

Monthly Report on Short-term Transactions of Electricity in India

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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	NathpaJhakri 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 **January, 2016** are as under:

I: Volume of Short-term Transactions of Electricity

During January 2016, total electricity generation excluding generation from renewable and captive power plants in India was 91671.33MUs (Table-1).

Of the total electricity generation, 9215.24MUs (10.05%) was transacted through short-term, comprising of 4699.94MUs (5.13%) through bilateral (through traders and term-ahead contracts on power exchanges and directly between distribution companies), followed by 2863.63MUs (3.12%) through day ahead collective transactions on power exchanges (IEX and PXIL) and 1651.67MUs (1.80%) through DSM (Table-1 & Figure-2).

Of the total short-term transactions, bilateral constitutes 51% (36.53% through traders and term-ahead contracts on power exchanges and 14.47% directly between distribution companies) followed by 31.07% through day ahead collective transactions on power exchanges and 17.92% 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 43 trading licensees as on January, 2016. In January 2016, 20 trading licensees were engaged in short term trading. Top 5 trading licensees had a share of 78.83% in the total volume traded by all the licensees. These are PTC India Ltd., Mittal Processors (P) Ltd., Manikaran Power Ltd., Tata Power Trading Company (P) Ltd., and JSW Power Trading Company 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 0.1596 for the month of January 2016, which indicates moderate-concentration of market power (Table-2).

The volume of electricity transacted through IEX and PXIL in the day ahead market was 2859.68MUs and 3.95MUs respectively. The volume of total buy bids and sell bids was 3449.38MUs and 5385.96MUs respectively in IEX while the same was 5.29MUs and 58.55MUs 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 12.73MUs and 39.83MUs 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 ₹2.62/kWh, ₹6.54/kWh and ₹4.00/kWh respectively (Table-3). The weighted average sale prices were also computed for the transactions during Round

the Clock (RTC) and Off-Peak periods separately, and the sale prices were ₹4.10/kWh, and ₹3.55/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 ₹0.27/kWh, ₹7.16/kWh and ₹2.48/kWh respectively in IEX and ₹1.98/kWh, ₹4.50/kWh and ₹2.66/kWh respectively in PXIL (Table-5).

The price of electricity transacted through IEX and PXIL in the term-ahead market was ₹2.78/kWh and ₹2.27/kWh respectively (Table-6 and Table-7).

(iii) Price of electricity transacted through DSM: The average deviation settlement price was ₹1.68/kWh for all India grid. The minimum and maximum deviation settlement prices were ₹0.00/kWh and ₹5.95/kWh respectively in the all India grid (Table-8).

The prices of electricity transacted through trading licensees, power exchanges and DSM and their comparison is shown in Table-18 & 19, Figure-5 & 6.

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

Of the total bilateral transactions, top 5 regional entities sold 45.49% of the volume, and these were Haryana, Delhi, Punjab, Simhapuri Energy Private Ltd., and Gujarat. Top 5 regional entities purchased 46.38% of the volume, and these were Jammu & Kashmir, Telangana, Chhattisgarh, Himachal Pradesh and West Bengal (Table-9& 10).

Of the total power exchange transactions, top 5 regional entities sold 33.20% of the volume, and these were Jindal India Thermal Power Ltd., Sterlite Energy Ltd., Gujarat, Maharashtra and Korba West Power. Top 5 regional entities purchased 49.78% of the volume, and these were Rajasthan, Bihar, Gujarat, Haryana and Dadra & Nagar Haveli (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 34.80% of the volume, and these were NTPC Stations (Western Region), NTPC Stations (Eastern Region), Punjab, Maharashtra and Haryana (Table-13). Top 5 regional entities overdrew 25.35% of the volume, and these were Uttar Pradesh, NTPC Stations (Eastern Region), NTPC Stations (Northern Region), Odisha and Rajasthan (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 Jindal India Thermal Power Ltd, Delhi, Thermal Powertech Corporation India Ltd, Haryana and Punjab. Top 5 electricity purchasing regional entities were Bihar, Telangana, Jammu & Kashmir, Rajasthan and Uttarakhand.

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 January 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 4.92% and -6.75% of the unconstrained cleared volume respectively. In terms of time, congestion occurred was 64.45% in IEX and 41.94% in PXIL (Table-16).

V: Bilateral Contracts executed by Traders

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

(i) Duration of bilateral contracts: During February, 2016, a total of 44 bilateral contracts (excluding banking/swap contracts) have been executed by traders for the volume of 1978.91MUs. Figure-7 shows the percentage of contracts categorized according to the period of power supply. It can be observed from the figure that 15.91% of the bilateral contracts were executed for duration of up to one week and 84.09% of the contracts were executed for duration of more than a week and upto one month.

During the month, 11 banking/swapping bilateral contracts were also executed for the volume of 218.94MUs.

(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 February, 2016 to May, 2016 based on bilateral contracts⁴ executed till February, 2016. Forward curves have been drawn for the contracts executed in February, 2016 and January, 2016 for the purpose of comparison. It is observed that the forward prices from February,

⁴Excluding Banking/Swapping contracts

2016 to May, 2016 were lower for the contracts executed in February, 2016 compared to the contracts executed in January, 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 January, 2016 are shown in Table-20. The market clearing volume of solar RECs transacted on IEX and PXIL were 41188 and 16232 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 164004 and 180515 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 0.017 and 0.023 for IEX and PXIL respectively. For non-solar RECs, the ratio of buy bids to sell bids was 0.022 and 0.031 for IEX and PXIL respectively.

VII: Inferences:

- The percentage of short-term transactions of electricity to total electricity generation was 10.05%.
- Of the total short-term transactions of electricity, 51% was transacted through bilateral (through traders and term ahead contracts on power exchanges and directly by distribution companies), followed by 31.07% through power exchanges and 17.92% through DSM.
- Top 5 trading licensees had a share of 78.83% 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 0.1596, indicating moderate-concentration of market power.
- The weighted average price of electricity transacted through trading licensees was ₹4.00/kWh. The weighted average prices of electricity transacted through IEX and PXIL were ₹2.48/kWh and ₹2.66/kWh respectively.
- The average price of electricity transacted through DSM was ₹1.68/kWh .
- Top 5 electricity selling regional entities were Jindal India Thermal Power Ltd, Delhi, Thermal Powertech Corporation India Ltd, Haryana and Punjab. Top 5 electricity purchasing regional entities were Bihar, Telangana, Jammu & Kashmir, Rajasthan, and Uttarakhand.
- The volume of electricity that could not be cleared due to congestion was 4.92% and - 6.68% of the unconstrained cleared volume for IEX and PXIL, respectively. In terms of time, congestion occurred was 64.45% of the time in IEX and 41.94% of the time in PXIL.
- In February 2016, 15.91% of the bilateral contracts were executed for duration of up to one week and 84.09% of the contracts were executed for duration of more than a week.
- The forward prices from February, 2016 to May, 2016 were lower for the contracts executed in February, 2016 compared to the contracts executed in January, 2016.

