

Monthly Report on Short-term Transactions of Electricity in India

February, 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 **February, 2016** are as under:

I: Volume of Short-term Transactions of Electricity

During February 2016, total electricity generation excluding generation from renewable and captive power plants in India was 88402.90MUs (Table-1).

Of the total electricity generation, 8529.95MUs (9.65%) was transacted through short-term, comprising of 4092.38MUs (4.63%) through bilateral (through traders and term-ahead contracts on power exchanges and directly between distribution companies), followed by 2814.47MUs (3.18%) through day ahead collective transactions on power exchanges (IEX and PXIL) and 1623.10MUs (1.84%) through DSM (Table-1 & Figure-2).

Of the total short-term transactions, bilateral constitutes 47.98% (33.82% through traders and term-ahead contracts on power exchanges and 14.15% directly between distribution companies) followed by 33% through day ahead collective transactions on power exchanges and 19.03% 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 February, 2016. In February 2016, 21 trading licensees were engaged in short term trading. Top 5 trading licensees had a share of 72.80% 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 0.1407 for the month of February 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 2811.94MUs and 2.54MUs respectively. The volume of total buy bids and sell bids was 3284.54MUs and 5337.87MUs respectively in IEX while the same was 2.90MUs and 60.74MUs 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 25.04MUs and 1.27MUs 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 ₹2.31/kWh, ₹6.54/kWh and ₹3.94/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 ₹4.06/kWh, ₹4.41/kWh and ₹3.64/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 ₹0.20/kWh, ₹5.60/kWh and ₹2.32/kWh respectively in IEX and ₹2.20/kWh, ₹4.50/kWh and ₹2.30/kWh respectively in PXIL (Table-5).

The price of electricity transacted through IEX and PXIL in the term-ahead market was ₹2.73/kWh and ₹2.64/kWh respectively (Table-6 and Table-7).

(iii) Price of electricity transacted through DSM: The average deviation settlement price was ₹1.57/kWh for all India grid. The minimum and maximum deviation settlement prices were ₹0.00/kWh and ₹5.32/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 47.12% of the volume, and these were Haryana, Delhi, Uttar Pradesh, GMR Kamalanga Energy Ltd., and Jindal India Thermal Power Ltd. Top 5 regional entities purchased 50.54% of the volume, and these were Jammu & Kashmir, Telangana, Himachal Pradesh, West Bengal and Rajasthan (Table-9 & 10).

Of the total power exchange transactions, top 5 regional entities sold 43.55% of the volume, and these were Chhattisgarh, Jindal India Thermal Power Ltd., Sterlite Energy Ltd., Jindal Power Ltd. and Madhya Pradesh. Top 5 regional entities purchased 51.22% of the volume, and these were Rajasthan, Chhattisgarh, Bihar, Essar Steel Ltd. and Telangana (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 42.96% of the volume, and these were NTPC Stations (Eastern Region), Gujarat, NTPC Stations (Western Region), Uttar Pradesh and Chhattisgarh (Table-13). Top 5 regional entities overdrew 31.82% of the volume, and these were Rajasthan, Punjab, NTPC Stations (Eastern Region), Uttarakhand and Odisha (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, Madhya Pradesh and Korba West Power Company Ltd.. Top 5 electricity purchasing regional entities were Rajasthan, Telangana, Bihar, Jammu & Kashmir 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 February 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 3.83% and 12.22% of the unconstrained cleared volume respectively. In terms of time, congestion occurred was 60.99% in IEX and 3.95% in PXIL (Table-16).

V: Bilateral Contracts executed by Traders

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

(i) Duration of bilateral contracts: During March, 2016, a total of 32 bilateral contracts (excluding banking/swap contracts) have been executed by traders for the volume of 1547.47MUs. Figure-7 shows the percentage of contracts categorized according to the period of power supply. It can be observed from the figure that 66% of the bilateral contracts were executed for duration of up to one week and 34% of the contracts were executed for duration of more than a week and upto one month.

During the month, 14 banking/swapping bilateral contracts were also executed for the volume of 3.99MUs.

(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 March, 2016 to May, 2016 based on bilateral contracts⁴ executed till March, 2016. Forward curves have been drawn for the contracts executed in March, 2016 and February, 2016 for the purpose of comparison. It is observed that the forward prices from 1st May, 2016 to 31st May,

⁴Excluding Banking/Swapping contracts

2016 were significantly lower for the contracts executed in March, 2016 compared to the contracts executed in February, 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 February, 2016 are shown in Table-20. The market clearing volume of solar RECs transacted on IEX and PXIL were 41658 and 48578 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 232450 and 354051 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 0.021 and 0.036 for IEX and PXIL respectively. For non-solar RECs, the ratio of buy bids to sell bids was 0.039 and 0.048 for IEX and PXIL respectively.

VII: Inferences:

- The percentage of short-term transactions of electricity to total electricity generation was 9.65%.
- Of the total short-term transactions of electricity, 47.98% was transacted through bilateral (through traders and term ahead contracts on power exchanges and directly by distribution companies), followed by 33% through power exchanges and 19.03% through DSM.
- Top 5 trading licensees had a share of 72.80% 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 0.1407, indicating non-concentration of market power.
- The weighted average price of electricity transacted through trading licensees was ₹3.94/kWh. The weighted average prices of electricity transacted through IEX and PXIL were ₹2.32/kWh and ₹2.30/kWh respectively.
- The average price of electricity transacted through DSM was ₹1.57/kWh .
- Top 5 electricity selling regional entities were Jindal India Thermal Power Ltd, Delhi, Thermal Powertech Corporation India Ltd, Madhya Pradesh and Korba West Power Company Ltd.. Top 5 electricity purchasing regional entities were Rajasthan, Telangana, Bihar, Jammu & Kashmir, and Uttarakhand.
- The volume of electricity that could not be cleared due to congestion was 3.83% and 12.22% of the unconstrained cleared volume for IEX and PXIL, respectively. In terms of time, congestion occurred was 60.99% of the time in IEX and 3.95% of the time in PXIL.
- In March 2016, 66% of the bilateral contracts were executed for duration of up to one week and 34% of the contracts were executed for duration of more than a week.
- The forward prices from 1st May, 2016 to 31st May, 2016 were significantly lower for the contracts executed in March, 2016 compared to the contracts executed in February, 2016.

- The market clearing volume of solar RECs transacted on IEX and PXIL were 41658 and 48578 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 232450 and 354051 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), FEBRUARY 2016				
Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	4092.38	47.98	4.63
	(i) Through Traders and PXs	2885.22	33.82	3.26
	(ii) Direct	1207.16	14.15	1.37
2	Through Power Exchanges	2814.47	33.00	3.184
	(i) IEX	2811.94	32.97	3.181
	(ii) PXIL	2.54	0.03	0.003
3	Through DSM	1623.10	19.03	1.84
	Total	8529.95	-	9.65
	Total Generation	88402.90	-	-

