

Monthly Report on Short-term Transactions of Electricity in India

March, 2017



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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	ChuzachenHydro 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
DOYANG HEP	DoyangHydro Electric Project
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
ILF&S	Infrastructure Leasing & Financial Services Limited
J&K	Jammu & Kashmir
JAYPEE NIGRIE	JaypeeNigrie 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	JaypeeKarcham Hydro Corporation Limited
KORBA WEST POWER	Korba West Power Company Limited
KSK MAHANADI	KSK Mahanadi Power Ltd
LANKO BUDHIL	LancoBudhil Hydro Power Private Limited
LANKOAMK	LancoAmarkantak Power Private Limited
LANKOKONDAPALLY	LancoKondapally Power Private Limited
LOKTAK	Loktak Power Project
MALANA	Malana Hydroelectric Plant
Maruti Coal	Maruti Clean Coal and Power Limited
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
NLC	Neyveli Lignite Corporation Limited
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
NVVN	NTPC Vidyut Vyapar Nigam Limited
ONGC Platana	ONGC Tripura Power Company
OTC	Over The Counter
PX	Power Exchange
PXIL	Power Exchange India Limited
RANGIT HEP	RangitHydro electric power project
REC	Renewable Energy Certificate
RGPPL	Ratnagiri Gas and Power Private Limited
RLDC	Regional Load Despatch Centre
RTC	Round The Clock
Sasan UMPP	Sasan Ultra Mega Power Project
SHREE CEMENT	Shree Cement Limited
SIMHAPURI	Simhapuri Energy Private 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 **March, 2017** are as under:

I: Volume of Short-term Transactions of Electricity

During March 2017, total electricity generation excluding generation from renewable and captive power plants in India was 101798.42 MUs (Table-1).

Of the total electricity generation, 9304.78 MUs (9.14%) was transacted through short-term, comprising of 3714.60 MUs (3.65%) through bilateral (through traders and term-ahead contracts on power exchanges and directly between distribution companies), followed by 3421.16 MUs (3.36%) through day ahead collective transactions on power exchanges (IEX and PXIL) and 2169.01 MUs (2.13%) through DSM (Table-1 & Figure-2).

Of the total short-term transactions, bilateral constitutes 39.92% (23.29% through traders and term-ahead contracts on power exchanges and 16.63% directly between distribution companies) followed by 36.77% through day ahead collective transactions on power exchanges and 23.31% 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 35 trading licensees as on March, 2017. In March, 2017, 21 trading licensees were engaged in short term trading. Top 5 trading licensees had a share of 72.22% in the total volume traded by all the licensees. These are PTC India Ltd., NTPC Vidyut Vyapar Nigam Ltd., Mittal Processors (P) Ltd., Manikaran Power 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 decrease in competition and 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 0.1634 for the month of March, 2017, which indicates moderate concentration of market power (Table-2).

The volume of electricity transacted through IEX and PXIL in the day ahead market was 3364.41 MUs and 56.76 MUs respectively. The volume of total buy bids and sell bids was 4322.55 MUs and 6206.30 MUs respectively in IEX while the same was 81.22 MUs and 138.94 MUs respectively in PXIL. The variation in the volume of buy bids and sell bids placed through power exchanges shows variation in the demand and supply position.

The volume of electricity transacted through IEX and PXIL in the term-ahead market was 65.87 MUs and 12.49 MUs respectively (Table-6 & Table-7).

II: Price of Short-term Transactions of Electricity

(i) *Price of electricity transacted through Traders:* The minimum, maximum and weighted average sale prices have been computed for the electricity transacted through traders and the sale prices were ₹2.00/kWh, ₹4.98/kWh and ₹3.52/kWh respectively (Table-3). The weighted average sale prices were also computed for the transactions during

Round the Clock (RTC), Peak and Off-peak periods separately, and the sale prices were ₹3.65/kWh, ₹3.04/kWh, and ₹2.78/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 ₹0.70/kWh, ₹7.18/kWh and ₹2.65/kWh respectively in IEX and ₹1.02/kWh, ₹3.41/kWh and ₹2.80/kWh respectively in PXIL (Table-5).

The price of electricity transacted through IEX and PXIL in the term-ahead market was ₹3.47/kWh and ₹3.20/kWh respectively (Table-6 and Table-7).

(iii) Price of electricity transacted through DSM: The average deviation settlement price was ₹1.93/kWh. The minimum and maximum deviation settlement prices were ₹0.00/kWh and ₹6.36/kWh respectively (Table-8).

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

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

Of the total bilateral transactions, top 5 regional entities sold 65.87% of the volume, and these were Sikkim, Meghalaya, Damodar Valley Corporation, Pondicherry and Goa. Top 5 regional entities purchased 60.87% of the volume, and these were Sikkim, Goa, Damodar Valley Corporation, Uttarakhand and Himachal Pradesh (Table-9 & 10).

Of the total power exchange transactions, top 5 regional entities sold 37.77% of the volume, and these were Madhya Pradesh, Chhattisgarh, Diligent Power Pvt. Ltd., Korba West Power Company Ltd. and Teesta Stage 3. Top 5 regional entities purchased 56.88% of the volume, and these were Gujarat, Maharashtra, West Bengal, Rajasthan and Haryana (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 34.72% of the volume, and these were NTPC Stations (WR), Tamil Nadu, Maharashtra, Punjab and National Hydro Electric Power Corporation Ltd. Stations (Table-13). Top 5 regional entities overdrew 27.61% of the volume, and these were Uttar Pradesh, NTPC Stations (NR), Rajasthan, NTPC Stations (WR) and West Bengal (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 Meghalaya, Madhya Pradesh, Diligent Power Pvt. Ltd., Korba West Power Company Ltd. and Teesta Stage 3. Top 5 electricity purchasing regional entities were Sikkim, Gujarat, West Bengal, Karnataka and Rajasthan.

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 March, 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 difference between

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.

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 4.38% and 6.92% of the unconstrained cleared volume respectively. In terms of time, congestion occurred was 59.17% in IEX and 19.32% in PXIL (Table-16).

V: Bilateral Contracts executed by Traders

In addition to the analysis on short-term transactions of electricity in March, 2017, this section covers an analysis of bilateral contracts executed in April, 2017.

(i) Duration of bilateral contracts: During April, 2017, a total of 127 bilateral contracts (excluding banking/swap contracts) have been executed by traders for the volume of 2045.22 MUs. Figure-7 shows the percentage of contracts categorized according to the period of power supply. It can be observed from the figure that 71.7% of the bilateral contracts were executed for duration of up to one week, 25.2% of the contracts were executed for duration of more than a week and up to one month, 2.4% of the bilateral contracts were executed for duration for more than one month and upto 3 months, and 0.8% of the bilateral contracts were executed for duration for more than three months and upto 12 months.

During the month, 25 banking/swapping bilateral contracts were also executed for the volume of 573.98 MUs.

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

Figure-8 represents the forward curve of electricity sale prices for the period from 1st April, 2017 to 30th July, 2017 based on the bilateral contracts⁴ executed till April, 2017. Forward curves have been drawn for the contracts executed in March, 2017 and April, 2017 for the purpose of comparison. It is observed that forward contract prices are higher for the contracts executed in April, 2017 compared to the contracts executed in March, 2017 during the entire period.

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 March, 2017 are shown in Table-20. The market clearing volume of solar RECs transacted on IEX and PXIL were 112445 and 31177 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 572357 and 316346 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 about the variation in demand for both solar and non-solar RECs. For Solar RECs, the ratio of buy bids to sell bids was 0.029 and 0.027 for IEX and PXIL respectively. For non-solar RECs, the ratio of buy bids to sell bids was 0.061 and 0.097 for IEX and PXIL respectively.

⁴Excluding Banking/Swapping contracts

VII: Inferences:

- The percentage of short-term transactions of electricity to total electricity generation was 9.14%.
- Of the total short-term transactions of electricity, 39.92% was transacted through bilateral (through traders and term ahead contracts on power exchanges and directly by distribution companies), followed by 36.77% through power exchanges and 23.31% through DSM.
- Top 5 trading licensees had a share of 72.22% 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 0.1634, indicating moderate concentration of market power.
- The weighted average price of electricity transacted through trading licensees was ₹3.52/kWh. The weighted average prices of electricity transacted through IEX and PXIL were ₹2.65/kWh and ₹2.80/kWh respectively.
- The average price of electricity transacted through DSM was ₹1.93/kWh.
- Top 5 electricity selling regional entities were Meghalaya, Madhya Pradesh, Diligent Power Pvt. Ltd., Korba West Power Company Ltd. and Teesta Stage 3. Top 5 electricity purchasing regional entities were Sikkim, Gujarat, West Bengal, Karnataka and Rajasthan.
- The volume of electricity that could not be cleared in IEX and PXIL due to congestion was 4.38% and 6.92% of the unconstrained cleared volume respectively. In terms of time, congestion occurred was 59.17% in IEX and 19.32% in PXIL.
- In April, 2017, 71.7% of the bilateral contracts were executed for duration of up to one week, 25.2% of the contracts were executed for duration of more than a week and up to one month, 2.4% of the bilateral contracts were executed for duration of more than one month and upto 3 months, and 0.8% of the bilateral contracts were executed for duration of more than three months and upto 12 months.