- The market clearing volume of solar RECs transacted on IEX and PXIL were 41188 and 16232 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 164004 and 180515 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), JANUARY 2016

Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	4699.94	51.00	5.13
	(i) Through Traders and PXs	3366.07	36.53	3.67
	(ii) Direct	1333.87	14.47	1.46
2	Through Power Exchanges	2863.63	31.07	3.12
	(i) IEX	2859.68	31.03	3.12
	(ii) PXIL	3.95	0.04	0.004
3	Through DSM	1651.67	17.92	1.80
	Total	9215.24	-	10.05
	Total Generation	91671.33	-	-

Source: NLDC

Figure-1: Volume of Short-term Transactions of Electricity, January 2016

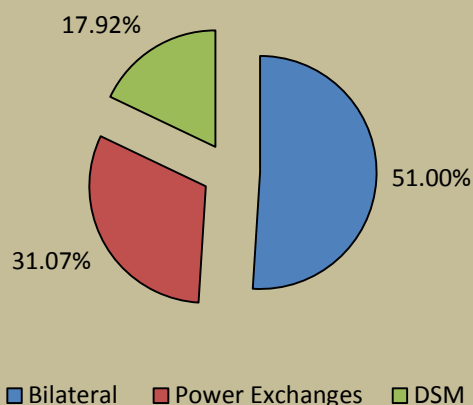


Figure-2: Volume of Various Kinds of Electricity Transactions in Total Electricity Generation, January 2016

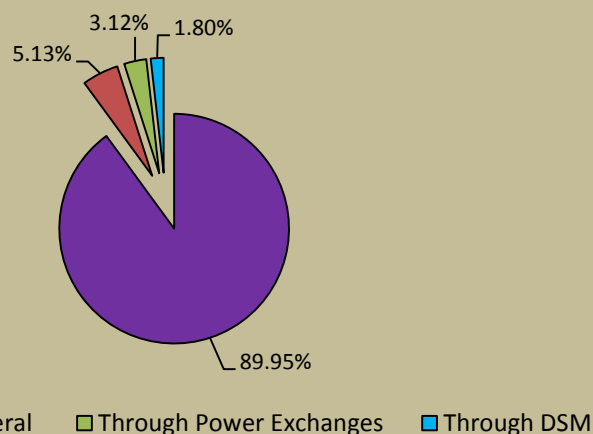


Figure-3: Volume of Short-term Transactions of Electricity, January 2016 (Day-wise)

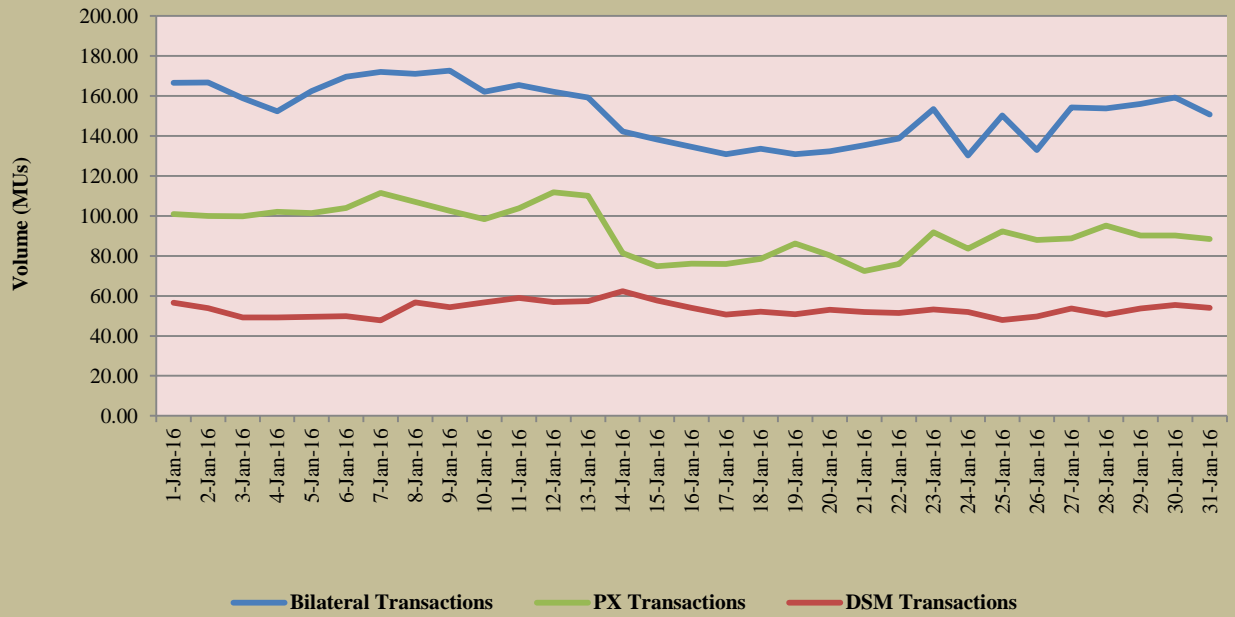


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, JANUARY 2016			
Sr.No	Name of the Trading Licensee	% Share in total Volume transacted by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd.	29.96	0.0898
2	Mittal Processors (P) Ltd.	16.03	0.0257
3	Manikaran Power Ltd.	11.80	0.0139
4	Tata Power Trading Company (P) Ltd.	10.96	0.0120
5	JSW Power Trading Company Ltd	10.08	0.0102
6	Adani Enterprises Ltd.	7.42	0.0055
7	Arunachal Pradesh Power Corporation (P) ltd	2.99	0.0009
8	GMR Energy Trading Ltd.	2.67	0.0007
9	Knowledge Infrastructure Systems (P) Ltd	1.80	0.0003
10	NTPC Vidyut Vyapar Nigam Ltd.	1.46	0.0002
11	RPG Power Trading Company Ltd.	1.24	0.0002
12	Instinct Infra & Power Ltd.	1.03	0.0001
13	Jaiprakash Associates Ltd.	0.90	0.0001
14	National Energy Trading & Services Ltd.	0.54	0.0000
15	Shree Cement Ltd.	0.34	0.0000
16	SN Power Markets Pvt. Ltd.	0.23	0.0000
17	My Home Power Private Ltd.	0.22	0.0000
18	Customized Energy Solutions India (P) Ltd.	0.16	0.0000
19	Essar Electric Power Development Corp. Ltd.	0.13	0.0000
20	Ambitious Power Trading Company Ltd.	0.06	0.0000
TOTAL		100.00%	0.1596
Top 5 trading licensees		78.83%	
<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>			

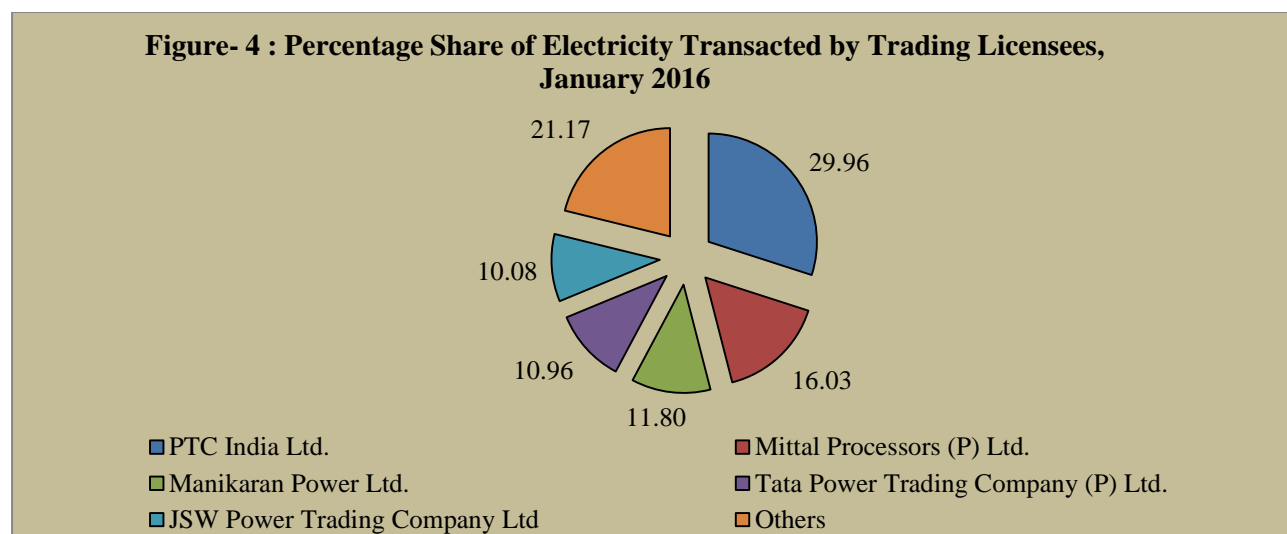


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, JANUARY 2016		
Sr.No	Item	Sale Price of Traders (₹/kWh)
1	Minimum	2.62
2	Maximum	6.54
3	Weighted Average	4.00