Source: NLDC

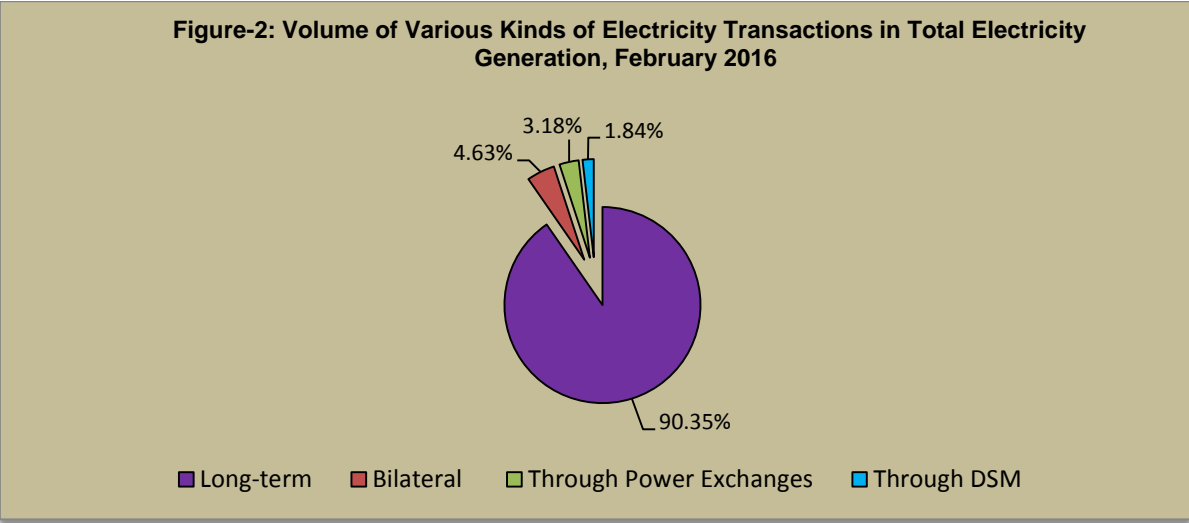
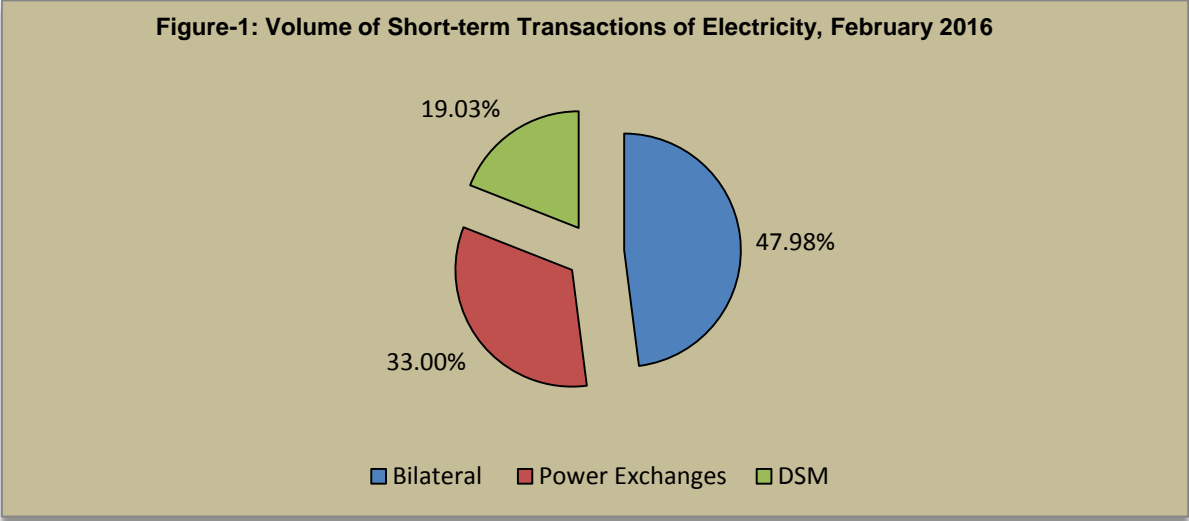


Figure-3: Volume of Short-term Transactions of Electricity, February 2016 (Day-wise)

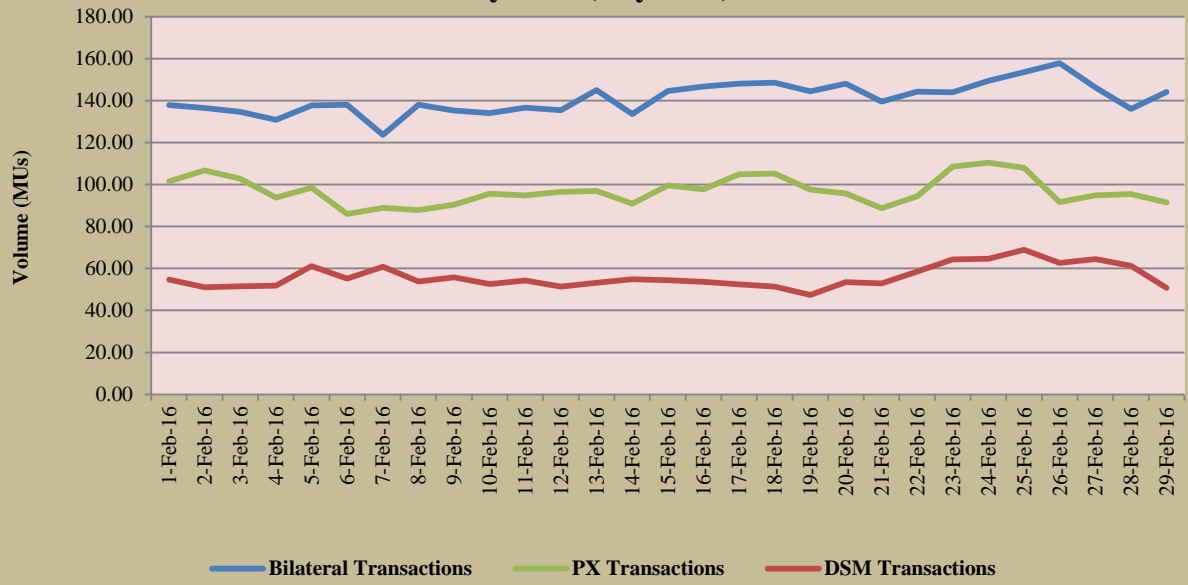


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, FEBRUARY 2016

Sr.No	Name of the Trading Licensee	% Share in total Volume transacted by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd.	27.22	0.0741
2	Mittal Processors (P) Ltd.	14.25	0.0203
3	Tata Power Trading Company (P) Ltd.	12.08	0.0146
4	JSW Power Trading Company Ltd	10.02	0.0100
5	Adani Enterprises Ltd.	9.24	0.0085
6	Manikaran Power Ltd.	9.09	0.0083
7	NTPC Vidyut Vyapar Nigam Ltd.	4.39	0.0019
8	Arunachal Pradesh Power Corporation (P) ltd	4.21	0.0018
9	Knowledge Infrastructure Systems (P) Ltd	2.06	0.0004
10	GMR Energy Trading Ltd.	1.52	0.0002
11	Jaiprakash Associates Ltd.	1.35	0.0002
12	Instinct Infra & Power Ltd.	1.35	0.0002
13	RPG Power Trading Company Ltd.	0.94	0.0001
14	National Energy Trading & Services Ltd.	0.69	0.0000
15	Shree Cement Ltd.	0.49	0.0000
16	Gita Power & Infrastructure Private Limited	0.32	0.0000
17	SN Power Markets Pvt. Ltd.	0.21	0.0000
18	My Home Power Private Ltd.	0.20	0.0000
19	Customized Energy Solutions India (P) Ltd.	0.19	0.0000
20	Essar Electric Power Development Corp. Ltd.	0.14	0.0000
21	Ambitious Power Trading Company Ltd.	0.05	0.0000
TOTAL		100.00%	0.1407
Top 5 trading licensees		72.80%	

Note 1: Volume of electricity transacted by the trading licensees includes bilateral transactions (inter-state & intra-state) and the transactions undertaken through power exchanges.

Note 2: Volume of electricity transacted by Global Energy Ltd is not included.