- The forward curve of electricity sale prices for the period from 1st April, 2017 to 30th July, 2017 based on the bilateral contracts⁵ executed till April, 2017 shows that forward contract prices are higher for the contracts executed in April, 2017 compared to the contracts executed in March, 2017 during the entire period.
- The market clearing volume of solar RECs transacted on IEX and PXIL were 112445 and 31177 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 572357 and 316346 respectively and the market clearing price of these RECs was ₹1500/MWh on both the power exchanges.

⁵*Excluding Banking/Swapping contracts*

Table-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (ALL INDIA), MARCH 2017				
Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	3714.60	39.92	3.65
	(i) Through Traders and PXs	2166.93	23.29	2.13
	(ii) Direct	1547.67	16.63	1.52
2	Through Power Exchanges	3421.16	36.77	3.36
	(i) IEX	3364.41	36.16	3.30
	(ii) PXIL	56.76	0.61	0.06
3	Through DSM	2169.01	23.31	2.13
	Total	9304.78	-	9.14
	Total Generation	101798.42	-	-

Source: NLDC

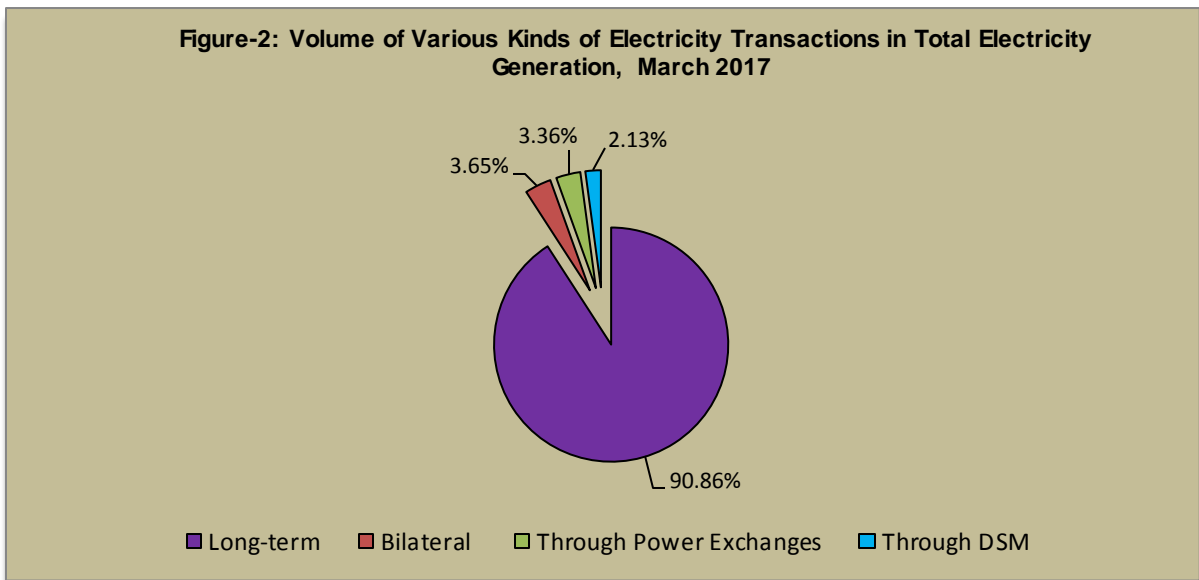
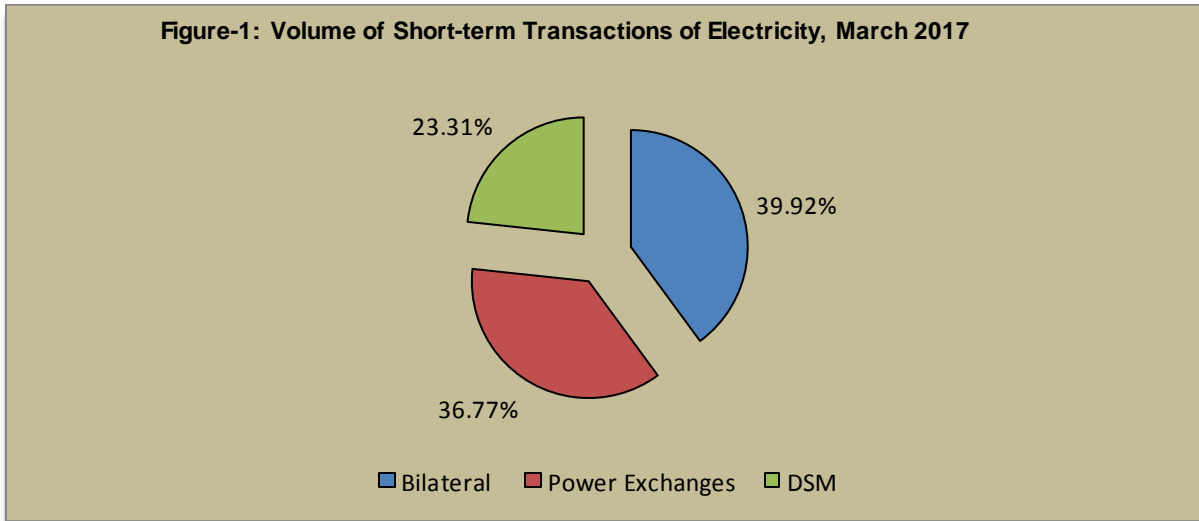


Figure-3: Volume of Short-term Transactions of Electricity, March 2017 (Day-wise)