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), JANUARY 2016		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	4.10
2	PEAK	-
3	OFF PEAK	3.55

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, JANUARY 2016			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	0.27	1.98
2	Maximum	7.16	4.50
3	Weighted Average	2.48	2.66

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, JANUARY 2016			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	7.94	2.90
2	Day Ahead Contingency Contracts	4.79	2.58
	Total	12.73	2.78

Source: IEX

Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, JANUARY 2016			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	32.63	2.25
2	Daily Contracts	7.20	2.32
	Total	39.83	2.27

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH DSM, JANUARY 2016		
Sr.No	Item	Price in All India Grid (₹/kWh)
1	Minimum	0.00
2	Maximum	5.95
3	Average	1.68

Source: NLDC

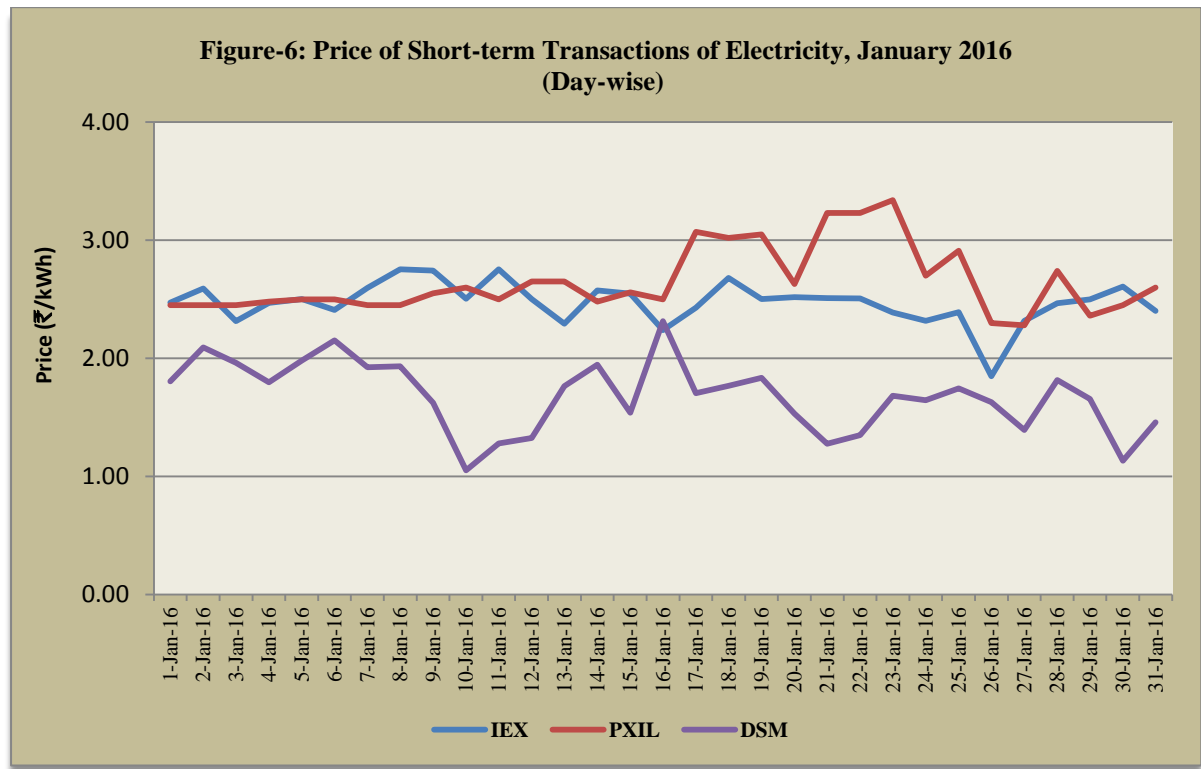
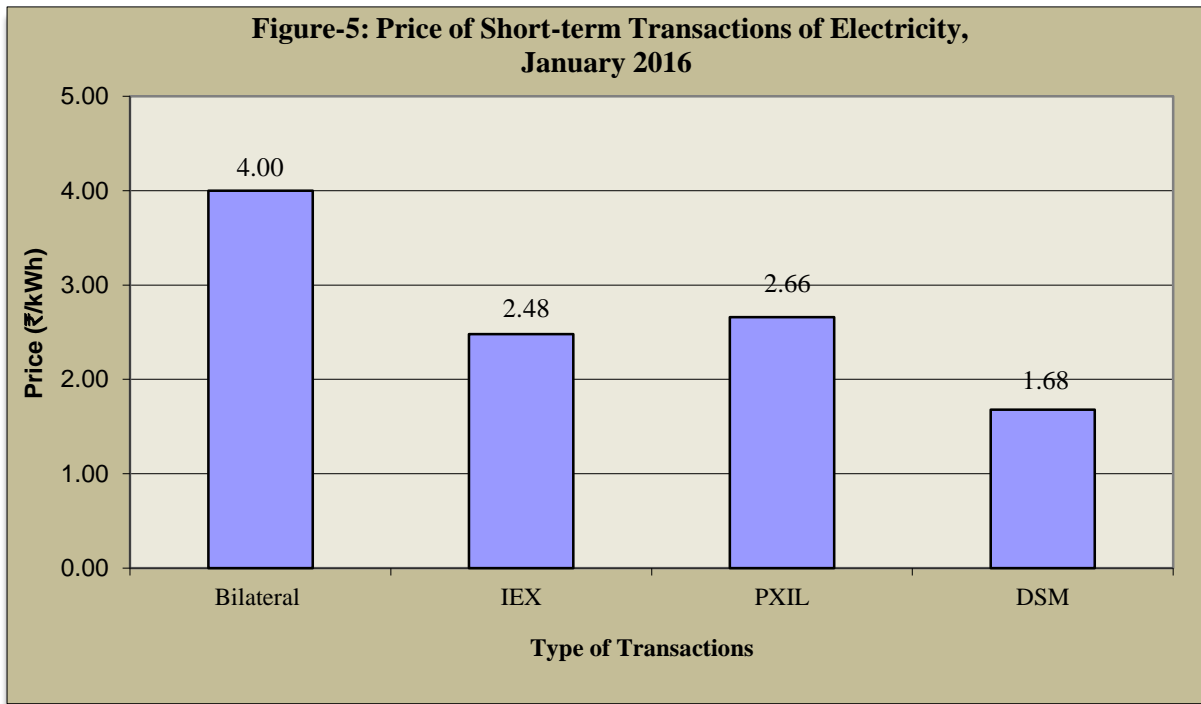


Table-9: VOLUME OF ELECTRICITY SOLD THROUGH BILATERAL, JANUARY 2016		
Name of the State/UT/Other Regional Entity	Volume of Sale (MUs)	% of Volume
HARYANA	686.33	15.02
DELHI	456.15	9.98
PUNJAB	419.64	9.18
SIMHAPURI	270.19	5.91
GUJARAT	246.15	5.39
GMR KAMALANGA	235.42	5.15
THERMAL POWERTECH	217.03	4.75
UTTAR PRADESH	206.27	4.51
JITPL	185.28	4.06
LANKO KONDAPALLI	176.26	3.86
WEST BENGAL	157.27	3.44
JINDAL POWER	150.03	3.28
KORBA WEST POWER	143.87	3.15
RAJASTHAN	142.44	3.12
SHREE CEMENT	137.05	3.00
HIMACHAL PRADESH	108.44	2.37
ADHUNIK POWER LTD	89.89	1.97
MEENAKSHI	85.13	1.86
STERLITE	76.01	1.66
CHHATTISGARH	66.53	1.46
ANDHRA PRADESH	62.92	1.38
DVC	42.36	0.93
ODISHA	41.73	0.91
DB POWER	37.06	0.81
JINDAL STAGE-II	24.40	0.53
NSPCL	23.21	0.51
TELANGANA	20.43	0.45
MAHARASHTRA	15.27	0.33
J & K	14.22	0.31
ACBIL	11.60	0.25
TRIPURA	8.32	0.18
CHANDIGARH	7.44	0.16
GMR CHHATTISGARH	3.28	0.07
MEGHALAYA	1.19	0.03
Total	4568.80	100.00
Volume Sold by top 5 Regional Entities	2078.46	45.49

