEX		PXIL	
		Solar	Non-Solar	Solar	Non Solar
A	Volume of Buy Bid	17113	88923	2970	72935
B	Volume of Sell Bid	2801352	7688639	707321	5253591
C	Ratio of Buy Bid to Sell Bid Volume	0.006	0.012	0.004	0.014
D	Market Clearing Volume (MWh)	17113	88923	2970	72935
E	Market Clearing Price (₹/MWh)	3500	1500	3500	1500

Source: IEX and PXIL

Note 1: 1 REC = 1 MWh

Note 2:

Forbearance and Floor Price w.e.f 1st March 2015		
Type of REC	Floor Price (₹/MWh)	Forbearance Price (₹/MWh)
Solar	3500.00	5800.00
Non-Solar	1500.00	3300.00