Source: Information submitted by trading licensees

Figure- 4 : Percentage Share of Electricity Transacted by Trading Licensees, February 2016

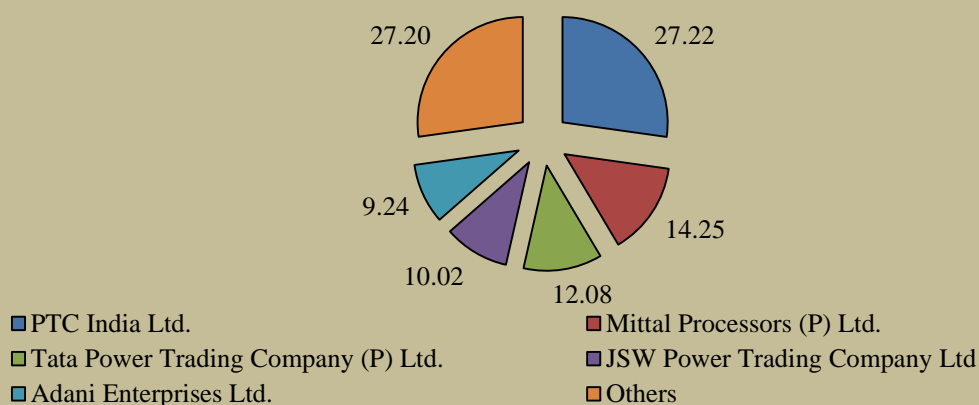


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, FEBRUARY 2016		
Sr.No	Item	Sale Price of Traders (₹/kWh)
1	Minimum	2.31
2	Maximum	6.54
3	Weighted Average	3.94

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), FEBRUARY 2016		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	4.06
2	PEAK	4.41
3	OFF PEAK	3.64

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, FEBRUARY 2016			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	0.20	2.20
2	Maximum	5.60	4.50
3	Weighted Average	2.32	2.30

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, FEBRUARY 2016			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	16.86	2.82
2	Day Ahead Contingency Contracts	8.18	2.54
	Total	25.04	2.73

Source: IEX

Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, FEBRUARY 2016			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	1.27	2.64
	Total	1.27	2.64

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH DSM, FEBRUARY 2016		
Sr.No	Item	Price in All India Grid (₹/kWh)
1	Minimum	0.00
2	Maximum	5.32
3	Average	1.57

Source: NLDC

Figure-5: Price of Short-term Transactions of Electricity, February 2016

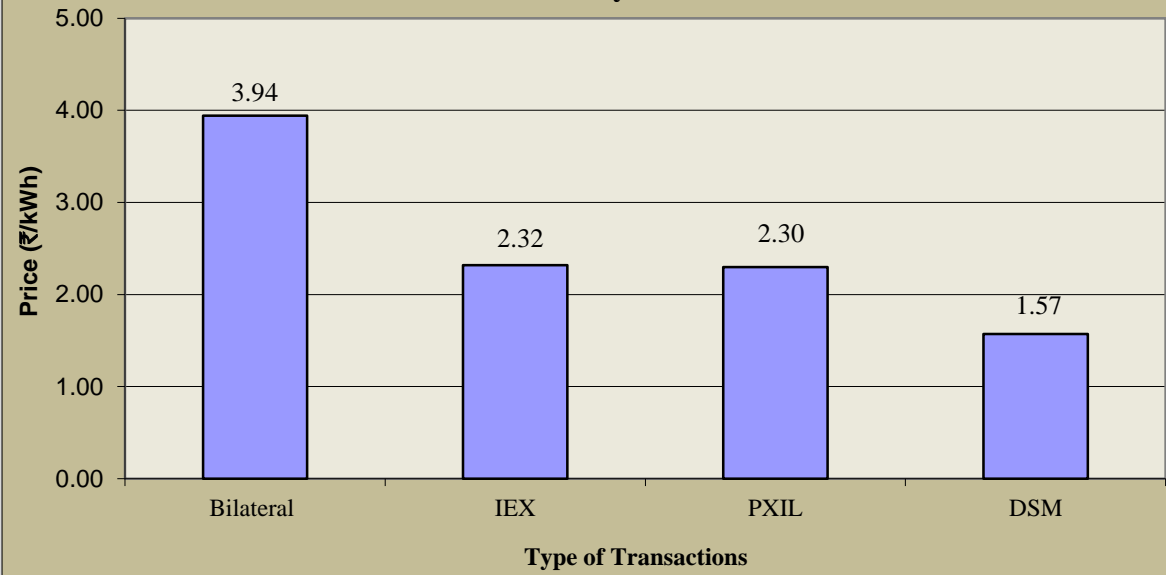


Figure-6: Price of Short-term Transactions of Electricity, February 2016 (Day-wise)

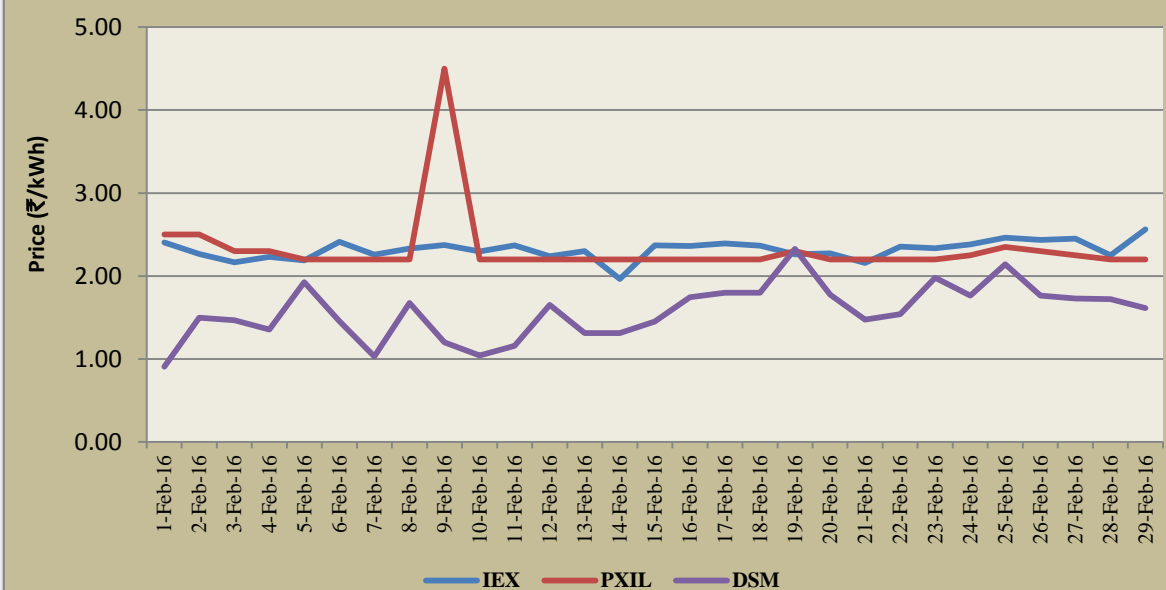


Table-9: VOLUME OF ELECTRICITY SOLD THROUGH BILATERAL, FEBRUARY 2016

Name of the State/UT/Other Regional Entity	Volume of Sale (MUs)	% of Volume
HARYANA	520.70	12.82
DELHI	509.74	12.55
UTTAR PRADESH	340.29	8.38
GMR KAMALANGA	313.15	7.71
JITPL	230.30	5.67
KORBA WEST POWER	199.78	4.92
THERMAL POWERTECH	194.81	4.80
SIMHAPURI	173.22	4.26
JINDAL POWER	145.39	3.58
RAJASTHAN	134.24	3.30
CHHATTISGARH	129.50	3.19
SHREE CEMENT	129.50	3.19
STERLITE	127.62	3.14
LANKO KONDAPALLI	113.70	2.80
PUNJAB	103.15	2.54
WEST BENGAL	96.59	2.38
ADHUNIK POWER LTD	83.43	2.05
MEENAKSHI	77.22	1.90
DVC	67.62	1.66
ANDHRA PRADESH	63.01	1.55
ODISHA	50.77	1.25
HIMACHAL PRADESH	49.54	1.22
MP	49.54	1.22
DB POWER	40.72	1.00
NSPCL	21.60	0.53
JINDAL STAGE-II	18.09	0.45
TELANGANA	14.21	0.35
J & K	12.38	0.30
MAHARASHTRA	12.38	0.30
MEGHALAYA	12.10	0.30
ACBIL	9.57	0.24
CHANDIGARH	6.96	0.17
GUJARAT	6.96	0.17
GMR CHHATTISGARH	3.22	0.08
MANIPUR	1.25	0.03
Total	4062.24	100.00
Volume Sold by top 5 Regional Entities	1914.17	47.12