Table-10: VOLUME OF ELECTRICITY PURCHASED THROUGH BILATERAL, JANUARY 2016		
Name of the State/UT/Other Regional Entity	Volume of Purchase (MUs)	% of Volume
J & K	534.54	11.37
TELANGANA	474.07	10.08
CHHATTISGARH	404.87	8.61
HIMACHAL PRADESH	402.50	8.56
WEST BENGAL	364.63	7.75
BIHAR	261.92	5.57
MP	260.75	5.55
UTTARAKHAND	238.06	5.06
HARYANA	229.06	4.87
RAJASTHAN	222.59	4.73
KERALA	210.96	4.49
MAHARASHTRA	187.06	3.98
UTTAR PRADESH	144.13	3.07
ANDHRA PRADESH	121.66	2.59
ESSAR STEEL	98.09	2.09
ODISHA	97.66	2.08
JHARKHAND	95.92	2.04
ASSAM	92.93	1.98
GUJARAT	90.48	1.92
MEGHALAYA	69.36	1.48
TAMIL NADU	46.94	1.00
DELHI	24.83	0.53
MANIPUR	15.92	0.34
DADRA & NAGAR HAVELI	8.21	0.17
PUNJAB	3.77	0.08
DAMAN AND DIU	1.16	0.02
TOTAL	4702.07	100.00
Volume Purchased by top 5 Regional Entities	2180.61	46.38

**Table-11: VOLUME OF ELECTRICITY SOLD THROUGH POWER EXCHANGES,
JANUARY 2016**

Name of the State/UT/Other Regional Entity	Volume of Sale (MUs)	% of Volume
JITPL	273.22	9.54
STERLITE	179.68	6.27
GUJARAT	173.23	6.05
MAHARASHTRA	165.65	5.78
KORBA WEST POWER	159.07	5.55
JINDAL POWER	157.30	5.49
THERMAL POWERTECH	141.27	4.93
GMR CHHATTISGARH	123.51	4.31
DB POWER	110.01	3.84
ADHUNIK POWER LTD	103.41	3.61
TRIPURA	103.28	3.61
DELHI	102.34	3.57
DCPP	83.30	2.91
HIMACHAL PRADESH	80.17	2.80
MP	69.15	2.41
ODISHA	59.13	2.06
JINDAL STAGE-II	58.93	2.06
KARCHAM WANGTOO	57.59	2.01
SHREE CEMENT	52.63	1.84
SIMHAPURI	50.39	1.76
RAJASTHAN	49.47	1.73
CHHATTISGARH	46.96	1.64
HARYANA	45.86	1.60
TELANGANA	43.42	1.52
MEENAKSHI	41.33	1.44
DHARIWAL POWER	35.00	1.22
ACBIL	29.81	1.04
SPECTRUM	24.09	0.84
NJPC	22.54	0.79
JAYPEE NIGRIE	22.40	0.78
DVC	19.82	0.69
BALCO	16.48	0.58
KERALA	16.21	0.57
WEST BENGAL	14.32	0.50
PUNJAB	13.04	0.46
JORETHANG	12.83	0.45
AD HYDRO	12.79	0.45
J & K	12.40	0.43
ASSAM	11.96	0.42
NHPC STATIONS	10.45	0.36
CHUZACHEN HEP	9.79	0.34
GMR KAMALANGA	8.97	0.31
GOA	8.22	0.29
SIKKIM	7.25	0.25
MEGHALAYA	7.07	0.25

MANIPUR	6.91	0.24
ANDHRA PRADESH	3.36	0.12
MAITHON POWER LTD	2.31	0.08
MIZORAM	2.07	0.07
CHANDIGARH	1.51	0.05
MALANA	0.63	0.02
LANCO BUDHIL	0.57	0.02
UTTARAKHAND	0.55	0.02
Total	2863.63	100.00
Volume sold by top 5 Regional Entities	950.85	33.20

Table-12: VOLUME OF ELECTRICITY PURCHASED THROUGH POWER EXCHANGES, JANUARY 2016		
Name of the State/UT/Other Regional Entity	Volume of Purchase (MUs)	% of Volume
RAJASTHAN	440.11	15.37
BIHAR	377.74	13.19
GUJARAT	279.84	9.77
HARYANA	165.05	5.76
DADRA & NAGAR HAVELI	162.86	5.69
ESSAR STEEL	148.92	5.20
TELANGANA	144.31	5.04
KARNATAKA	142.03	4.96
PUNJAB	141.57	4.94
UTTARAKHAND	132.20	4.62
DELHI	111.01	3.88
ANDHRA PRADESH	107.35	3.75
HIMACHAL PRADESH	73.62	2.57
ODISHA	71.96	2.51
MAHARASHTRA	58.56	2.04
WEST BENGAL	53.20	1.86
DAMAN AND DIU	37.69	1.32
MP	30.26	1.06
ASSAM	30.23	1.06
MEGHALAYA	29.01	1.01
KERALA	26.91	0.94
J & K	21.15	0.74
TAMIL NADU	17.73	0.62
GOA	15.03	0.52
CHHATTISGARH	14.32	0.50
NAGALAND	10.60	0.37
ARUNACHAL PRADESH	7.72	0.27
CHANDIGARH	6.88	0.24
JHARKHAND	3.40	0.12
MANIPUR	2.11	0.07
MIZORAM	0.27	0.01
TOTAL	2863.63	100.00
Volume purchased by top 5 Regional Entities	1425.60	49.78

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

Name of the State/UT/Other Regional Entity	Volume of Under drawal (MUs)	% of Volume
NTPC STATIONS-WR	134.77	8.45
NTPC STATIONS-ER	127.58	8.00
PUNJAB	116.90	7.33
MAHARASHTRA	100.16	6.28
HARYANA	75.75	4.75
GUJARAT	72.89	4.57
MP	70.41	4.41
TAMIL NADU	66.51	4.17
UTTAR PRADESH	59.78	3.75
NHPC STATIONS	57.32	3.59
ANDHRA PRADESH	51.11	3.20
RAJASTHAN	47.20	2.96
BIHAR	44.40	2.78
TELANGANA	42.57	2.67
NTPC STATIONS-NR	41.16	2.58
DELHI	40.98	2.57
DVC	36.97	2.32
CHHATTISGARH	36.94	2.32
KARNATAKA	28.43	1.78
GOA	17.42	1.09
HIMACHAL PRADESH	17.20	1.08
WEST BENGAL	16.38	1.03
THERMAL POWERTECH	15.19	0.95
STERLITE	14.50	0.91
NTPC STATIONS-SR	14.32	0.90
NEEPCO STATIONS	13.92	0.87
CGPL	13.29	0.83
ODISHA	12.98	0.81
JHARKHAND	11.38	0.71
ESSAR STEEL	10.02	0.63
JITPL	9.85	0.62
DCPP	9.57	0.60
UTTARAKHAND	9.54	0.60
JAYPEE NIGRIE	8.96	0.56
KSK MAHANADI	8.15	0.51
JINDAL POWER	8.02	0.50
DADRA & NAGAR HAVELI	7.93	0.50
PONDICHERRY	7.84	0.49
ASSAM	7.83	0.49
BALCO	7.26	0.45
NJPC	7.25	0.45
MAITHON POWER LTD	7.03	0.44
MEGHALAYA	5.88	0.37
SIKKIM	5.64	0.35
NSPCL	5.37	0.34
LANKO_AMK	4.49	0.28
CHANDIGARH	4.48	0.28