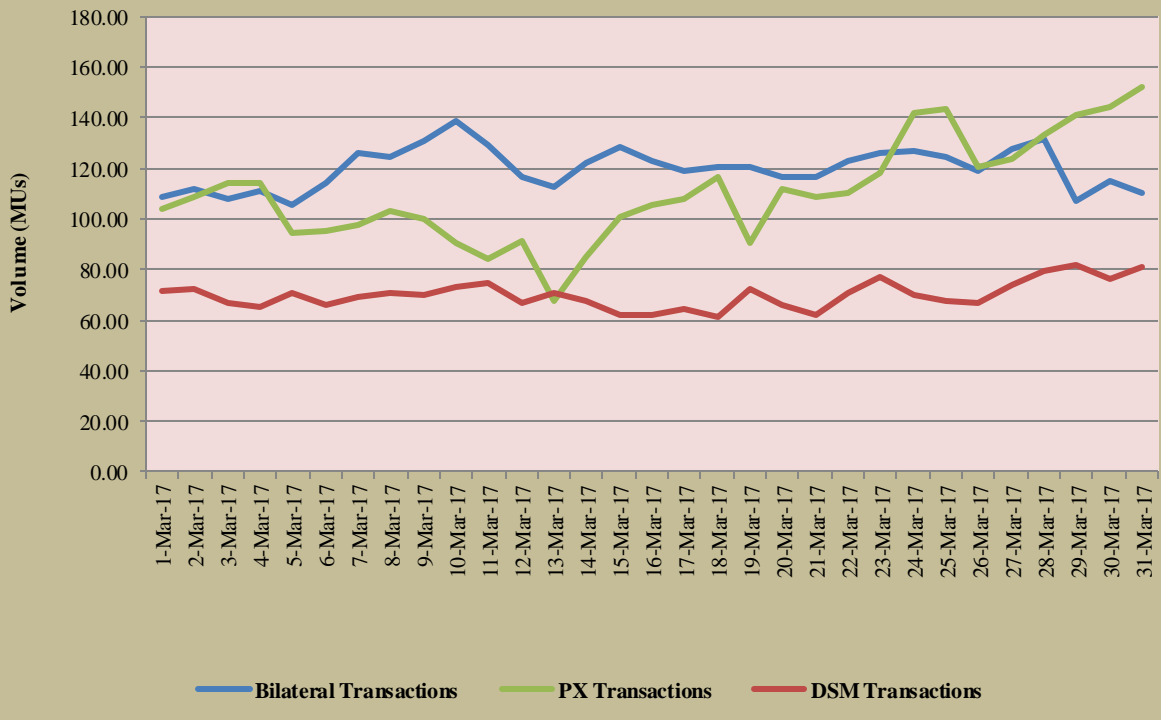


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, MARCH 2017			
Sr. No	Name of the Trading Licensee	% Share in total Volume transacted by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd.	33.58	0.1128
2	NTPC Vidyut Vyapar Nigam Ltd.	12.69	0.0161
3	Mittal Processors (P) Ltd.	10.11	0.0102
4	Manikaran Power Ltd.	8.94	0.0080
5	Adani Enterprises Ltd.	6.90	0.0048
6	Tata Power Trading Company (P) Ltd.	6.67	0.0044
7	GMR Energy Trading Ltd.	6.18	0.0038
8	Arunachal Pradesh Power Corporation (P) ltd	4.09	0.0017
9	Knowledge Infrastructure Systems (P) Ltd	2.09	0.0004
10	Jaiprakash Associates Ltd.	1.86	0.0003
11	JSW Power Trading Company Ltd	1.66	0.0003
12	National Energy Trading & Services Ltd.	1.42	0.0002
13	RPG Power Trading Company Ltd.	0.91	0.0001
14	Instinct Infra & Power Ltd.	0.87	0.0001
15	My Home Power Private Ltd.	0.70	0.0001
16	Customized Energy Solutions India (P) Ltd.	0.42	0.0000
17	SN Power Markets Pvt. Ltd.	0.37	0.0000
18	Shree Cement Ltd.	0.25	0.0000
19	Essar Electric Power Development Corp. Ltd.	0.13	0.0000
20	Gita Power & Infrastructure Private Limited	0.08	0.0000
21	Phillip Commodities India (P) Ltd.	0.07	0.0000
TOTAL		100.00%	0.1634
Top 5 trading licensees		72.22%	
<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>			

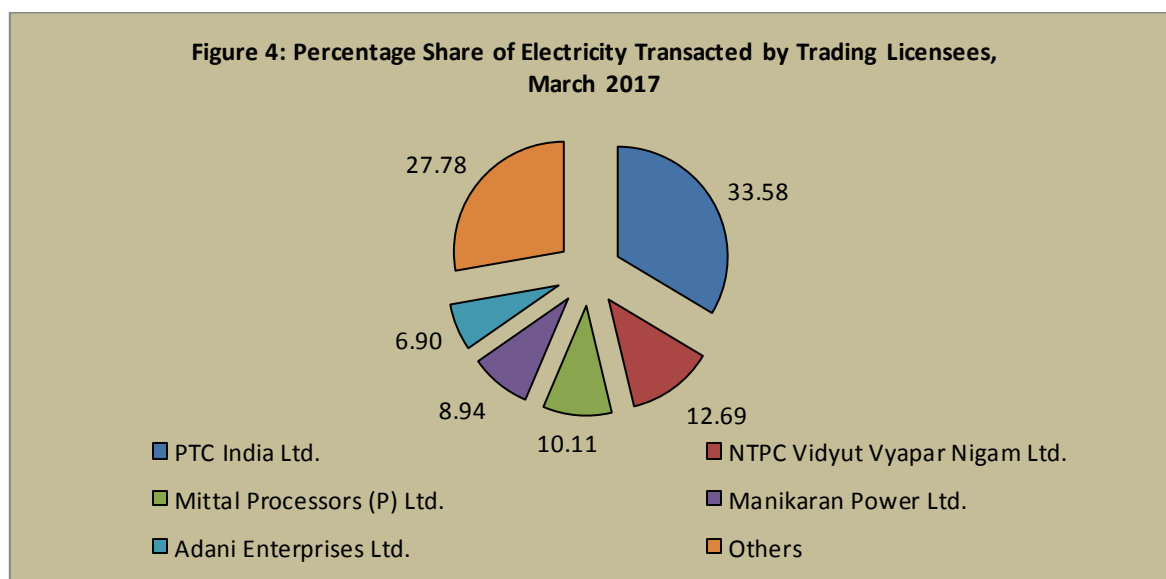


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, MARCH 2017		
Sr.No	Item	Sale Price of Traders (₹/kWh)
1	Minimum	2.00
2	Maximum	4.98
3	Weighted Average	3.52

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), MARCH 2017		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	3.65
2	PEAK	3.04
3	OFF PEAK	2.78

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, MARCH 2017			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	0.70	1.02
2	Maximum	7.18	3.41
3	Weighted Average	2.65	2.80

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, MARCH 2017			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	16.16	3.11
2	Day Ahead Contingency Contracts	49.71	3.59
	Total	65.87	3.47

Source: IEX

Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, MARCH 2017			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	12.49	3.20

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH DSM, MARCH 2017		
Sr.No	Item	Price in All India Grid (₹/kWh)
1	Minimum	0.00
2	Maximum	6.36
3	Average	1.93

Source: NLDC

Figure-5: Price of Short-term Transactions of Electricity, March 2017

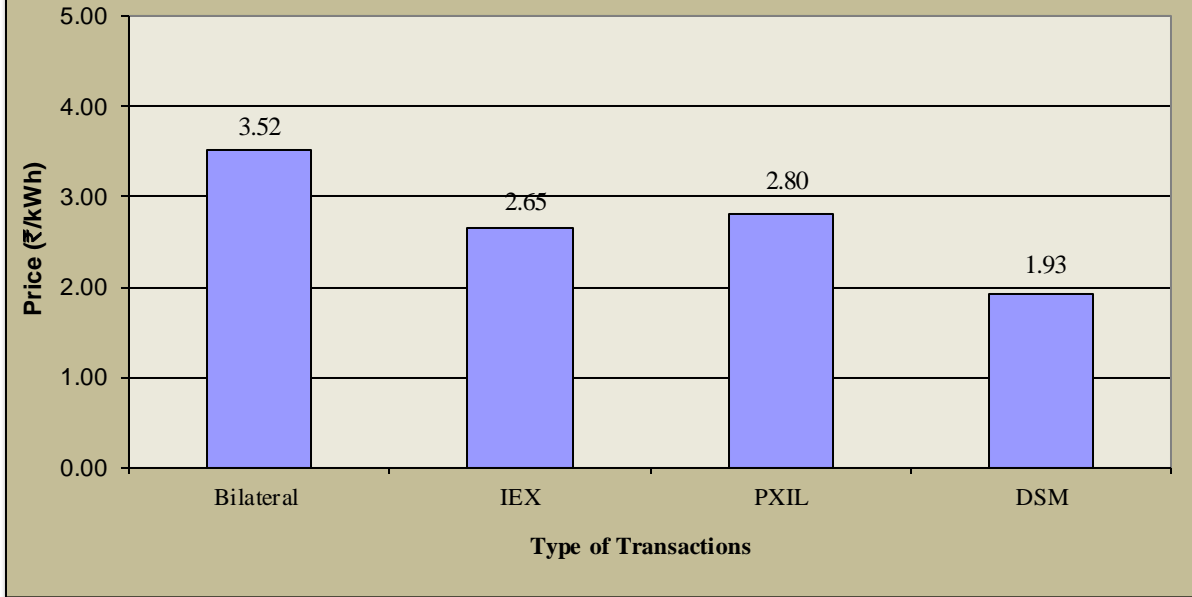


Figure-6: Price of Short-term Transactions of Electricity, March 2017 (Day-wise)