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

Name of the State/UT/Other Regional Entity	Volume of Purchase (MUs)	% of Volume
J & K	486.36	13.47
TELANGANA	391.47	10.84
HIMACHAL PRADESH	357.98	9.91
WEST BENGAL	342.19	9.47
RAJASTHAN	247.39	6.85
GUJARAT	245.71	6.80
HARYANA	244.44	6.77
BIHAR	208.71	5.78
UTTAR PRADESH	159.59	4.42
UTTARAKHAND	142.69	3.95
KERALA	115.86	3.21
MAHARASHTRA	115.67	3.20
ODISHA	112.99	3.13
JHARKHAND	92.55	2.56
ANDHRA PRADESH	79.89	2.21
TAMIL NADU	79.23	2.19
MEGHALAYA	69.17	1.92
ASSAM	53.21	1.47
MANIPUR	27.07	0.75
DADRA & NAGAR HAVELI	10.09	0.28
GOA	8.30	0.23
DELHI	6.98	0.19
DAMAN AND DIU	4.95	0.14
PUNJAB	3.65	0.10
CHHATTISGARH	3.21	0.09
KARNATAKA	2.34	0.06
TOTAL	3611.69	100.00
Volume Purchased by top 5 Regional Entities	1825.38	50.54

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

Name of the State/UT/Other Regional Entity	Volume of Sale (MUs)	% of Volume
CHHATTISGARH	371.34	12.82
JITPL	362.30	12.51
STERLITE	205.38	7.09
JINDAL POWER	172.61	5.96
MP	149.76	5.17
THERMAL POWERTECH	137.50	4.75
KORBA WEST POWER	130.64	4.51
DELHI	112.72	3.89
DB POWER	86.76	3.00
TRIPURA	84.46	2.92
ADHUNIK POWER LTD	77.45	2.67
MAHARASHTRA	77.32	2.67
GUJARAT	75.05	2.59
HIMACHAL PRADESH	74.32	2.57
SIMHAPURI	60.32	2.08
DCPP	57.66	1.99
KARCHAM WANGTOO	54.71	1.89
SHREE CEMENT	47.67	1.65
RAJASTHAN	44.31	1.53
ACBIL	39.18	1.35
MEENAKSHI	37.42	1.29
JAYPEE NIGRIE	36.47	1.26
GMR CHHATTISGARH	36.01	1.24
HARYANA	29.62	1.02
PUNJAB	27.22	0.94
JINDAL STAGE-II	26.72	0.92
SPECTRUM	26.51	0.92
ASSAM	25.40	0.88
ODISHA	22.83	0.79
DHARIWAL POWER	21.34	0.74
NJPC	20.34	0.70
BALCO	19.83	0.68
J & K	18.49	0.64
ANDHRA PRADESH	16.33	0.56
TELANGANA	16.10	0.56
NHPC STATIONS	12.37	0.43
MANIPUR	12.04	0.42
JORETHANG	11.25	0.39
AD HYDRO	10.62	0.37
DVC	7.36	0.25
KERALA	6.61	0.23
CHUZACHEN HEP	5.74	0.20
WEST BENGAL	5.56	0.19
SIKKIM	5.21	0.18
GOA	5.07	0.17
URI-2	3.06	0.11
MIZORAM	2.58	0.09

CHANDIGARH	2.44	0.08
MEGHALAYA	1.84	0.06
MAITHON POWER LTD	1.59	0.05
MALANA	0.54	0.02
LANCO BUDHIL	0.47	0.02
GMR KAMALANGA	0.27	0.01
Total	2896.69	100.00
Volume sold by top 5 Regional Entities	1261.39	43.55

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

Name of the State/UT/Other Regional Entity	Volume of Purchase (MUs)	% of Volume
RAJASTHAN	442.04	15.74
CHHATTISGARH	304.99	10.86
BIHAR	269.97	9.61
ESSAR STEEL	215.76	7.68
TELANGANA	206.01	7.33
HARYANA	189.43	6.74
PUNJAB	162.98	5.80
UTTARAKHAND	156.53	5.57
KARNATAKA	155.55	5.54
DADRA & NAGAR HAVELI	123.03	4.38
ANDHRA PRADESH	108.05	3.85
WEST BENGAL	74.16	2.64
HIMACHAL PRADESH	50.08	1.78
DELHI	48.33	1.72
MAHARASHTRA	43.15	1.54
GUJARAT	41.71	1.48
KERALA	38.80	1.38
ASSAM	35.70	1.27
DAMAN AND DIU	35.38	1.26
TAMIL NADU	20.58	0.73
MEGHALAYA	16.07	0.57
ODISHA	15.56	0.55
GOA	10.88	0.39
ARUNACHAL PRADESH	10.17	0.36
UTTAR PRADESH	9.08	0.32
NAGALAND	9.04	0.32
J & K	8.81	0.31
JHARKHAND	4.25	0.15
MANIPUR	2.36	0.08
CHANDIGARH	0.55	0.02
TOTAL	2809.00	100.00
Volume purchased by top 5 Regional Entities	1438.77	51.22

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

Name of the State/UT/Other Regional Entity	Volume of Under drawal (MUs)	% of Volume
NTPC STATIONS-ER	187.78	13.03
GUJARAT	133.85	9.29
NTPC STATIONS-WR	106.45	7.39
UTTAR PRADESH	101.66	7.05
CHHATTISGARH	89.51	6.21
TAMIL NADU	65.60	4.55
MP	62.81	4.36
MAHARASHTRA	61.10	4.24
HARYANA	55.61	3.86
NHPC STATIONS	52.94	3.67
PUNJAB	39.16	2.72
DVC	34.10	2.37
BIHAR	33.59	2.33
ANDHRA PRADESH	32.58	2.26
DELHI	30.30	2.10
HIMACHAL PRADESH	29.58	2.05
NTPC STATIONS-NR	29.20	2.03
RAJASTHAN	25.68	1.78
TELANGANA	23.67	1.64
ESSAR STEEL	16.07	1.11
KARNATAKA	15.68	1.09
NTPC STATIONS-SR	11.73	0.81
JHARKHAND	10.66	0.74
NEEPCO STATIONS	9.95	0.69
ODISHA	9.66	0.67
JINDAL POWER	8.46	0.59
SIKKIM	8.15	0.57
ASSAM	7.82	0.54
CGPL	7.41	0.51
WEST BENGAL	7.04	0.49
STERLITE	6.60	0.46
JAYPEE NIGRIE	6.39	0.44
RGPPL(DABHOL)	6.37	0.44
MEGHALAYA	5.94	0.41
JITPL	5.78	0.40
UTTARAKHAND	5.70	0.40
GOA	5.64	0.39
THERMAL POWERTECH	5.55	0.39
MAITHON POWER LTD	5.13	0.36
DADRA & NAGAR HAVELI	4.98	0.35
NJPC	4.62	0.32
KSK MAHANADI	4.41	0.31
CHANDIGARH	4.13	0.29
DCPP	4.12	0.29
BALCO	3.49	0.24
NSPCL	3.31	0.23
TEESTA HEP	3.28	0.23
PONDICHERRY	3.28	0.23