KERALA	4.16	0.26
ADHUNIK POWER LTD	3.95	0.25
DAMAN AND DIU	3.94	0.25
DB POWER	3.86	0.24
URI-2	3.79	0.24
MEENAKSHI	3.56	0.22
TEESTA HEP	3.35	0.21
GMR KAMALANGA	3.34	0.21
MB POWER	3.08	0.19
GMR CHHATTISGARH	2.99	0.19
KARCHAM WANGTOO	2.42	0.15
TRIPURA	2.35	0.15
KORBA WEST POWER	2.30	0.14
EMCO	2.23	0.14
MANIPUR	1.99	0.12
RGPPPL(DABHOL)	1.98	0.12
DHARIWAL POWER	1.57	0.10
ACBIL	1.54	0.10
JORETHANG	1.27	0.08
SIMHAPURI	1.10	0.07
SHREE CEMENT	1.09	0.07
LOKTAK	1.06	0.07
COASTGEN	1.02	0.06
RANGIT HEP	1.01	0.06
AD HYDRO	0.84	0.05
NAGALAND	0.70	0.04
DGEN MEGA POWER	0.36	0.02
ARUNACHAL PRADESH	0.29	0.02
CHUZACHEN HEP	0.25	0.02
MALANA	0.15	0.01
ADANI HVDC	0.11	0.01
LANCO BUDHIL	0.07	0.00
MIZORAM	0.07	0.00
VANDANA VIDYUT	0.04	0.00
LANKO KONDAPALLI	0.02	0.00
Total	1595.39	100.00
Volume Exported by top 5 Regional Entities	555.16	34.80

Table-14: VOLUME OF ELECTRICITY OVER DRAWAL (IMPORTED) THROUGH DSM, JANUARY 2016		
Name of the State/UT/Other Regional Entity	Volume of Over drawal (MUs)	% of Volume
UTTAR PRADESH	101.47	6.71
NTPC STATIONS-ER	75.64	5.01
NTPC STATIONS-NR	72.17	4.78
ODISHA	67.12	4.44
RAJASTHAN	66.70	4.41
GUJARAT	56.06	3.71
TAMIL NADU	55.76	3.69
UTTARAKHAND	54.37	3.60
KARNATAKA	51.20	3.39
MAHARASHTRA	47.64	3.15
PUNJAB	46.92	3.10
KERALA	45.80	3.03
BIHAR	44.37	2.94
HARYANA	43.58	2.88
NTPC STATIONS-WR	43.58	2.88
WEST BENGAL	40.83	2.70
HIMACHAL PRADESH	38.62	2.56
NTPC STATIONS-SR	36.85	2.44
TELANGANA	35.92	2.38
STERLITE	34.71	2.30
DVC	30.15	2.00
CHHATTISGARH	29.93	1.98
ESSAR STEEL	27.59	1.83
MP	26.48	1.75
ASSAM	25.97	1.72
ANDHRA PRADESH	25.51	1.69
JHARKHAND	25.25	1.67
CHANDIGARH	18.99	1.26
TRIPURA	17.71	1.17
DELHI	17.62	1.17
ARUNACHAL PRADESH	16.86	1.12
NAGALAND	13.55	0.90
MIZORAM	13.04	0.86
CGPL	12.19	0.81
JITPL	11.98	0.79
GOA	9.93	0.66
MANIPUR	7.15	0.47
NSPCL	7.06	0.47
DAMAN AND DIU	6.93	0.46
NEEPCO STATIONS	6.15	0.41
ACBIL	6.02	0.40

JINDAL POWER	5.76	0.38
NHPC STATIONS	5.71	0.38
MAITHON POWER LTD	5.65	0.37
GMR CHHATTISGARH	5.53	0.37
KORBA WEST POWER	5.37	0.36
DHARIWAL POWER	5.06	0.34
ADHUNIK POWER LTD	4.60	0.30
PONDICHERRY	4.15	0.27
LANKO KONDAPALLI	3.84	0.25
BALCO	3.49	0.23
MEGHALAYA	3.33	0.22
GMR KAMALANGA	3.26	0.22
DCPP	3.14	0.21
KSK MAHANADI	2.85	0.19
THERMAL POWERTECH	2.75	0.18
MB POWER	2.70	0.18
COASTGEN	2.61	0.17
SHREE CEMENT	2.27	0.15
MEENAKSHI	2.26	0.15
NJPC	2.17	0.14
RGPPPL(DABHOL)	2.10	0.14
SIKKIM	2.00	0.13
JAYPEE NIGRIE	1.98	0.13
EMCO	1.87	0.12
JORETHANG	1.81	0.12
DADRA & NAGAR HAVELI	1.53	0.10
DGEN MEGA POWER	1.45	0.10
SIMHAPURI	1.37	0.09
KARCHAM WANGTOO	1.17	0.08
URI-2	1.08	0.07
ESSAR POWER	1.06	0.07
RANGIT HEP	0.51	0.03
LANKO_AMK	0.44	0.03
AD HYDRO	0.40	0.03
MALANA	0.27	0.02
DB POWER	0.16	0.01
TEESTA HEP	0.13	0.01
CHUZACHEN HEP	0.09	0.01
LANCO BUDHIL	0.05	0.00
TOTAL	1511.34	100.00
Volume Imported by top 5 Regional Entities	383.10	25.35

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

Sr.No.	Name of the State/UT/Other Regional Entity	Total volume of net short-term transactions of electricity*
1	BIHAR	639.63
2	TELANGANA	547.88
3	J & K	529.08
4	RAJASTHAN	490.28
5	UTTARAKHAND	414.53
6	HIMACHAL PRADESH	308.94
7	CHHATTISGARH	298.69
8	WEST BENGAL	270.70
9	ESSAR STEEL	264.58
10	KERALA	263.30
11	MP	177.93
12	KARNATAKA	164.81
13	DADRA & NAGAR HAVELI	164.67
14	ANDHRA PRADESH	137.12
15	ASSAM	129.35
16	ODISHA	122.90
17	JHARKHAND	113.19
18	MEGHALAYA	87.56
19	TAMIL NADU	53.91
20	DAMAN AND DIU	41.85
21	NTPC STATIONS-NR	31.01
22	ARUNACHAL PRADESH	24.29
23	NAGALAND	23.45
24	NTPC STATIONS-SR	22.53
25	MANIPUR	16.27
26	CHANDIGARH	12.43
27	MAHARASHTRA	12.17
28	MIZORAM	11.17
29	COASTGEN	1.59
30	DGEN MEGA POWER	1.09
31	ESSAR POWER	1.06
32	RGPPL(DABHOL)	0.12
33	VANDANA VIDYUT	-0.04
34	ADANI HVDC	-0.11
35	EMCO	-0.36
36	MB POWER	-0.38
37	RANGIT HEP	-0.51
38	MALANA	-0.52
39	LANCO BUDHIL	-0.59
40	GOA	-0.68
41	LOKTAK	-1.06
42	CGPL	-1.10
43	URI-2	-2.71
44	TEESTA HEP	-3.22