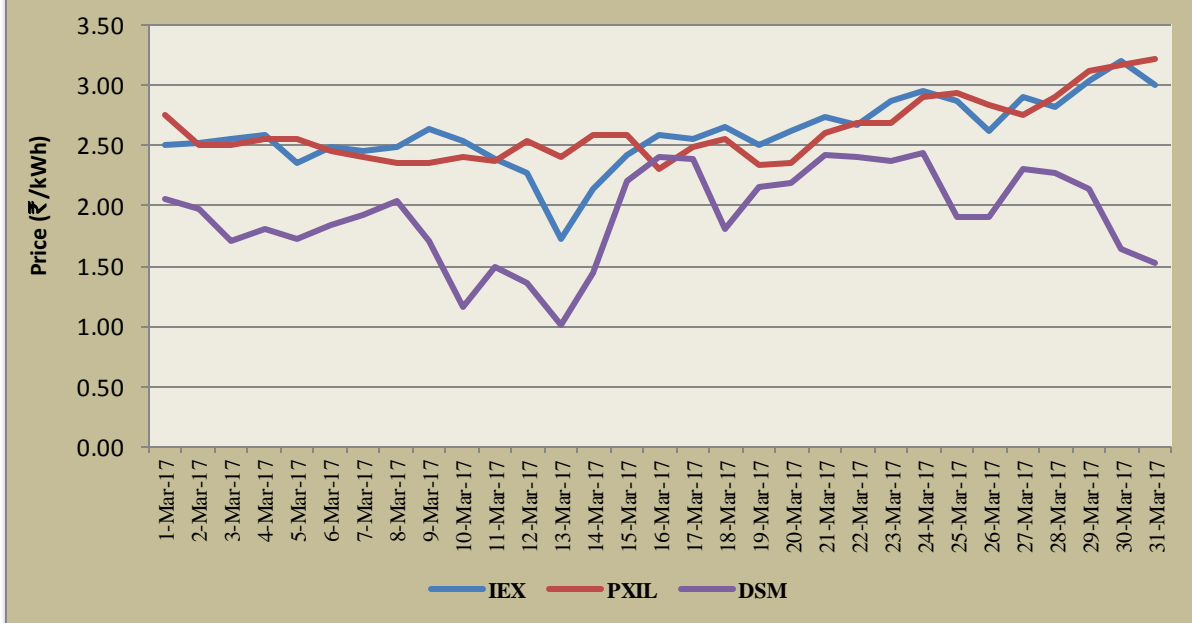


Table-9: VOLUME OF ELECTRICITY SOLD THROUGH BILATERAL, MARCH 2017		
Name of the Entity	Volume of Sale (MUs)	% of Volume
SIKKIM	3334.32	42.33
MEGHALAYA	972.93	12.35
DVC	390.95	4.96
PONDICHERRY	291.36	3.70
GOA	198.59	2.52
KERALA	185.70	2.36
MANIPUR	169.67	2.15
BIHAR	162.58	2.06
ODISHA	154.98	1.97
CHHATISGARH	148.38	1.88
J & K	144.41	1.83
TELANGANA	141.84	1.80
CHANDIGARH	135.73	1.72
PUNJAB	114.04	1.45
JHARKHAND	107.56	1.37
ARUNACHAL PRADESH	107.56	1.37
GUJARAT	95.43	1.21
ANDHRA PRADESH	88.54	1.12
TAMIL NADU	83.15	1.06
UTTARAKHAND	80.07	1.02
RAJASTHAN	79.66	1.01
HARYANA	78.90	1.00
HIMACHAL PRADESH	77.63	0.99
DELHI	76.83	0.98
UTTAR PRADESH	76.83	0.98
DAMAN AND DIU	69.50	0.88
KARNATAKA	69.02	0.88
DADRA & NAGAR HAVELI	67.98	0.86
MP	64.43	0.82
WEST BENGAL	58.84	0.75
MAHARASHTRA	48.93	0.62
Total	7876.31	100.00
Volume Sold by top 5 Regional Entities	5188.14	65.87

**Table-10: VOLUME OF ELECTRICITY PURCHASED THROUGH BILATERAL,
MARCH 2017**

Name of the Entity	Volume of Purchase (MUs)	% of Volume
SIKKIM	9403.42	51.55
GOA	661.11	3.62
DVC	359.08	1.97
UTTARAKHAND	340.73	1.87
HIMACHAL PRADESH	338.89	1.86
J & K	338.71	1.86
DADRA & NAGAR HAVELI	336.72	1.85
DAMAN AND DIU	334.01	1.83
TAMIL NADU	332.34	1.82
CHANDIGARH	330.60	1.81
KARNATAKA	328.77	1.80
PONDICHERRY	327.89	1.80
ODISHA	323.38	1.77
WEST BENGAL	319.90	1.75
BIHAR	311.81	1.71
RAJASTHAN	311.39	1.71
ANDHRA PRADESH	311.27	1.71
UTTAR PRADESH	310.87	1.70
CHHATISGARH	308.20	1.69
ARUNACHAL PRADESH	303.34	1.66
KERALA	301.00	1.65
JHARKHAND	299.90	1.64
PUNJAB	292.32	1.60
HARYANA	277.16	1.52
TELANGANA	269.93	1.48
DELHI	269.30	1.48
MP	265.75	1.46
GUJARAT	201.23	1.10
MAHARASHTRA	132.76	0.73
TOTAL	18241.77	100.00
Volume Purchased by top 5 Regional Entities	11103.22	60.87

**Table-11: VOLUME OF ELECTRICITY SOLD THROUGH POWER EXCHANGES,
MARCH 2017**

Name of the Entity	Volume of Sale (MUs)	% of Volume
MP	403.65	11.80
CHHATISGARH	284.74	8.33
DB POWER	231.07	6.76
KORBA WEST POWER	196.04	5.73
TEESTA STG3	176.34	5.16
JITPL	170.03	4.97
MARUTI COAL	155.12	4.54
JINDAL POWER	141.65	4.14
SEMBCORP	108.41	3.17
NLC	97.37	2.85
DVC	91.99	2.69
HIMACHAL PRADESH	84.11	2.46
BALCO	82.07	2.40
DELHI	79.93	2.34
ASSAM	79.64	2.33
TRIPURA	75.54	2.21
KARCHAM WANGTOO	59.97	1.75
GMR CHHATTISGARH	58.06	1.70
RAJASTHAN	51.63	1.51
MB POWER	51.59	1.51
HARYANA	51.17	1.50
UTTAR PRADESH	41.72	1.22
ACBIL	39.34	1.15
MEENAKSHI	38.86	1.14
SPECTRUM	37.56	1.10
PUNJAB	36.86	1.08
RKM POWER	32.70	0.96
THERMAL POWERTECH	32.37	0.95
ODISHA	31.66	0.93
NTPC STATIONS-WR	24.24	0.71
NSPCL	22.72	0.66
TELANGANA	21.88	0.64
SHREE CEMENT	21.54	0.63
ADHUNIK POWER LTD	20.94	0.61
JAYPEE NIGRIE	19.36	0.57
J & K	17.41	0.51
EMCO	16.63	0.49
ANDHRA PRADESH	16.50	0.48
TRN ENERGY	14.26	0.42

MAITHON POWER LTD	13.94	0.41
KARNATAKA	13.55	0.40
AD HYDRO	13.28	0.39
GOA	12.03	0.35
TAMIL NADU	11.96	0.35
GUJARAT	11.64	0.34
DHARIWAL POWER	11.53	0.34
CHANDIGARH	10.81	0.32
CHUZACHEN HEP	10.37	0.30
GMR KAMALANGA	9.69	0.28
JORETHANG	9.53	0.28
UTTARAKHAND	9.11	0.27
SIKKIM	8.67	0.25
WEST BENGAL	8.62	0.25
SIMHAPURI	7.77	0.23
ESSAR POWER	6.14	0.18
MAHARASHTRA	6.10	0.18
MIZORAM	5.63	0.16
NJPC	4.80	0.14
JHABUA POWER_MP	4.65	0.14
KERALA	3.60	0.11
MANIPUR	2.40	0.07
NTPC STATIONS-ER	2.17	0.06
NTPC STATIONS-NR	2.12	0.06
MEGHALAYA	1.18	0.03
MALANA	0.82	0.02
COASTGEN	0.75	0.02
LANCO BUDHIL	0.57	0.02
NTPC STATIONS-SR	0.17	0.00
Total	3420.26	100.00
Volume sold by top 5 Regional Entities	1291.84	37.77

Table-12: VOLUME OF ELECTRICITY PURCHASED THROUGH POWER EXCHANGES, MARCH 2017

Name of the Entity	Volume of Purchase (MUs)	% of Volume
GUJARAT	707.99	20.69
MAHARASHTRA	368.85	10.78
WEST BENGAL	336.16	9.83
RAJASTHAN	284.58	8.32
HARYANA	248.46	7.26
KARNATAKA	247.50	7.23
TELANGANA	216.49	6.33
ANDHRA PRADESH	145.36	4.25
UTTARAKHAND	136.44	3.99
J & K	108.74	3.18
DADRA & NAGAR HAVELI	90.36	2.64
BIHAR	89.31	2.61
KERALA	86.94	2.54
DELHI	69.55	2.03
HIMACHAL PRADESH	58.57	1.71
ASSAM	57.97	1.69
DAMAN AND DIU	37.19	1.09
UTTAR PRADESH	31.39	0.92
ODISHA	30.45	0.89
ARUNACHAL PRADESH	11.65	0.34
MEGHALAYA	10.80	0.32
TAMIL NADU	9.49	0.28
MANIPUR	7.67	0.22
MP	6.52	0.19
ESSAR STEEL	5.98	0.17
DVC	5.45	0.16
NAGALAND	3.43	0.10
GOA	2.88	0.08
PONDICHERRY	1.90	0.06
CHANDIGARH	1.54	0.04
MIZORAM	1.11	0.03
CHHATISGARH	0.25	0.01
PUNJAB	0.20	0.01
TOTAL	3421.16	100.00
Volume purchased by top 5 Regional Entities	1946.04	56.88