MANIPUR	3.28	0.23
DB POWER	3.14	0.22
MEENAKSHI	2.82	0.20
MB POWER	2.78	0.19
URI-2	2.61	0.18
KERALA	2.58	0.18
LANKO_AMK	2.42	0.17
GMR KAMALANGA	2.41	0.17
KORBA WEST POWER	2.28	0.16
SIMHAPURI	2.25	0.16
ADHUNIK POWER LTD	1.81	0.13
ACBIL	1.77	0.12
RANGIT HEP	1.66	0.12
COASTGEN	1.46	0.10
JORETHANG	1.43	0.10
KARCHAM WANGTOO	1.39	0.10
NAGALAND	1.38	0.10
EMCO	1.23	0.09
TRIPURA	1.21	0.08
DAMAN AND DIU	1.19	0.08
ARUNACHAL PRADESH	0.73	0.05
LOKTAK	0.73	0.05
AD HYDRO	0.66	0.05
GMR CHHATTISGARH	0.42	0.03
MIZORAM	0.33	0.02
SHREE CEMENT	0.30	0.02
MALANA	0.15	0.01
CHUZACHEN HEP	0.14	0.01
DHARIWAL POWER	0.12	0.01
LANCO BUDHIL	0.08	0.01
ADANI HVDC	0.05	0.00
LANKO KONDAPALLI	0.05	0.00
VANDANA VIDYUT	0.03	0.00
Total	1441.44	100.00
Volume Exported by top 5 Regional Entities	619.26	42.96

Table-14: VOLUME OF ELECTRICITY OVER DRAWAL (IMPORTED) THROUGH DSM, FEBRUARY 2016

Name of the State/UT/Other Regional Entity	Volume of Over drawal (MUs)	% of Volume
RAJASTHAN	172.10	10.48
PUNJAB	104.98	6.39
NTPC STATIONS-ER	90.37	5.50
UTTARAKHAND	88.31	5.38
ODISHA	66.99	4.08
NTPC STATIONS-WR	66.86	4.07
WEST BENGAL	57.97	3.53
UTTAR PRADESH	57.31	3.49
HARYANA	57.05	3.47
NTPC STATIONS-NR	54.42	3.31
KARNATAKA	52.57	3.20
BIHAR	48.92	2.98
STERLITE	44.96	2.74
KERALA	43.87	2.67
TELANGANA	39.35	2.40
CHHATTISGARH	30.93	1.88
GUJARAT	29.27	1.78
JHARKHAND	28.42	1.73
ANDHRA PRADESH	27.95	1.70
ASSAM	27.09	1.65
DELHI	24.97	1.52
NTPC STATIONS-SR	24.86	1.51
HIMACHAL PRADESH	24.15	1.47
MAHARASHTRA	22.76	1.39
DVC	22.25	1.35
JITPL	22.04	1.34
TRIPURA	21.92	1.33
ESSAR STEEL	21.44	1.31
BALCO	18.55	1.13
TAMIL NADU	17.33	1.05
MP	17.02	1.04
ARUNACHAL PRADESH	15.41	0.94
GOA	15.05	0.92
CGPL	13.59	0.83
GMR CHHATTISGARH	12.43	0.76
CHANDIGARH	12.08	0.74
MIZORAM	11.01	0.67
NAGALAND	10.77	0.66
ADHUNIK POWER LTD	10.44	0.64
NSPCL	9.93	0.60
KORBA WEST POWER	8.15	0.50
DAMAN AND DIU	7.42	0.45

MAITHON POWER LTD	6.83	0.42
PONDICHERRY	5.61	0.34
SHREE CEMENT	5.56	0.34
NHPC STATIONS	5.51	0.34
MANIPUR	5.43	0.33
JAYPEE NIGRIE	4.37	0.27
JINDAL POWER	4.29	0.26
GMR KAMALANGA	4.17	0.25
THERMAL POWERTECH	4.13	0.25
RGPPPL(DABHOL)	3.15	0.19
KARCHAM WANGTOO	2.81	0.17
DHARIWAL POWER	2.80	0.17
ACBIL	2.65	0.16
MEGHALAYA	2.65	0.16
DGEN MEGA POWER	2.56	0.16
NEEPCO STATIONS	2.47	0.15
LANKO KONDAPALLI	2.32	0.14
DADRA & NAGAR HAVELI	2.11	0.13
JORETHANG	2.10	0.13
NJPC	2.05	0.13
DCPP	1.93	0.12
COASTGEN	1.92	0.12
EMCO	1.75	0.11
SIKKIM	1.74	0.11
MEENAKSHI	1.57	0.10
SIMHAPURI	1.26	0.08
KSK MAHANADI	1.07	0.06
ESSAR POWER	0.92	0.06
LANKO_AMK	0.89	0.05
MB POWER	0.59	0.04
RANGIT HEP	0.52	0.03
URI-2	0.50	0.03
LOKTAK	0.38	0.02
AD HYDRO	0.34	0.02
TEESTA HEP	0.15	0.01
MALANA	0.15	0.01
LANCO BUDHIL	0.06	0.00
CHUZACHEN HEP	0.06	0.00
DB POWER	0.06	0.00
ADANI HVDC	0.03	0.00
TOTAL	1642.71	100.00
Volume Imported by top 5 Regional Entities	522.76	31.82

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

Sr.No.	Name of the State/UT/Other Regional Entity	Total volume of net short-term transactions of electricity*
1	RAJASTHAN	657.30
2	TELANGANA	582.85
3	BIHAR	494.01
4	J & K	464.30
5	UTTARAKHAND	381.83
6	WEST BENGAL	365.11
7	HIMACHAL PRADESH	278.76
8	ESSAR STEEL	221.13
9	KARNATAKA	194.79
10	KERALA	189.34
11	DADRA & NAGAR HAVELI	130.26
12	JHARKHAND	114.57
13	ODISHA	112.29
14	GUJARAT	107.79
15	ANDHRA PRADESH	103.97
16	PUNJAB	102.08
17	ASSAM	82.79
18	MEGHALAYA	68.00
19	TAMIL NADU	51.54
20	DAMAN AND DIU	46.56
21	NTPC STATIONS-NR	25.22
22	ARUNACHAL PRADESH	24.85
23	GOA	23.52
24	NAGALAND	18.42
25	MANIPUR	18.28
26	NTPC STATIONS-SR	13.13
27	MIZORAM	8.11
28	CGPL	6.18
29	DGEN MEGA POWER	2.56
30	PONDICHERRY	2.33
31	ESSAR POWER	0.92
32	EMCO	0.52
33	COASTGEN	0.46
34	MAITHON POWER LTD	0.11
35	ADANI HVDC	-0.02
36	VANDANA VIDYUT	-0.03
37	LOKTAK	-0.35
38	LANCO BUDHIL	-0.49
39	MALANA	-0.54
40	CHANDIGARH	-0.90
41	RANGIT HEP	-1.14
42	LANKO_AMK	-1.53
43	MB POWER	-2.19
44	TEESTA HEP	-3.13
45	RGPPL(DABHOL)	-3.21
46	KSK MAHANADI	-3.34
47	BALCO	-4.77
48	URI-2	-5.17