45	PONDICHERRY	-3.69
46	MAITHON POWER LTD	-3.70
47	LANKO_AMK	-4.04
48	KSK MAHANADI	-5.30
49	NEEPCO STATIONS	-7.77
50	CHUZACHEN HEP	-9.94
51	SIKKIM	-10.90
52	JORETHANG	-12.29
53	AD HYDRO	-13.23
54	BALCO	-20.25
55	UTTAR PRADESH	-20.45
56	NSPCL	-21.51
57	SPECTRUM	-24.09
58	NJPC	-27.62
59	JAYPEE NIGRIE	-29.38
60	DHARIWAL POWER	-31.50
61	ACBIL	-36.93
62	NTPC STATIONS-ER	-51.93
63	KARCHAM WANGTOO	-58.84
64	NHPC STATIONS	-62.05
65	GUJARAT	-65.89
66	DVC	-69.00
67	JINDAL STAGE-II	-83.32
68	DCPP	-89.73
69	NTPC STATIONS-WR	-91.19
70	TRIPURA	-96.24
71	GMR CHHATTISGARH	-124.24
72	MEENAKSHI	-127.76
73	DB POWER	-150.76
74	LANKO KONDAPALLI	-172.45
75	SHREE CEMENT	-188.50
76	ADHUNIK POWER LTD	-192.65
77	STERLITE	-235.48
78	GMR KAMALANGA	-244.47
79	KORBA WEST POWER	-299.87
80	JINDAL POWER	-309.59
81	SIMHAPURI	-320.30
82	PUNJAB	-357.33
83	HARYANA	-370.26
84	THERMAL POWERTECH	-370.75
85	DELHI	-446.02
86	JITPL	-456.36
* 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, JANUARY 2016			
	Details of Congestion	IEX	PXIL
A	Unconstrained Cleared Volume* (MUs)	3080.83	3.70
B	Actual Cleared Volume and hence scheduled (MUs)#	2929.26	3.95
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	151.58	-0.25
D	Volume of electricity that could not be cleared as % to Unconstrained Cleared Volume	4.92%	-6.75%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	64.45%	41.94%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	22.21%	20.99%
	6.00 - 12.00 hours	31.86%	24.12%
	12.00 - 18.00 hours	27.16%	27.08%
	18.00 - 24.00 hours	18.77%	27.80%
* This power would have been scheduled had there been no congestion.			
# In some instances, after market splitting the Actual Cleared Volume can be greater than the Unconstrained Cleared Volume.			
Source: IEX & PXIL & NLDC			

Table-17: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA (MUs) (DAY-WISE), JANUARY 2016						
Date	Bilateral		Power Exchange (Area Clearing Volume# of Day Ahead Market)		Deviation Settlement (Over Draw+Under Generation)	Total Electricity Generation (MU) as given at CEA Website*
	Through Traders and PXs**	Direct	IEX	PXIL		
1-Jan-16	110.66	56.01	100.80	0.15	56.58	2908.50
2-Jan-16	107.72	59.04	99.83	0.16	53.81	2935.00
3-Jan-16	107.46	51.44	99.76	0.14	49.30	2915.00
4-Jan-16	100.87	51.52	101.86	0.13	49.28	2976.00
5-Jan-16	110.31	52.11	101.37	0.12	49.53	3015.00
6-Jan-16	110.87	58.70	103.91	0.13	49.90	3017***
7-Jan-16	109.84	62.17	111.34	0.15	47.72	3019.00
8-Jan-16	109.23	61.91	106.88	0.15	56.67	2991.00
9-Jan-16	112.16	60.50	102.46	0.14	54.35	2968.00
10-Jan-16	103.87	58.31	98.33	0.13	56.71	2924.37
11-Jan-16	109.65	55.89	103.62	0.14	59.04	2988.00
12-Jan-16	108.10	53.98	111.76	0.14	56.84	3045.00
13-Jan-16	106.62	52.69	109.92	0.14	57.38	3024.00
14-Jan-16	105.27	37.05	81.26	0.09	62.34	2959.00
15-Jan-16	99.30	38.93	74.82	0.07	57.68	2899.10
16-Jan-16	96.46	38.09	76.00	0.07	54.07	2868.00
17-Jan-16	101.49	29.32	75.81	0.14	50.73	2863.30
18-Jan-16	101.46	32.20	78.43	0.15	52.11	2943.57
19-Jan-16	98.99	31.93	86.06	0.16	50.77	2913.10
20-Jan-16	103.37	29.00	80.20	0.13	53.00	2900.00
21-Jan-16	105.09	30.30	72.35	0.12	51.98	2937.90
22-Jan-16	110.01	28.73	75.84	0.12	51.52	2916.58
23-Jan-16	121.78	31.71	91.62	0.13	53.29	2924.90
24-Jan-16	102.98	27.24	83.46	0.13	52.02	2889.70
25-Jan-16	118.70	31.59	92.09	0.14	47.96	2984.00
26-Jan-16	104.74	28.28	87.83	0.13	49.63	2879.00
27-Jan-16	118.80	35.52	88.63	0.07	53.71	2997.00
28-Jan-16	117.14	36.71	95.03	0.14	50.59	3060.10
29-Jan-16	117.13	38.86	90.12	0.11	53.70	3047.90
30-Jan-16	120.05	39.26	90.01	0.15	55.40	3032.70
31-Jan-16	115.94	34.88	88.29	0.11	54.07	2929.61
Total	3366.07	1333.87	2859.68	3.95	1651.67	91671.33

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.

***Data is not available. Average of previous day (January 5th) and next day (January 7th) is taken.

Area Clearing Volume represents the scheduled volume of all the bid areas.

Table-18: PRICE OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (₹/kWh), (DAY-WISE), JANUARY 2016									
Market Segment	Day ahead market of IEX			Day ahead market of PXIL			Under Drawl/Over Drawl from the Grid (DSM)		
Date	Mini-mum ACP	Maxi-mum ACP	Weighted Average Price*	Mini-mum ACP	Maxi-mum ACP	Weighted Average Price*	All India Grid		
							Mini-mum Price	Maxi-mum Price	Average Price**
1-Jan-16	1.00	4.96	2.47	2.07	2.95	2.45	0.00	5.11	1.81
2-Jan-16	0.80	4.48	2.59	2.11	2.97	2.45	0.00	3.45	2.09
3-Jan-16	0.73	7.00	2.31	2.11	2.97	2.45	0.00	3.45	1.96
4-Jan-16	0.68	6.25	2.47	2.14	3.00	2.48	0.00	3.45	1.80
5-Jan-16	0.60	6.01	2.50	2.16	3.00	2.50	0.00	3.45	1.98
6-Jan-16	0.80	6.01	2.41	2.16	3.00	2.50	0.00	4.91	2.15
7-Jan-16	1.35	7.11	2.60	2.05	2.90	2.45	0.00	5.11	1.92
8-Jan-16	1.60	7.00	2.75	2.05	2.85	2.45	0.00	5.11	1.93
9-Jan-16	1.55	7.16	2.74	2.15	2.95	2.55	0.00	3.45	1.63
10-Jan-16	1.60	4.44	2.50	2.20	3.00	2.60	0.00	3.24	1.05
11-Jan-16	1.60	5.21	2.75	2.10	2.90	2.50	0.00	3.24	1.28
12-Jan-16	1.60	5.28	2.50	2.25	3.05	2.65	0.00	3.45	1.32
13-Jan-16	0.80	7.11	2.29	2.25	3.05	2.65	0.00	3.45	1.77
14-Jan-16	1.60	3.66	2.58	2.10	2.90	2.48	0.00	5.95	1.95
15-Jan-16	1.50	5.40	2.55	2.20	2.95	2.56	0.00	5.11	1.54
16-Jan-16	0.50	6.50	2.24	2.00	3.37	2.50	0.00	5.95	2.31
17-Jan-16	0.27	6.00	2.43	1.98	3.00	3.07	0.00	3.45	1.71
18-Jan-16	1.30	5.00	2.68	3.50	4.00	3.02	0.00	3.45	1.77
19-Jan-16	1.30	5.00	2.50	3.50	3.85	3.05	0.00	5.11	1.84
20-Jan-16	1.00	6.00	2.52	2.90	2.90	2.63	0.00	5.11	1.53
21-Jan-16	0.80	6.11	2.51	3.50	4.20	3.23	0.00	3.24	1.28
22-Jan-16	0.80	7.01	2.51	2.03	2.94	3.23	0.00	3.45	1.35
23-Jan-16	1.50	5.20	2.39	3.50	4.50	3.34	0.00	3.45	1.68
24-Jan-16	0.80	4.85	2.32	2.10	2.82	2.70	0.00	4.91	1.64
25-Jan-16	1.34	3.84	2.39	3.50	3.50	2.91	0.00	3.45	1.75
26-Jan-16	0.80	3.21	1.85	2.00	2.72	2.30	0.00	3.03	1.63
27-Jan-16	1.31	6.01	2.32	2.12	2.72	2.28	0.00	3.45	1.39
28-Jan-16	0.80	7.01	2.47	2.00	2.72	2.74	0.00	3.45	1.82
29-Jan-16	1.52	5.75	2.50	2.00	2.72	2.36	0.00	3.24	1.66
30-Jan-16	1.80	3.98	2.61	2.15	2.87	2.45	0.00	3.45	1.13
31-Jan-16	1.73	3.06	2.40	2.60	2.60	2.60	0.00	3.45	1.46
	0.27#	7.16#	2.48	1.98#	4.50#	2.66	0#	5.95#	1.68**