Table-13: VOLUME OF ELECTRICITY UNDER DRAWAL (EXPORTED) THROUGH DSM, MARCH 2017

Name of the Entity	Volume of Under Drawal (MUs)	% of Volume
NTPC STATIONS-WR	148.52	9.22
TAMIL NADU	130.69	8.11
MAHARASHTRA	106.87	6.63
PUNJAB	96.22	5.97
NHPC STATIONS	77.23	4.79
MP	74.92	4.65
GUJARAT	71.42	4.43
HARYANA	60.21	3.74
UTTAR PRADESH	57.82	3.59
SASAN UMPP	53.07	3.29
TELANGANA	45.19	2.80
DVC	41.60	2.58
ANDHRA PRADESH	38.61	2.40
NTPC STATIONS-NR	38.05	2.36
NLC	37.28	2.31
RAJASTHAN	35.73	2.22
ODISHA	27.66	1.72
BIHAR	26.12	1.62
CHHATISGARH	23.29	1.44
NTPC STATIONS-ER	21.54	1.34
KARNATAKA	21.24	1.32
NTPC STATIONS-SR	20.29	1.26
ESSAR STEEL	17.35	1.08
JITPL	16.36	1.02
DELHI	14.90	0.92
MEGHALAYA	11.62	0.72
LANKO_AMK	11.57	0.72
WEST BENGAL	11.27	0.70
GOA	11.24	0.70
NEEPCO STATIONS	11.16	0.69
SIKKIM	10.79	0.67
UTTARAKHAND	10.51	0.65
NEPAL(NVVN)	10.48	0.65
TRIPURA	10.39	0.64
JINDAL POWER	9.98	0.62
DB POWER	9.16	0.57
DADRA & NAGAR HAVELI	8.77	0.54
HIMACHAL PRADESH	8.71	0.54
PONDICHERRY	8.43	0.52
TEESTA STG3	8.26	0.51
NSPCL	7.82	0.49
MANIPUR	7.78	0.48
JHARKHAND	7.74	0.48
RGPPL(DABHOL)	7.61	0.47
ASSAM	7.61	0.47
GMR KAMALANGA	7.50	0.47

EMCO	6.91	0.43
NJPC	5.84	0.36
MAITHON POWER LTD	5.65	0.35
DCPP	4.59	0.28
THERMAL POWERTECH	4.36	0.27
TEESTA HEP	4.30	0.27
BANGLADESH	4.22	0.26
GMR CHHATTISGARH	4.05	0.25
MB POWER	3.91	0.24
JAYPEE NIGRIE	3.90	0.24
ACBIL	3.85	0.24
NAGALAND	3.77	0.23
KSK MAHANADI	3.63	0.23
BALCO	3.42	0.21
ARUNACHAL PRADESH	3.39	0.21
JINDAL STAGE-II	3.38	0.21
URI-2	3.34	0.21
KARCHAM WANGTOO	3.23	0.20
ADHUNIK POWER LTD	2.59	0.16
CHANDIGARH	2.53	0.16
SEMBCORP	2.35	0.15
CGPL	2.28	0.14
SHREE CEMENT	2.06	0.13
MIZORAM	2.06	0.13
JORETHANG	1.83	0.11
KERALA	1.81	0.11
RANGANADI HEP	1.49	0.09
ESSAR POWER	1.49	0.09
TRN ENERGY	1.48	0.09
MEENAKSHI	1.48	0.09
AD HYDRO	1.45	0.09
COASTGEN	1.40	0.09
RANGIT HEP	1.29	0.08
KORBA WEST POWER	1.12	0.07
RKM POWER	1.09	0.07
DAMAN AND DIU	0.88	0.05
SIMHAPURI	0.85	0.05
DHARIWAL POWER	0.84	0.05
CHUZACHEN HEP	0.83	0.05
ILF&S	0.77	0.05
DAGACHU	0.68	0.04
DOYANG HEP	0.28	0.02
LANCO BUDHIL	0.17	0.01
Total	1611.53	100.00
Volume Exported by top 5 Regional Entities	559.54	34.72

Table-14: VOLUME OF ELECTRICITY OVER DRAWAL (IMPORTED) THROUGH DSM, MARCH 2017

Name of the Entity	Volume of Over Drawal (MUs)	% of Volume
UTTAR PRADESH	112.60	7.09
NTPC STATIONS-NR	94.58	5.96
RAJASTHAN	86.43	5.44
NTPC STATIONS-WR	75.35	4.74
WEST BENGAL	69.48	4.38
BIHAR	67.15	4.23
NTPC STATIONS-ER	66.36	4.18
KERALA	63.34	3.99
GUJARAT	55.73	3.51
KARNATAKA	51.17	3.22
MAHARASHTRA	49.10	3.09
JHARKHAND	47.44	2.99
HARYANA	40.96	2.58
UTTARAKHAND	40.73	2.56
ANDHRA PRADESH	38.07	2.40
ASSAM	37.51	2.36
CHHATISGARH	35.93	2.26
HIMACHAL PRADESH	35.58	2.24
TELANGANA	29.87	1.88
CGPL	29.49	1.86
MP	28.97	1.82
DELHI	28.11	1.77
ESSAR STEEL	27.01	1.70
NTPC STATIONS-SR	26.83	1.69
BALCO	25.10	1.58
ODISHA	23.51	1.48
GOA	20.35	1.28
DVC	17.76	1.12
PUNJAB	17.16	1.08
TAMIL NADU	14.65	0.92
SHREE CEMENT	12.70	0.80
JITPL	12.65	0.80
KORBA WEST POWER	10.49	0.66
ILF&S	10.45	0.66
DAMAN AND DIU	9.72	0.61
ACBIL	9.71	0.61
TRIPURA	9.43	0.59
CHANDIGARH	7.85	0.49
NAGALAND	7.83	0.49
RKM POWER	7.43	0.47
THERMAL POWERTECH	6.94	0.44
ARUNACHAL PRADESH	6.56	0.41
SEMBCORP	6.25	0.39
NLC	5.05	0.32
MB POWER	4.73	0.30
BANGLADESH	4.63	0.29
MIZORAM	4.48	0.28
MEENAKSHI	4.48	0.28
EMCO	4.41	0.28

GMR KAMALANGA	4.40	0.28
NHPC STATIONS	4.02	0.25
ADHUNIK POWER LTD	3.95	0.25
DCPP	3.89	0.25
JINDAL POWER	3.84	0.24
DADRA & NAGAR HAVELI	3.61	0.23
KARCHAM WANGTOO	3.60	0.23
COASTGEN	3.60	0.23
NJPC	3.56	0.22
JINDAL STAGE-II	3.54	0.22
MAITHON POWER LTD	3.45	0.22
NSPCL	3.36	0.21
MEGHALAYA	3.24	0.20
DB POWER	3.23	0.20
MANIPUR	2.76	0.17
TEESTA STG3	2.44	0.15
JHABUA POWER_MP	2.21	0.14
PONDICHERRY	2.07	0.13
DAGACHU	1.92	0.12
SASAN UMPP	1.91	0.12
JAYPEE NIGRIE	1.89	0.12
TRN ENERGY	1.78	0.11
GMR CHHATTISGARH	1.75	0.11
JORETHANG	1.65	0.10
NTPC STATIONS-NER	1.55	0.10
RGPP(LDABHOL)	1.52	0.10
DGEN MEGA POWER	1.42	0.09
AD HYDRO	1.19	0.07
NEEPCO STATIONS	1.13	0.07
ESSAR POWER	0.96	0.06
SIKKIM	0.93	0.06
SIMHAPURI	0.92	0.06
LANKO KONDAPALLI	0.79	0.05
RANGIT HEP	0.71	0.04
LANCO BUDHIL	0.53	0.03
KSK MAHANADI	0.50	0.03
ONGC PALATANA	0.31	0.02
MALANA	0.26	0.02
LANKO_AMK	0.26	0.02
URI-2	0.24	0.02
DHARIWAL POWER	0.24	0.01
CHUZACHEN HEP	0.22	0.01
RANGANADI HEP	0.22	0.01
NEPAL(NVVN)	0.15	0.01
TEESTA HEP	0.14	0.01
TOTAL	1588.03	100.00
Volume Imported by top 5 Regional Entities	438.44	27.61

Table-15: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY-WISE), MARCH 2017