49	CHUZACHEN HEP	-5.82
50	NEEPCO STATIONS	-7.48
51	JORETHANG	-10.58
52	AD HYDRO	-10.94
53	SIKKIM	-11.63
54	NSPCL	-14.98
55	DHARIWAL POWER	-18.66
56	NJPC	-22.90
57	SPECTRUM	-26.51
58	GMR CHHATTISGARH	-27.23
59	JAYPEE NIGRIE	-38.49
60	NTPC STATIONS-WR	-39.60
61	JINDAL STAGE-II	-44.81
62	ACBIL	-47.88
63	KARCHAM WANGTOO	-53.29
64	NHPC STATIONS	-59.80
65	DCPP	-59.85
66	TRIPURA	-63.75
67	DVC	-86.84
68	MAHARASHTRA	-96.03
69	NTPC STATIONS-ER	-97.41
70	LANKO KONDAPALLI	-111.42
71	HARYANA	-115.01
72	MEENAKSHI	-115.88
73	DB POWER	-130.56
74	ADHUNIK POWER LTD	-152.25
75	SHREE CEMENT	-171.91
76	CHHATTISGARH	-205.90
77	UTTAR PRADESH	-215.97
78	SIMHAPURI	-234.52
79	STERLITE	-294.65
80	GMR KAMALANGA	-311.65
81	JINDAL POWER	-322.17
82	KORBA WEST POWER	-324.55
83	MP	-325.06
84	THERMAL POWERTECH	-333.73
85	DELHI	-572.48
86	JITPL	-576.34
* 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, FEBRUARY 2016			
	Details of Congestion	IEX	PXIL
A	Unconstrained Cleared Volume* (MUs)	2930.02	2.89
B	Actual Cleared Volume and hence scheduled (MUs)	2817.89	2.54
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	112.13	0.35
D	Volume of electricity that could not be cleared as % to Unconstrained Cleared Volume	3.83%	12.22%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	60.99%	3.95%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	9.07%	24.55%
	6.00 - 12.00 hours	35.98%	30.91%
	12.00 - 18.00 hours	34.33%	32.73%
	18.00 - 24.00 hours	20.61%	11.82%
<i>* This power would have been scheduled had there been no congestion.</i>			
<i>Source: IEX & PXIL & NLDC</i>			

Table-17: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA (MUs) (DAY-WISE), FEBRUARY 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-Feb-16	102.39	35.42	101.39	0.10	54.73	3003.62
2-Feb-16	103.46	33.03	106.71	0.08	51.08	3026.39
3-Feb-16	100.01	34.61	102.62	0.09	51.57	3041.19
4-Feb-16	90.64	40.18	93.62	0.07	51.82	3051.38
5-Feb-16	99.08	38.68	98.33	0.09	61.17	3046.57
6-Feb-16	100.66	37.37	85.97	0.08	55.20	3039.00
7-Feb-16	90.78	32.89	88.71	0.09	60.80	2956.25
8-Feb-16	100.24	37.82	87.70	0.09	53.84	3008.61
9-Feb-16	97.36	37.83	90.30	0.06	55.71	3053.93
10-Feb-16	96.08	37.90	95.53	0.08	52.59	3057.32
11-Feb-16	97.37	39.22	94.79	0.08	54.24	3051.25
12-Feb-16	96.84	38.58	96.42	0.10	51.31	3042.13
13-Feb-16	103.86	41.16	96.86	0.10	53.16	3023.00
14-Feb-16	96.61	37.04	90.77	0.11	54.79	2944.35
15-Feb-16	102.42	42.12	99.38	0.10	54.38	3014.00
16-Feb-16	101.31	45.45	97.56	0.10	53.58	3006.52
17-Feb-16	100.68	47.34	104.84	0.09	52.49	3018.58
18-Feb-16	101.35	47.19	105.07	0.09	51.31	3021.48
19-Feb-16	102.25	42.15	97.46	0.10	47.37	3089.27
20-Feb-16	101.94	46.05	95.62	0.09	53.50	3085.00
21-Feb-16	98.39	41.06	88.56	0.10	52.83	2979.23
22-Feb-16	101.20	42.98	94.32	0.03	58.45	3088.23
23-Feb-16	98.70	45.30	108.47	0.10	64.30	3116.51
24-Feb-16	103.03	46.47	110.24	0.10	64.68	3130.41
25-Feb-16	103.49	50.08	107.84	0.10	68.93	3148.28
26-Feb-16	106.58	51.25	91.53	0.04	62.68	3133.78
27-Feb-16	97.35	48.87	94.74	0.06	64.54	3096.90
28-Feb-16	92.75	43.30	95.28	0.09	61.32	3019.72
29-Feb-16	98.37	45.78	91.31	0.11	50.72	3110.00
Total	2885.22	1207.16	2811.94	2.54	1623.10	88402.90

Source: NLDC

* Gross Electricity Generation excluding electricity generation from renewables and captive power plants.

** The volume of bilateral through PXs represents the volume through term-ahead contracts.

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

Table-18: PRICE OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (₹/kWh), FEBRUARY 2016 (DAY-WISE)									
Market Segment	Day ahead market of IEX			Day ahead market of PXIL			Under Draw/Over Draw 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-Feb-16	1.60	3.33	2.41	2.50	2.50	2.50	0.00	3.45	0.91
2-Feb-16	0.80	4.33	2.27	2.50	2.50	2.50	0.00	3.45	1.50
3-Feb-16	0.80	4.60	2.17	2.28	2.30	2.30	0.00	3.45	1.47
4-Feb-16	0.50	5.60	2.23	2.30	2.30	2.30	0.00	3.24	1.35
5-Feb-16	0.80	4.50	2.19	2.20	2.20	2.20	0.00	3.45	1.93
6-Feb-16	0.80	4.55	2.41	2.20	2.20	2.20	0.00	3.24	1.46
7-Feb-16	0.50	4.91	2.26	2.20	2.20	2.20	0.00	2.82	1.03
8-Feb-16	0.70	5.00	2.33	2.20	2.20	2.20	0.00	5.32	1.68
9-Feb-16	0.80	4.75	2.37	4.50	4.50	4.50	0.00	3.45	1.20
10-Feb-16	0.20	3.99	2.30	2.20	2.20	2.20	0.00	3.24	1.04
11-Feb-16	1.30	4.50	2.37	2.20	2.20	2.20	0.00	2.41	1.16
12-Feb-16	1.55	3.74	2.24	2.20	2.20	2.20	0.00	3.45	1.65
13-Feb-16	1.78	3.50	2.30	2.20	2.20	2.20	0.00	3.24	1.31
14-Feb-16	0.80	3.50	1.97	2.20	2.20	2.20	0.00	3.45	1.31
15-Feb-16	1.74	3.74	2.37	2.20	2.20	2.20	0.00	3.24	1.45
16-Feb-16	1.75	3.80	2.36	2.20	2.20	2.20	0.00	3.45	1.74
17-Feb-16	0.80	3.75	2.39	2.20	2.20	2.20	0.00	3.45	1.80
18-Feb-16	1.89	4.10	2.37	2.20	2.20	2.20	0.00	3.45	1.80
19-Feb-16	1.63	4.25	2.26	2.30	2.30	2.30	0.71	3.45	2.33
20-Feb-16	1.89	4.25	2.27	2.20	2.20	2.20	0.00	3.45	1.78
21-Feb-16	1.00	3.30	2.16	2.20	2.20	2.20	0.00	3.45	1.48
22-Feb-16	0.80	4.71	2.35	2.20	2.20	2.20	0.00	3.45	1.54
23-Feb-16	1.90	4.00	2.33	2.20	2.20	2.20	0.00	5.32	1.98
24-Feb-16	1.89	3.50	2.38	2.25	2.25	2.25	0.00	3.45	1.77
25-Feb-16	1.89	4.50	2.46	2.35	2.35	2.35	0.00	4.91	2.14
26-Feb-16	0.29	4.70	2.43	2.30	2.30	2.30	0.00	3.24	1.76
27-Feb-16	0.50	5.20	2.45	2.25	2.25	2.25	0.00	3.45	1.73
28-Feb-16	0.80	3.68	2.25	2.20	2.20	2.20	0.00	3.45	1.72
29-Feb-16	1.38	3.60	2.56	2.20	2.20	2.20	0.00	3.24	1.61
	0.20#	5.60#	2.32	2.20#	4.50#	2.30	0.00#	5.32#	1.57**