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), JANUARY 2016

Name of the State/UT/Other Regional Entity	Through Bilateral			Through Power Exchange			Through DSM with Regional Grid			Total Net***
	Sale	Purchase	Net**	Sale	Purchase	Net**	Import (Over Drawl)	Export (Under Drawl)	Net**	
PUNJAB	419.64	3.77	-415.87	13.04	141.57	128.52	46.92	116.90	-69.99	-357.33
HARYANA	686.33	229.06	-457.27	45.86	165.05	119.19	43.58	75.75	-32.17	-370.26
RAJASTHAN	142.44	222.59	80.15	49.47	440.11	390.63	66.70	47.20	19.50	490.28
DELHI	456.15	24.83	-431.33	102.34	111.01	8.67	17.62	40.98	-23.36	-446.02
UTTAR PRADESH	206.27	144.13	-62.14	0.00	0.00	0.00	101.47	59.78	41.69	-20.45
UTTARAKHAND	0.00	238.06	238.06	0.55	132.20	131.65	54.37	9.54	44.82	414.53
HIMACHAL PRADESH	108.44	402.50	294.06	80.17	73.62	-6.55	38.62	17.20	21.42	308.94
J & K	14.22	534.54	520.32	12.40	21.15	8.76	0.00	0.00	0.00	529.08
CHANDIGARH	7.44	0.00	-7.44	1.51	6.88	5.37	18.99	4.48	14.51	12.43
MP	0.00	260.75	260.75	69.15	30.26	-38.89	26.48	70.41	-43.93	177.93
MAHARASHTRA	15.27	187.06	171.79	165.65	58.56	-107.09	47.64	100.16	-52.52	12.17
GUJARAT	246.15	90.48	-155.67	173.23	279.84	106.61	56.06	72.89	-16.84	-65.89
CHHATTISGARH	66.53	404.87	338.34	46.96	14.32	-32.64	29.93	36.94	-7.01	298.69
DAMAN AND DIU	0.00	1.16	1.16	0.00	37.69	37.69	6.93	3.94	3.00	41.85
DADRA & NAGAR HAVELI	0.00	8.21	8.21	0.00	162.86	162.86	1.53	7.93	-6.40	164.67
ANDHRA PRADESH	62.92	121.66	58.74	3.36	107.35	103.99	25.51	51.11	-25.60	137.12
KARNATAKA	0.00	0.00	0.00	0.00	142.03	142.03	51.20	28.43	22.78	164.81
KERALA	0.00	210.96	210.96	16.21	26.91	10.70	45.80	4.16	41.63	263.30
TAMIL NADU	0.00	46.94	46.94	0.00	17.73	17.73	55.76	66.51	-10.76	53.91
PONDICHERRY	0.00	0.00	0.00	0.00	0.00	0.00	4.15	7.84	-3.69	-3.69
GOA	0.00	0.00	0.00	8.22	15.03	6.81	9.93	17.42	-7.49	-0.68
TELANGANA	20.43	474.07	453.64	43.42	144.31	100.89	35.92	42.57	-6.65	547.88
WEST BENGAL	157.27	364.63	207.36	14.32	53.20	38.88	40.83	16.38	24.45	270.70
ODISHA	41.73	97.66	55.93	59.13	71.96	12.83	67.12	12.98	54.14	122.90
BIHAR	0.00	261.92	261.92	0.00	377.74	377.74	44.37	44.40	-0.03	639.63
JHARKHAND	0.00	95.92	95.92	0.00	3.40	3.40	25.25	11.38	13.87	113.19
SIKKIM	0.00	0.00	0.00	7.25	0.00	-7.25	2.00	5.64	-3.64	-10.90
DVC	42.36	0.00	-42.36	19.82	0.00	-19.82	30.15	36.97	-6.82	-69.00
ARUNACHAL PRADESH	0.00	0.00	0.00	0.00	7.72	7.72	16.86	0.29	16.57	24.29
ASSAM	0.00	92.93	92.93	11.96	30.23	18.27	25.97	7.83	18.15	129.35
MANIPUR	0.00	15.92	15.92	6.91	2.11	-4.80	7.15	1.99	5.16	16.27
MEGHALAYA	1.19	69.36	68.17	7.07	29.01	21.94	3.33	5.88	-2.55	87.56
MIZORAM	0.00	0.00	0.00	2.07	0.27	-1.80	13.04	0.07	12.97	11.17
NAGALAND	0.00	0.00	0.00	0.00	10.60	10.60	13.55	0.70	12.85	23.45
TRIPURA	8.32	0.00	-8.32	103.28	0.00	-103.28	17.71	2.35	15.36	-96.24
NTPC STATIONS-NR	0.00	0.00	0.00	0.00	0.00	0.00	72.17	41.16	31.01	31.01

NHPC STATIONS	0.00	0.00	0.00	10.45	0.00	-10.45	5.71	57.32	-51.61	-62.05
NJPC	0.00	0.00	0.00	22.54	0.00	-22.54	2.17	7.25	-5.08	-27.62
AD HYDRO	0.00	0.00	0.00	12.79	0.00	-12.79	0.40	0.84	-0.44	-13.23
KARCHAM WANGTOO	0.00	0.00	0.00	57.59	0.00	-57.59	1.17	2.42	-1.25	-58.84
SHREE CEMENT	137.05	0.00	-137.05	52.63	0.00	-52.63	2.27	1.09	1.18	-188.50
LANCO BUDHIL	0.00	0.00	0.00	0.57	0.00	-0.57	0.05	0.07	-0.02	-0.59
ADANI HVDC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	-0.11	-0.11
MALANA	0.00	0.00	0.00	0.63	0.00	-0.63	0.27	0.15	0.11	-0.52
URI-2	0.00	0.00	0.00	0.00	0.00	0.00	1.08	3.79	-2.71	-2.71
NTPC STATIONS-WR	0.00	0.00	0.00	0.00	0.00	0.00	43.58	134.77	-91.19	-91.19
JINDAL POWER	150.03	0.00	-150.03	157.30	0.00	-157.30	5.76	8.02	-2.26	-309.59
LANKO_AMK	0.00	0.00	0.00	0.00	0.00	0.00	0.44	4.49	-4.04	-4.04
NSPCL	23.21	0.00	-23.21	0.00	0.00	0.00	7.06	5.37	1.69	-21.51
ACBIL	11.60	0.00	-11.60	29.81	0.00	-29.81	6.02	1.54	4.48	-36.93
BALCO	0.00	0.00	0.00	16.48	0.00	-16.48	3.49	7.26	-3.77	-20.25
RGPPL(DABHOL)	0.00	0.00	0.00	0.00	0.00	0.00	2.10	1.98	0.12	0.12
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	12.19	13.29	-1.10	-1.10
DCPP	0.00	0.00	0.00	83.30	0.00	-83.30	3.14	9.57	-6.43	-89.73
EMCO	0.00	0.00	0.00	0.00	0.00	0.00	1.87	2.23	-0.36	-0.36
VANDANA VIDYUT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	-0.04	-0.04
ESSAR STEEL	0.00	98.09	98.09	0.00	148.92	148.92	27.59	10.02	17.57	264.58
KSK MAHANADI	0.00	0.00	0.00	0.00	0.00	0.00	2.85	8.15	-5.30	-5.30
ESSAR POWER	0.00	0.00	0.00	0.00	0.00	0.00	1.06	0.00	1.06	1.06
JINDAL STAGE-II	24.40	0.00	-24.40	58.93	0.00	-58.93	0.00	0.00	0.00	-83.32
DB POWER	37.06	0.00	-37.06	110.01	0.00	-110.01	0.16	3.86	-3.70	-150.76
DHARIWAL POWER	0.00	0.00	0.00	35.00	0.00	-35.00	5.06	1.57	3.49	-31.50
JAYPEE NIGRIE	0.00	0.00	0.00	22.40	0.00	-22.40	1.98	8.96	-6.98	-29.38
DGEN MEGA POWER	0.00	0.00	0.00	0.00	0.00	0.00	1.45	0.36	1.09	1.09
GMR CHHATTISGARH	3.28	0.00	-3.28	123.51	0.00	-123.51	5.53	2.99	2.54	-124.24
KORBA WEST POWER	143.87	0.00	-143.87	159.07	0.00	-159.07	5.37	2.30	3.06	-299.87
MB POWER	0.00	0.00	0.00	0.00	0.00	0.00	2.70	3.08	-0.38	-0.38
SPECTRUM	0.00	0.00	0.00	24.09	0.00	-24.09	0.00	0.00	0.00	-24.09
NTPC STATIONS-SR	0.00	0.00	0.00	0.00	0.00	0.00	36.85	14.32	22.53	22.53
LANKO KONDAPALLI	176.26	0.00	-176.26	0.00	0.00	0.00	3.84	0.02	3.82	-172.45
SIMHAPURI	270.19	0.00	-270.19	50.39	0.00	-50.39	1.37	1.10	0.28	-320.30
MEENAKSHI	85.13	0.00	-85.13	41.33	0.00	-41.33	2.26	3.56	-1.30	-127.76
COASTGEN	0.00	0.00	0.00	0.00	0.00	0.00	2.61	1.02	1.59	1.59
THERMAL POWERTECH	217.03	0.00	-217.03	141.27	0.00	-141.27	2.75	15.19	-12.45	-370.75
NTPC STATIONS-ER	0.00	0.00	0.00	0.00	0.00	0.00	75.64	127.58	-51.93	-51.93
STERLITE	76.01	0.00	-76.01	179.68	0.00	-179.68	34.71	14.50	20.21	-235.48