Sr.No.	Name of the Entity	Total volume of net short-term transactions of electricity*
1	SIKKIM	6050.57
2	GUJARAT	786.47
3	WEST BENGAL	646.81
4	KARNATAKA	523.62
5	RAJASTHAN	515.39
6	GOA	462.47
7	UTTARAKHAND	418.20
8	MAHARASHTRA	388.82
9	HARYANA	376.30
10	DADRA & NAGAR HAVELI	353.93
11	ANDHRA PRADESH	351.05
12	DAMAN AND DIU	310.55
13	TELANGANA	307.39
14	J & K	285.62
15	BIHAR	279.57
16	UTTAR PRADESH	278.50
17	HIMACHAL PRADESH	262.59
18	KERALA	260.17
19	JHARKHAND	232.04
20	ARUNACHAL PRADESH	210.61
21	DELHI	195.29
22	CHANDIGARH	190.91
23	ODISHA	163.04
24	TAMIL NADU	130.67
25	PUNJAB	62.55
26	NTPC STATIONS-NR	54.41
27	NTPC STATIONS-ER	42.65
28	PONDICHERRY	32.08
29	CGPL	27.21
30	ESSAR STEEL	15.64
31	ILF&S	9.68
32	ASSAM	8.23
33	NAGALAND	7.49
34	NTPC STATIONS-SR	6.37
35	NTPC STATIONS-NER	1.55
36	COASTGEN	1.45
37	DGEN MEGA POWER	1.42
38	DAGACHU	1.25
39	LANKO KONDAPALLI	0.79
40	BANGLADESH	0.42
41	ONGC PALATANA	0.31
42	JINDAL STAGE-II	0.17
43	LANCO BUDHIL	-0.21
44	DOYANG HEP	-0.28
45	RANGIT HEP	-0.57
46	MALANA	-0.64
47	DCPP	-0.70
48	RANGANADI HEP	-1.27
49	MIZORAM	-2.09

50	JHABUA POWER_MP	-2.46
51	URI-2	-3.10
52	KSK MAHANADI	-3.13
53	TEESTA HEP	-4.16
54	RGPPL(DABHOL)	-6.09
55	ESSAR POWER	-6.67
56	NJPC	-7.08
57	SIMHAPURI	-7.71
58	JORETHANG	-9.71
59	NEEPCO STATIONS	-10.03
60	NEPAL(NVVN)	-10.33
61	SHREE CEMENT	-10.89
62	CHUZACHEN HEP	-10.98
63	LANKO_AMK	-11.32
64	DHARIWAL POWER	-12.13
65	GMR KAMALANGA	-12.79
66	AD HYDRO	-13.54
67	TRN ENERGY	-13.96
68	MAITHON POWER LTD	-16.14
69	EMCO	-19.13
70	ADHUNIK POWER LTD	-19.58
71	JAYPEE NIGRIE	-21.37
72	RKM POWER	-26.35
73	NSPCL	-27.17
74	THERMAL POWERTECH	-29.79
75	ACBIL	-33.48
76	MEENAKSHI	-35.85
77	SPECTRUM	-37.56
78	MB POWER	-50.76
79	SASAN UMPP	-51.16
80	KARCHAM WANGTOO	-59.60
81	GMR CHHATTISGARH	-60.37
82	BALCO	-60.38
83	NHPC STATIONS	-73.21
84	TRIPURA	-76.51
85	NTPC STATIONS-WR	-97.41
86	SEMBICORP	-104.52
87	CHHATTISGARH	-112.04
88	NLC	-129.60
89	DVC	-142.24
90	JINDAL POWER	-147.79
91	MARUTI COAL	-155.12
92	MANIPUR	-169.41
93	JITPL	-173.74
94	TEESTA STG3	-182.16
95	KORBA WEST POWER	-186.67
96	DB POWER	-237.00
97	MP	-241.75
98	MEGHALAYA	-971.68

* Total volume of net short-term transactions of electricity includes net of transactions of electricity through bilateral, power exchange and UI
(-) indicates sale and (+) indicates purchase

Table-16: DETAILS OF CONGESTION IN POWER EXCHANGES, MARCH 2017			
	Details of Congestion	IEX	PXIL
A	Unconstrained Cleared Volume* (MUs)	3518.43	60.98
B	Actual Cleared Volume and hence scheduled (MUs)	3364.41	56.76
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	154.02	4.22
D	Volume of electricity that could not be cleared as % to Unconstrained Cleared Volume	4.38%	6.92%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	59.17%	19.32%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	15.96%	0.17%
	6.00 - 12.00 hours	28.45%	28.87%
	12.00 - 18.00 hours	27.88%	33.74%
	18.00 - 24.00 hours	27.71%	37.22%
* This power would have been scheduled had there been no congestion.			
Source: IEX & PXIL & NLDC			

Table-17: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA (DAY-WISE) (MUs), MARCH 2017

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-Mar-17	68.02	40.48	102.56	1.51	71.84	3309.35
2-Mar-17	71.43	40.65	107.51	0.84	72.39	3312.39
3-Mar-17	67.23	40.66	112.25	1.82	66.85	3349.56
4-Mar-17	70.08	41.09	113.01	1.28	65.53	3327.92
5-Mar-17	67.92	37.69	94.06	0.20	70.44	3241.67
6-Mar-17	71.43	42.48	94.91	0.04	65.66	3326.60
7-Mar-17	81.89	44.22	97.84	0.04	69.06	3327.12
8-Mar-17	79.17	45.32	102.87	0.04	70.56	3265.80
9-Mar-17	83.34	47.56	100.25	0.04	69.82	3238.52
10-Mar-17	86.30	52.42	90.11	0.04	72.87	3033.04
11-Mar-17	79.11	49.82	84.35	0.04	74.44	2985.64
12-Mar-17	71.57	45.27	90.84	0.46	67.12	2984.39
13-Mar-17	71.55	40.85	65.66	1.92	70.35	2854.40
14-Mar-17	75.44	46.33	82.21	2.54	67.61	3018.74
15-Mar-17	79.89	48.75	98.28	2.55	62.08	3117.35
16-Mar-17	71.87	50.99	105.42	0.04	62.43	3193.65
17-Mar-17	66.99	51.82	106.92	1.34	64.04	3239.87
18-Mar-17	71.41	48.95	116.08	0.17	61.38	3209.75
19-Mar-17	73.06	47.42	90.41	0.04	72.33	3134.28
20-Mar-17	61.90	55.00	112.04	0.04	65.66	3261.88
21-Mar-17	59.68	56.68	106.65	2.04	62.01	3336.67
22-Mar-17	62.98	60.02	108.45	2.10	70.63	3373.80
23-Mar-17	67.02	58.86	114.81	3.63	76.87	3404.85
24-Mar-17	67.75	59.29	136.02	5.98	70.15	3475.35
25-Mar-17	66.96	57.58	139.28	4.06	67.26	3460.26
26-Mar-17	60.82	58.13	117.65	2.58	67.11	3372.96
27-Mar-17	67.98	59.54	117.28	6.45	73.91	3492.20
28-Mar-17	72.02	59.33	126.72	6.88	79.50	3535.39
29-Mar-17	56.22	50.84	139.03	2.16	81.93	3545.78
30-Mar-17	58.59	56.81	143.74	0.64	76.47	3518.27
31-Mar-17	57.32	52.83	147.19	5.30	80.72	3550.97
Total	2166.93	1547.67	3364.41	56.76	2169.01	101798.42

Source: NLDC

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

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

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

Table-18: PRICE OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (DAY-WISE)(₹/kWh), MARCH, 2017