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),
FEBRUARY 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	103.15	3.65	-99.50	27.22	162.98	135.76	104.98	39.16	65.82	102.08
HARYANA	520.70	244.44	-276.26	29.62	189.43	159.81	57.05	55.61	1.44	-115.01
RAJASTHAN	134.24	247.39	113.15	44.31	442.04	397.72	172.10	25.68	146.42	657.30
DELHI	509.74	6.98	-502.76	112.72	48.33	-64.39	24.97	30.30	-5.33	-572.48
UTTAR PRADESH	340.29	159.59	-180.69	0.00	9.08	9.08	57.31	101.66	-44.35	-215.97
UTTARAKHAND	0.00	142.69	142.69	0.00	156.53	156.53	88.31	5.70	82.61	381.83
HIMACHAL PRADESH	49.54	357.98	308.43	74.32	50.08	-24.24	24.15	29.58	-5.43	278.76
J & K	12.38	486.36	473.99	18.49	8.81	-9.68	0.00	0.00	0.00	464.30
CHANDIGARH	6.96	0.00	-6.96	2.44	0.55	-1.89	12.08	4.13	7.95	-0.90
MP	129.50	0.00	-129.50	149.76	0.00	-149.76	17.02	62.81	-45.79	-325.06
MAHARASHTRA	139.20	115.67	-23.53	77.32	43.15	-34.17	22.76	61.10	-38.34	-96.03
GUJARAT	0.00	245.71	245.71	75.05	41.71	-33.34	29.27	133.85	-104.58	107.79
CHHATTISGARH	84.17	3.21	-80.96	371.34	304.99	-66.35	30.93	89.51	-58.59	-205.90
DAMAN AND DIU	0.00	4.95	4.95	0.00	35.38	35.38	7.42	1.19	6.24	46.56
DADRA & NAGAR HAVELI	0.00	10.09	10.09	0.00	123.03	123.03	2.11	4.98	-2.87	130.26
ANDHRA PRADESH	63.01	79.89	16.88	16.33	108.05	91.72	27.95	32.58	-4.62	103.97
KARNATAKA	0.00	2.34	2.34	0.00	155.55	155.55	52.57	15.68	36.89	194.79
KERALA	0.00	115.86	115.86	6.61	38.80	32.19	43.87	2.58	41.29	189.34
TAMIL NADU	0.00	79.23	79.23	0.00	20.58	20.58	17.33	65.60	-48.27	51.54
PONDICHERRY	0.00	0.00	0.00	0.00	0.00	0.00	5.61	3.28	2.33	2.33
GOA	0.00	8.30	8.30	5.07	10.88	5.81	15.05	5.64	9.41	23.52
TELANGANA	14.21	391.47	377.26	16.10	206.01	189.91	39.35	23.67	15.68	582.85
WEST BENGAL	96.59	342.19	245.59	5.56	74.16	68.60	57.97	7.04	50.92	365.11
ODISHA	50.77	112.99	62.22	22.83	15.56	-7.27	66.99	9.66	57.33	112.29
BIHAR	0.00	208.71	208.71	0.00	269.97	269.97	48.92	33.59	15.34	494.01
JHARKHAND	0.00	92.55	92.55	0.00	4.25	4.25	28.42	10.66	17.76	114.57
SIKKIM	0.00	0.00	0.00	5.21	0.00	-5.21	1.74	8.15	-6.41	-11.63
DVC	67.62	0.00	-67.62	7.36	0.00	-7.36	22.25	34.10	-11.85	-86.84
ARUNACHAL PRADESH	0.00	0.00	0.00	0.00	10.17	10.17	15.41	0.73	14.68	24.85
ASSAM	0.00	53.21	53.21	25.40	35.70	10.31	27.09	7.82	19.27	82.79
MANIPUR	1.25	27.07	25.82	12.04	2.36	-9.68	5.43	3.28	2.15	18.28
MEGHALAYA	12.10	69.17	57.06	1.84	16.07	14.23	2.65	5.94	-3.29	68.00
MIZORAM	0.00	0.00	0.00	2.58	0.00	-2.58	11.01	0.33	10.68	8.11
NAGALAND	0.00	0.00	0.00	0.00	9.04	9.04	10.77	1.38	9.39	18.42
TRIPURA	0.00	0.00	0.00	84.46	0.00	-84.46	21.92	1.21	20.71	-63.75
NTPC STATIONS-NR	0.00	0.00	0.00	0.00	0.00	0.00	54.42	29.20	25.22	25.22
NHPC STATIONS	0.00	0.00	0.00	12.37	0.00	-12.37	5.51	52.94	-47.43	-59.80

NJPC	0.00	0.00	0.00	20.34	0.00	-20.34	2.05	4.62	-2.56	-22.90
AD HYDRO	0.00	0.00	0.00	10.62	0.00	-10.62	0.34	0.66	-0.32	-10.94
KARCHAM WANGTOO	0.00	0.00	0.00	54.71	0.00	-54.71	2.81	1.39	1.41	-53.29
SHREE CEMENT	129.50	0.00	-129.50	47.67	0.00	-47.67	5.56	0.30	5.26	-171.91
LANCO BUDHIL	0.00	0.00	0.00	0.47	0.00	-0.47	0.06	0.08	-0.02	-0.49
ADANI HVDC	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.05	-0.02	-0.02
MALANA	0.00	0.00	0.00	0.54	0.00	-0.54	0.15	0.15	0.00	-0.54
URI-2	0.00	0.00	0.00	3.06	0.00	-3.06	0.50	2.61	-2.11	-5.17
NTPC STATIONS-WR	0.00	0.00	0.00	0.00	0.00	0.00	66.86	106.45	-39.60	-39.60
JINDAL POWER	145.39	0.00	-145.39	172.61	0.00	-172.61	4.29	8.46	-4.17	-322.17
LANKO_AMK	0.00	0.00	0.00	0.00	0.00	0.00	0.89	2.42	-1.53	-1.53
NSPCL	21.60	0.00	-21.60	0.00	0.00	0.00	9.93	3.31	6.62	-14.98
ACBIL	9.57	0.00	-9.57	39.18	0.00	-39.18	2.65	1.77	0.88	-47.88
BALCO	0.00	0.00	0.00	19.83	0.00	-19.83	18.55	3.49	15.06	-4.77
RGPPL(DABHOL)	0.00	0.00	0.00	0.00	0.00	0.00	3.15	6.37	-3.21	-3.21
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	13.59	7.41	6.18	6.18
DCPP	0.00	0.00	0.00	57.66	0.00	-57.66	1.93	4.12	-2.19	-59.85
EMCO	0.00	0.00	0.00	0.00	0.00	0.00	1.75	1.23	0.52	0.52
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	0.00	0.00	0.00	215.76	215.76	21.44	16.07	5.37	221.13
KSK MAHANADI	0.00	0.00	0.00	0.00	0.00	0.00	1.07	4.41	-3.34	-3.34
ESSAR POWER	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.00	0.92	0.92
JINDAL STAGE-II	18.09	0.00	-18.09	26.72	0.00	-26.72	0.00	0.00	0.00	-44.81
DB POWER	40.72	0.00	-40.72	86.76	0.00	-86.76	0.06	3.14	-3.09	-130.56
DHARIWAL POWER	0.00	0.00	0.00	21.34	0.00	-21.34	2.80	0.12	2.68	-18.66
JAYPEE NIGRIE	0.00	0.00	0.00	36.47	0.00	-36.47	4.37	6.39	-2.02	-38.49
DGEN MEGA POWER	0.00	0.00	0.00	0.00	0.00	0.00	2.56	0.00	2.56	2.56
GMR CHHATTISGARH	3.22	0.00	-3.22	36.01	0.00	-36.01	12.43	0.42	12.01	-27.23
KORBA WEST POWER	199.78	0.00	-199.78	130.64	0.00	-130.64	8.15	2.28	5.87	-324.55
MB POWER	0.00	0.00	0.00	0.00	0.00	0.00	0.59	2.78	-2.19	-2.19
SPECTRUM	0.00	0.00	0.00	26.51	0.00	-26.51	0.00	0.00	0.00	-26.51
NTPC STATIONS-SR	0.00	0.00	0.00	0.00	0.00	0.00	24.86	11.73	13.13	13.13
LANKO KONDAPALLI	113.70	0.00	-113.70	0.00	0.00	0.00	2.32	0.05	2.28	-111.42
SIMHAPURI	173.22	0.00	-173.22	60.32	0.00	-60.32	1.26	2.25	-0.98	-234.52
MEENAKSHI	77.22	0.00	-77.22	37.42	0.00	-37.42	1.57	2.82	-1.25	-115.88
COASTGEN	0.00	0.00	0.00	0.00	0.00	0.00	1.92	1.46	0.46	0.46
THERMAL POWERTECH	194.81	0.00	-194.81	137.50	0.00	-137.50	4.13	5.55	-1.42	-333.73
NTPC STATIONS-ER	0.00	0.00	0.00	0.00	0.00	0.00	90.37	187.78	-97.41	-97.41
STERLITE	127.62	0.00	-127.62	205.38	0.00	-205.38	44.96	6.60	38.35	-294.65
MAITHON POWER LTD	0.00	0.00	0.00	1.59	0.00	-1.59	6.83	5.13	1.70	0.11
ADHUNIK POWER LTD	83.43	0.00	-83.43	77.45	0.00	-77.45	10.44	1.81	8.63	-152.25