MAITHON POWER LTD	0.00	0.00	0.00	2.31	0.00	-2.31	5.65	7.03	-1.39	-3.70
ADHUNIK POWER LTD	89.89	0.00	-89.89	103.41	0.00	-103.41	4.60	3.95	0.65	-192.65
CHUZACHEN HEP	0.00	0.00	0.00	9.79	0.00	-9.79	0.09	0.25	-0.16	-9.94
RANGIT HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.51	1.01	-0.51	-0.51
GMR KAMALANGA	235.42	0.00	-235.42	8.97	0.00	-8.97	3.26	3.34	-0.08	-244.47
JITPL	185.28	0.00	-185.28	273.22	0.00	-273.22	11.98	9.85	2.13	-456.36
TEESTA HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.13	3.35	-3.22	-3.22
JORETHANG	0.00	0.00	0.00	12.83	0.00	-12.83	1.81	1.27	0.54	-12.29
NEEPCO STATIONS	0.00	0.00	0.00	0.00	0.00	0.00	6.15	13.92	-7.77	-7.77
LOKTAK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.06	-1.06	-1.06
TOTAL	4568.80	4702.07	133.27	2863.63	2863.63	0.00	1511.34	1595.39	-84.05	49.22

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 February, 2016

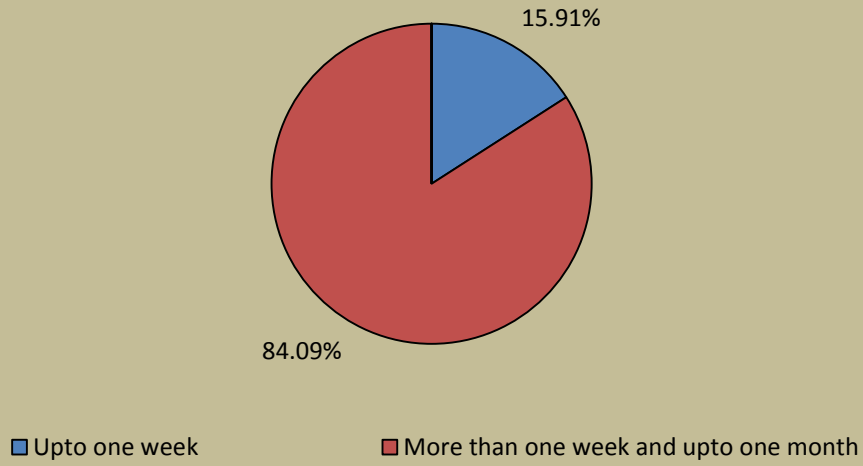


Figure-8: Forward Curve based on Prices of Bilateral Contracts

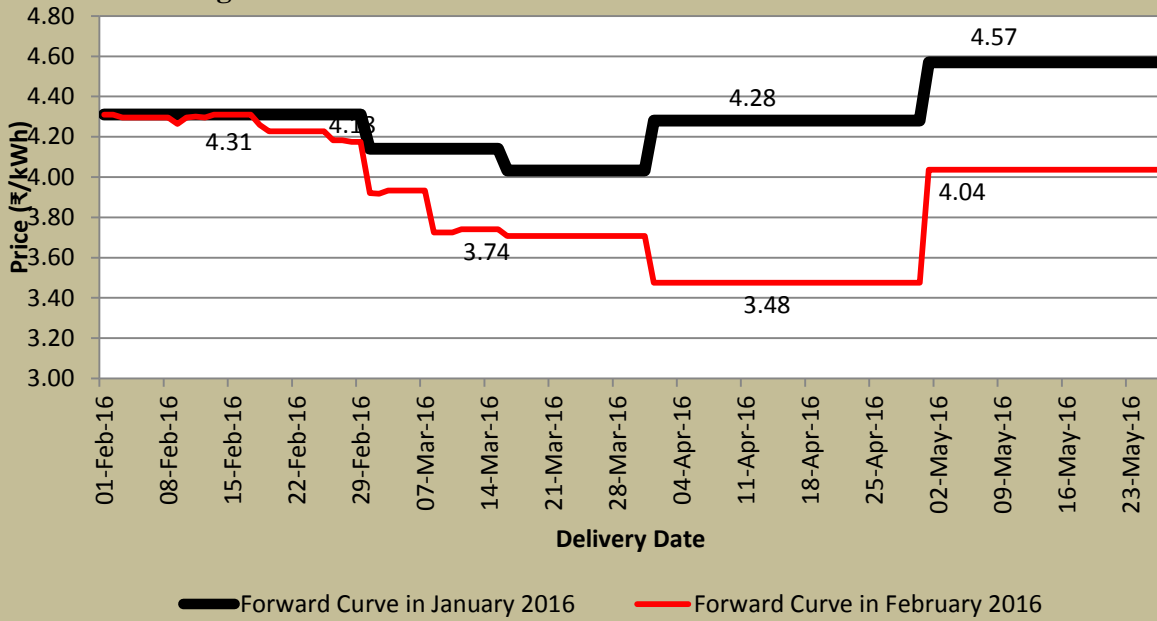


Table-20 : VOLUME AND PRICE OF RENEWABLE ENERGY CERTIFICATES (RECs) TRANSACTIONED THROUGH POWER EXCHANGES, JANUARY 2016					
Sr.No.	Details of REC Transactions	IEX		PXIL	
		Solar	Non-Solar	Solar	Non Solar
A	Volume of Buy Bid	41188	164004	16232	180515
B	Volume of Sell Bid	2495537	7585847	693116	5789152
C	Ratio of Buy Bid to Sell Bid Volume	0.017	0.022	0.023	0.031
D	Market Clearing Volume (MWh)	41188	164004	16232	180515
E	Market Clearing Price (₹/MWh)	3500	1500	3500	1500

Source: IEX and PXIL

Note 1: 1 REC = 1 MWh

Note 2:

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