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	
							Minimum Price	Maximum Price	Average Price**
1-Mar-17	0.70	4.00	2.51	1.72	2.85	2.76	0.00	3.45	2.06
2-Mar-17	1.90	6.50	2.51	1.73	2.60	2.50	0.00	3.45	1.97
3-Mar-17	1.55	5.11	2.55	1.90	2.51	2.50	0.00	3.45	1.71
4-Mar-17	1.99	3.50	2.58	1.90	2.55	2.55	0.00	3.45	1.81
5-Mar-17	1.90	2.76	2.36	2.00	2.59	2.55	0.00	3.45	1.72
6-Mar-17	1.90	5.00	2.48	2.45	2.45	2.45	0.00	3.45	1.84
7-Mar-17	1.79	7.02	2.45	2.40	2.40	2.40	0.00	3.45	1.92
8-Mar-17	1.90	7.18	2.49	2.35	2.35	2.35	0.00	4.91	2.04
9-Mar-17	1.90	6.22	2.64	2.35	2.35	2.35	0.00	3.24	1.70
10-Mar-17	0.80	5.76	2.53	2.40	2.40	2.40	0.00	2.82	1.17
11-Mar-17	0.80	6.27	2.39	2.37	2.37	2.37	0.00	3.45	1.49
12-Mar-17	1.90	2.84	2.27	1.31	2.58	2.54	0.00	3.45	1.36
13-Mar-17	0.70	3.05	1.72	1.90	2.42	2.41	0.00	2.82	1.02
14-Mar-17	0.80	3.70	2.15	1.62	2.60	2.59	0.00	3.45	1.44
15-Mar-17	1.90	3.70	2.42	1.02	2.60	2.59	0.00	5.11	2.20
16-Mar-17	1.90	4.62	2.58	1.02	2.62	2.30	0.00	5.32	2.40
17-Mar-17	1.90	5.00	2.55	1.50	2.65	2.48	0.00	4.91	2.39
18-Mar-17	2.19	4.60	2.65	1.20	2.62	2.55	0.00	3.24	1.81
19-Mar-17	1.90	4.50	2.51	2.06	2.66	2.33	0.00	3.45	2.16
20-Mar-17	2.10	5.00	2.63	2.10	2.70	2.35	0.00	5.32	2.19
21-Mar-17	2.30	6.50	2.74	2.37	2.65	2.60	0.36	4.91	2.43
22-Mar-17	2.20	5.00	2.67	2.21	2.70	2.68	1.07	5.74	2.40
23-Mar-17	2.44	3.92	2.87	2.45	2.74	2.68	0.00	5.32	2.37
24-Mar-17	2.41	4.00	2.95	2.55	3.16	2.91	0.00	5.32	2.43
25-Mar-17	2.44	3.84	2.87	2.58	3.11	2.94	0.00	3.45	1.91
26-Mar-17	2.20	3.20	2.61	2.40	3.10	2.83	0.00	3.45	1.91
27-Mar-17	2.39	4.00	2.90	2.30	2.95	2.76	0.00	6.16	2.30
28-Mar-17	2.40	4.10	2.82	2.30	3.21	2.91	0.00	5.11	2.28
29-Mar-17	2.38	4.70	3.03	2.20	3.41	3.12	0.00	5.32	2.14
30-Mar-17	2.52	4.75	3.20	3.00	3.21	3.16	0.00	5.32	1.64
31-Mar-17	2.19	4.33	3.00	3.20	3.21	3.21	0.00	6.36	1.52
	0.70#	7.18#	2.65	1.02#	3.41#	2.80	0.00#	6.36#	1.93

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), MARCH 2017**

Name of the 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	114.04	292.32	178.28	36.86	0.20	-36.66	17.16	96.22	-79.07	62.55
Haryana	78.90	277.16	198.26	51.17	248.46	197.29	40.96	60.21	-19.25	376.30
Rajasthan	79.66	311.39	231.73	51.63	284.58	232.95	86.43	35.73	50.71	515.39
Delhi	76.83	269.30	192.47	79.93	69.55	-10.38	28.11	14.90	13.21	195.29
Uttar Pradesh	76.83	310.87	234.05	41.72	31.39	-10.33	112.60	57.82	54.78	278.50
Uttarakhand	80.07	340.73	260.65	9.11	136.44	127.33	40.73	10.51	30.22	418.20
Himachal Pradesh	77.63	338.89	261.26	84.11	58.57	-25.55	35.58	8.71	26.87	262.59
J & K	144.41	338.71	194.30	17.41	108.74	91.32	0.00	0.00	0.00	285.62
Chandigarh	135.73	330.60	194.87	10.81	1.54	-9.27	7.85	2.53	5.32	190.91
MP	64.43	265.75	201.33	403.65	6.52	-397.13	28.97	74.92	-45.95	-241.75
Maharashtra	48.93	132.76	83.84	6.10	368.85	362.75	49.10	106.87	-57.77	388.82
Gujarat	95.43	201.23	105.81	11.64	707.99	696.35	55.73	71.42	-15.69	786.47
Chhatisgarh	148.38	308.20	159.81	284.74	0.25	-284.49	35.93	23.29	12.64	-112.04
Daman and Diu	69.50	334.01	264.51	0.00	37.19	37.19	9.72	0.88	8.85	310.55
Dadra & Nagar H	67.98	336.72	268.73	0.00	90.36	90.36	3.61	8.77	-5.17	353.93
Andhra Pradesh	88.54	311.27	222.73	16.50	145.36	128.86	38.07	38.61	-0.54	351.05
Karnataka	69.02	328.77	259.75	13.55	247.50	233.95	51.17	21.24	29.93	523.62
Kerala	185.70	301.00	115.30	3.60	86.94	83.34	63.34	1.81	61.53	260.17
Tamil Nadu	83.15	332.34	249.18	11.96	9.49	-2.48	14.65	130.69	-116.04	130.67
Pondicherry	291.36	327.89	36.53	0.00	1.90	1.90	2.07	8.43	-6.36	32.08
Goa	198.59	661.11	462.52	12.03	2.88	-9.15	20.35	11.24	9.11	462.47
Telangana	141.84	269.93	128.09	21.88	216.49	194.62	29.87	45.19	-15.32	307.39
West Bengal	58.84	319.90	261.07	8.62	336.16	327.54	69.48	11.27	58.21	646.81
Odisha	154.98	323.38	168.40	31.66	30.45	-1.21	23.51	27.66	-4.15	163.04
Bihar	162.58	311.81	149.23	0.00	89.31	89.31	67.15	26.12	41.04	279.57
Jharkhand	107.56	299.90	192.34	0.00	0.00	0.00	47.44	7.74	39.70	232.04
Sikkim	3334.32	9403.42	6069.10	8.67	0.00	-8.67	0.93	10.79	-9.86	6050.57
DVC	390.95	359.08	-31.86	91.99	5.45	-86.53	17.76	41.60	-23.84	-142.24
Arunachal Pradesh	107.56	303.34	195.78	0.00	11.65	11.65	6.56	3.39	3.18	210.61
Assam	0.00	0.00	0.00	79.64	57.97	-21.67	37.51	7.61	29.90	8.23
Manipur	169.67	0.00	-169.67	2.40	7.67	5.28	2.76	7.78	-5.02	-169.41
Meghalaya	972.93	0.00	-972.93	1.18	10.80	9.62	3.24	11.62	-8.38	-971.68
Mizoram	0.00	0.00	0.00	5.63	1.11	-4.52	4.48	2.06	2.43	-2.09
Nagaland	0.00	0.00	0.00	0.00	3.43	3.43	7.83	3.77	4.07	7.49
Tripura	0.00	0.00	0.00	75.54	0.00	-75.54	9.43	10.39	-0.96	-76.51
NTPC Stations-NR	0.00	0.00	0.00	2.12	0.00	-2.12	94.58	38.05	56.53	54.41
NHPC Stations	0.00	0.00	0.00	0.00	0.00	0.00	4.02	77.23	-73.21	-73.21
NJPC	0.00	0.00	0.00	4.80	0.00	-4.80	3.56	5.84	-2.28	-7.08
AD HYDRO	0.00	0.00	0.00	13.28	0.00	-13.28	1.19	1.45	-0.26	-13.54
KARCHAM WANG	0.00	0.00	0.00	59.97	0.00	-59.97	3.60	3.23	0.36	-59.60
SHREE CEMENT	0.00	0.00	0.00	21.54	0.00	-21.54	12.70	2.06	10.65	-10.89
LANCO BUDHIL	0.00	0.00	0.00	0.57	0.00	-0.57	0.53	0.17	0.36	-0.21
URI-2	0.00	0.00	0.00	0.00	0.00	0.00	0.24	3.34	-3.10	-3.10
NTPC -WR	0.00	0.00	0.00	24.24	0.00	-24.24	75.35	148.52	-73.17	-97.41
JINDAL POWER	0.00	0.00	0.00	141.65	0.00	-141.65	3.84	9.98	-6.14	-147.79
LANKO_AMK	0.00	0.00	0.00	0.00	0.00	0.00	0.26	11.57	-11.32	-11.32
NSPCL	0.00	0.00	0.00	22.72	0.00	-22.72	3.36	7.82	-4.46	-27.17
ACBIL	0.00	0.00	0.00	39.34	0.00	-39.34	9.71	3.85	5.86	-33.48
BALCO	0.00	0.00	0.00	82.07	0.00	-82.07	25.10	3.42	21.69	-60.38
RGPPL	0.00	0.00	0.00	0.00	0.00	0.00	1.52	7.61	-6.09	-6.09
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	29.49	2.28	27.21	27.21