CHUZACHEN HEP	0.00	0.00	0.00	5.74	0.00	-5.74	0.06	0.14	-0.09	-5.82
RANGIT HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.52	1.66	-1.14	-1.14
GMR KAMALANGA	313.15	0.00	-313.15	0.27	0.00	-0.27	4.17	2.41	1.77	-311.65
JITPL	230.30	0.00	-230.30	362.30	0.00	-362.30	22.04	5.78	16.26	-576.34
TEESTA HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.15	3.28	-3.13	-3.13
JORETHANG	0.00	0.00	0.00	11.25	0.00	-11.25	2.10	1.43	0.67	-10.58
NEEPCO STATIONS	0.00	0.00	0.00	0.00	0.00	0.00	2.47	9.95	-7.48	-7.48
LOKTAK	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.73	-0.35	-0.35
TOTAL	4216.73	3611.69	-605.04	2896.69	2809.00	-87.70	1642.71	1441.44	201.27	-491.47

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 March, 2016

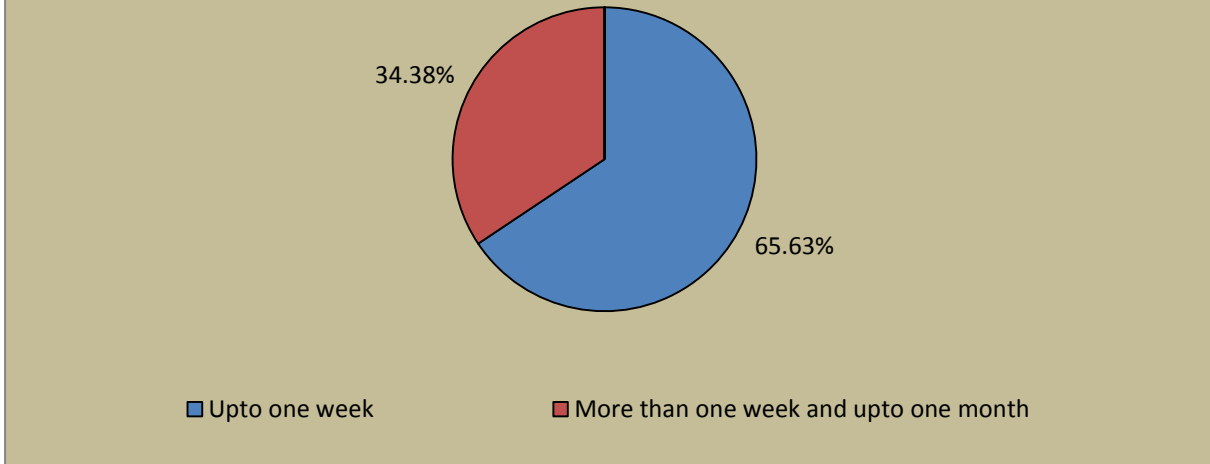


Figure-8: Forward Curve based on Prices of Bilateral Contracts

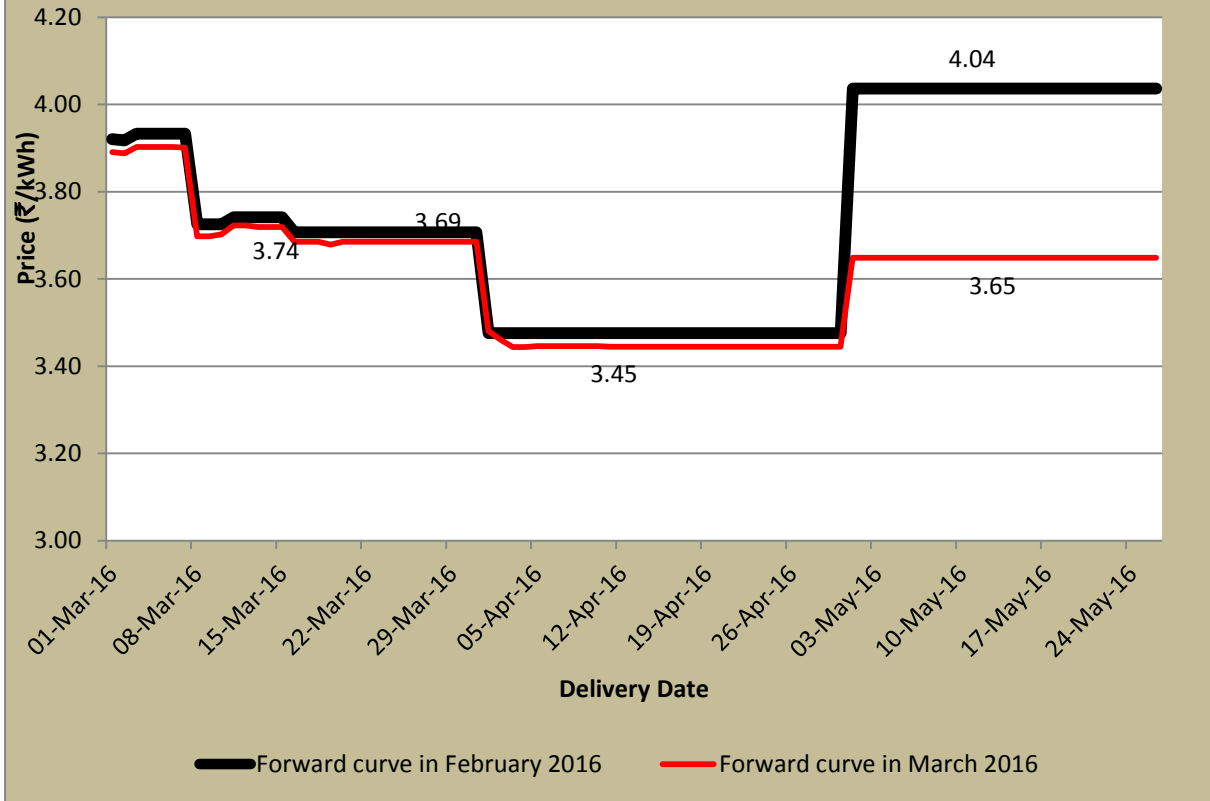


Table-20 : VOLUME AND PRICE OF RENEWABLE ENERGY CERTIFICATES (RECs) TRANSACTIONED THROUGH POWER EXCHANGES, FEBRUARY 2016					
Sr.No.	Details of REC Transactions	IEX		PXIL	
		Solar	Non-Solar	Solar	Non Solar
A	Volume of Buy Bid	41658	232450	48578	354051
B	Volume of Sell Bid	1943383	5981626	1355443	7447818
C	Ratio of Buy Bid to Sell Bid Volume	0.021	0.039	0.036	0.048
D	Market Clearing Volume (MWh)	41658	232450	48578	354051
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>