DCPP	0.00	0.00	0.00	0.00	0.00	0.00	3.89	4.59	-0.70	-0.70
EMCO	0.00	0.00	0.00	16.63	0.00	-16.63	4.41	6.91	-2.50	-19.13
ESSAR STEEL	0.00	0.00	0.00	0.00	5.98	5.98	27.01	17.35	9.66	15.64
KSK MAHANADI	0.00	0.00	0.00	0.00	0.00	0.00	0.50	3.63	-3.13	-3.13
ESSAR POWER	0.00	0.00	0.00	6.14	0.00	-6.14	0.96	1.49	-0.53	-6.67
JINDAL STAGE-II	0.00	0.00	0.00	0.00	0.00	0.00	3.54	3.38	0.17	0.17
DB POWER	0.00	0.00	0.00	231.07	0.00	-231.07	3.23	9.16	-5.93	-237.00
DHARIWAL POW	0.00	0.00	0.00	11.53	0.00	-11.53	0.24	0.84	-0.60	-12.13
JAYPEE NIGRIE	0.00	0.00	0.00	19.36	0.00	-19.36	1.89	3.90	-2.00	-21.37
GMR Chhattisgarh	0.00	0.00	0.00	58.06	0.00	-58.06	1.75	4.05	-2.30	-60.37
KORBA WEST	0.00	0.00	0.00	196.04	0.00	-196.04	10.49	1.12	9.36	-186.67
MB Power	0.00	0.00	0.00	51.59	0.00	-51.59	4.73	3.91	0.82	-50.76
MARUTI COAL	0.00	0.00	0.00	155.12	0.00	-155.12	0.00	0.00	0.00	-155.12
SPECTRUM	0.00	0.00	0.00	37.56	0.00	-37.56	0.00	0.00	0.00	-37.56
Jhabua Power_MP	0.00	0.00	0.00	4.65	0.00	-4.65	2.21	0.02	2.19	-2.46
SASAN UMPP	0.00	0.00	0.00	0.00	0.00	0.00	1.91	53.07	-51.16	-51.16
TRN ENERGY	0.00	0.00	0.00	14.26	0.00	-14.26	1.78	1.48	0.30	-13.96
RKM Power	0.00	0.00	0.00	32.70	0.00	-32.70	7.43	1.09	6.35	-26.35
NTPC Stations-SR	0.00	0.00	0.00	0.17	0.00	-0.17	26.83	20.29	6.54	6.37
SIMHAPURI	0.00	0.00	0.00	7.77	0.00	-7.77	0.92	0.85	0.07	-7.71
Meenakshi	0.00	0.00	0.00	38.86	0.00	-38.86	4.48	1.48	3.00	-35.85
COASTGEN	0.00	0.00	0.00	0.75	0.00	-0.75	3.60	1.40	2.20	1.45
THERMAL PT	0.00	0.00	0.00	32.37	0.00	-32.37	6.94	4.36	2.59	-29.79
ILF&S	0.00	0.00	0.00	0.00	0.00	0.00	10.45	0.77	9.68	9.68
NLC	0.00	0.00	0.00	97.37	0.00	-97.37	5.05	37.28	-32.23	-129.60
SEBMCORP	0.00	0.00	0.00	108.41	0.00	-108.41	6.25	2.35	3.90	-104.52
NTPC Stations-ER	0.00	0.00	0.00	2.17	0.00	-2.17	66.36	21.54	44.82	42.65
MAITHON	0.00	0.00	0.00	13.94	0.00	-13.94	3.45	5.65	-2.20	-16.14
ADHUNIK	0.00	0.00	0.00	20.94	0.00	-20.94	3.95	2.59	1.36	-19.58
CHUZACHEN HE	0.00	0.00	0.00	10.37	0.00	-10.37	0.22	0.83	-0.61	-10.98
GMR KAMALANG	0.00	0.00	0.00	9.69	0.00	-9.69	4.40	7.50	-3.10	-12.79
JITPL	0.00	0.00	0.00	170.03	0.00	-170.03	12.65	16.36	-3.71	-173.74
TEESTA HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.14	4.30	-4.16	-4.16
Jorethang	0.00	0.00	0.00	9.53	0.00	-9.53	1.65	1.83	-0.18	-9.71
NEPAL(NVVN)	0.00	0.00	0.00	0.00	0.00	0.00	0.15	10.48	-10.33	-10.33
Bangladesh	0.00	0.00	0.00	0.00	0.00	0.00	4.63	4.22	0.42	0.42
TEESTA STG3	0.00	0.00	0.00	176.34	0.00	-176.34	2.44	8.26	-5.82	-182.16
NEEPCO Stations	0.00	0.00	0.00	0.00	0.00	0.00	1.13	11.16	-10.03	-10.03
TOTAL	7876.31	18241.77	10365.46	3420.26	3421.16	0.91	1588.03	1611.53	-23.50	10342.87

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 April, 2017

- Upto one week
- More than one week and upto one month
- More than one month and upto 3 months
- More than three months and upto 12 months

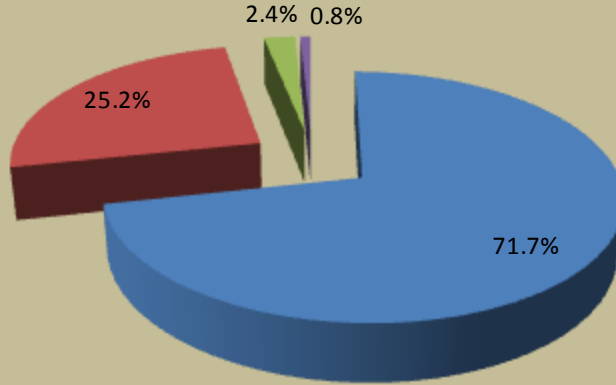


Figure-8: Forward Curve based on Prices of Bilateral Contracts

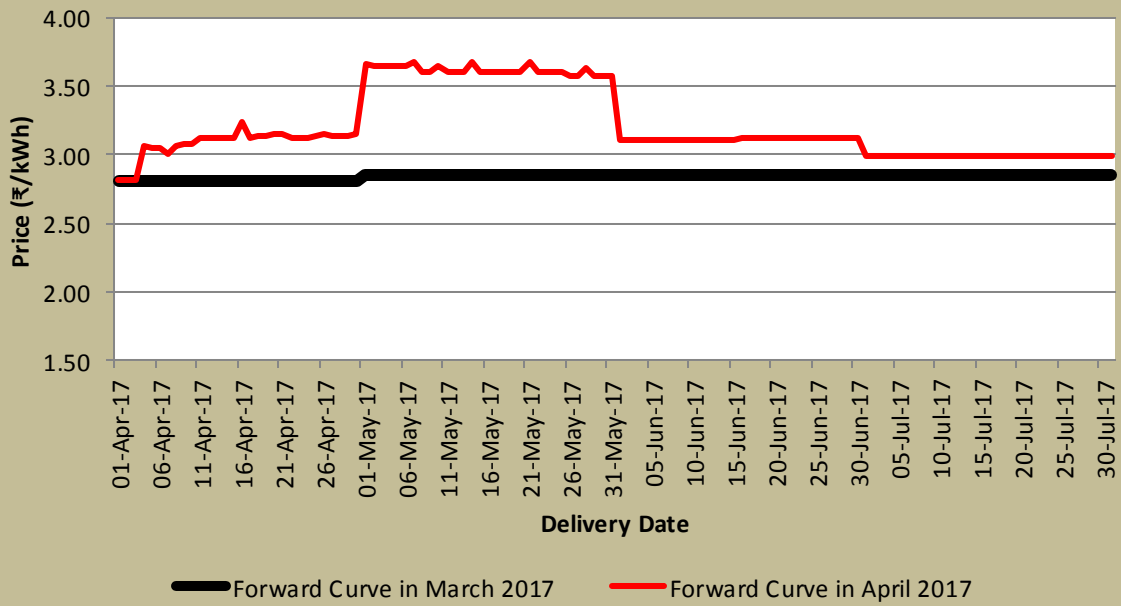


Table-20 : VOLUME AND PRICE OF RENEWABLE ENERGY CERTIFICATES (RECs) TRANSACTED THROUGH POWER EXCHANGES, MARCH 2017					
Sr.No.	Details of REC Transactions	IEX		PXIL	
		Solar	Non-Solar	Solar	Non Solar
A	Volume of Buy Bid	112445	572357	31177	316346
B	Volume of Sell Bid	3871976	9370586	1139108	3267336
C	Ratio of Buy Bid to Sell Bid Volume	0.029	0.061	0.027	0.097
D	Market Clearing Volume (MWh)	112445	572357	31177	316346
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>