

Monthly Report on Short-term Transactions of Electricity in India

April, 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	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
DOYANG HEP	Doyang Hydro 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	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	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	Nathpa Jhakri 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	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
Sasan UMPP	Sasan Ultra Mega Power Project
SEMBCORP	Sembcorp Gayatri Power Ltd
SHREE CEMENT	Shree Cement Limited
SIMHAPURI	Simhapuri Energy Private Limited
SPECTRUM	Spectrum Power Generation Ltd
TEESTA STG3	TEESTA STG3 Hydro Power Project

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 **April, 2017** are as under:

I: Volume of Short-term Transactions of Electricity

During April 2017, total electricity generation excluding generation from renewable and captive power plants in India was 103238.35 MUs (Table-1).

Of the total electricity generation, 10821.40 MUs (10.48%) was transacted through short-term, comprising of 4315.74 MUs (4.18%) through bilateral (through traders and term-ahead contracts on power exchanges and directly between distribution companies), followed by 3743.82 MUs (3.63%) through day ahead collective transactions on power exchanges (IEX and PXIL) and 2761.84 MUs (2.68%) through DSM (Table-1 & Figure-2).

Of the total short-term transactions, bilateral constitutes 39.88% (23.75% through traders and term-ahead contracts on power exchanges and 16.13% directly between distribution companies) followed by 34.60% through day ahead collective transactions on power exchanges and 25.52% 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 34 trading licensees as on April, 2017. In April, 2017, 23 trading licensees were engaged in short term trading. Top 5 trading licensees had a share of 72.29% in the total volume traded by all the licensees. These are PTC India Ltd., Manikaran Power Ltd., NTPC Vidyut Vyapar Nigam Ltd., Adani Enterprises Ltd. and Tata Power Trading Company Pvt. 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 0.1688 for the month of April, 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 3716.96 MUs and 26.86 MUs respectively. The volume of total buy bids and sell bids was 4541.50 MUs and 5830.91 MUs respectively in IEX while the same was 55.22 MUs and 83.11 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 58.77 MUs and 11.62 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 ₹2.40/kWh, ₹5.36/kWh and ₹3.46/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 ₹3.57/kWh, ₹3.21/kWh, and ₹2.98/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, ₹4.70/kWh and ₹2.83/kWh respectively in IEX and ₹2.12/kWh, ₹3.84/kWh and ₹2.79/kWh respectively in PXIL (Table-5).

The price of electricity transacted through IEX and PXIL in the term-ahead market was ₹3.27/kWh and ₹3.56/kWh respectively (Table-6 and Table-7).

(iii) Price of electricity transacted through DSM: The average deviation settlement price was ₹1.90/kWh. The minimum and maximum deviation settlement prices were ₹0.00/kWh and ₹6.40/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 41.21% of the volume, and these were Sembcorp Gayatri Power Ltd, Jaypee Nigrie Super Thermal Power Project, Essar Power Limited, Infrastructure Leasing & Financial Services Limited and Madhya Pradesh. Top 5 regional entities purchased 52.47% of the volume, and these were Tamil Nadu, Maharashtra, West Bengal, Telangana and Chhattisgarh (Table-9 & 10).

Of the total power exchange transactions, top 5 regional entities sold 35.28% of the volume, and these were Madhya Pradesh, Himachal Pradesh, Jindal Power Limited, Jaypee Karcham Hydro Corporation Limited and Diligent Power Pvt. Ltd. Top 5 regional entities purchased 50.58% of the volume, and these were Gujarat, Maharashtra, West Bengal, Rajasthan and Andhra Pradesh (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 28.29% of the volume, and these were Gujarat, NTPC Stations (WR), Tamil Nadu, Punjab and Telangana (Table-13). Top 5 regional entities overdrew 41.68% of the volume, and these were Ratnagiri Gas and Power Private Limited, Uttar Pradesh, NTPC Stations (NR), Maharashtra and Andhra Pradesh (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 Sembcorp Gayatri Power Ltd, Madhya Pradesh, Jaypee Nigrie Super Thermal Power Project, Diligent Power Pvt. Ltd. and Himachal Pradesh. Top 5 electricity purchasing regional entities were Maharashtra, West Bengal, Ratnagiri Gas and Power Private Limited, Tamil Nadu and Bihar.

IV: Congestion² on Inter-State Transmission Corridor for Day-Ahead Market on Power Exchanges

Power Exchanges use a price discovery mechanism in which the aggregate demand and supply are matched to arrive at an unconstrained market price and volume. This step assumes that there is no congestion in the inter-State transmission system between different regions. However, in reality, the system operator (NLDC) in coordination with RLDCs limits the flow (due to congestion) in the inter-State transmission system. In such a situation, power exchanges adopt a mechanism called “Market Splitting”³.

In the month of April, 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

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.

to congestion and could not be transacted through power exchanges is the 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 1.77% and 8.65% of the unconstrained cleared volume respectively. In terms of time, congestion occurred was 53.40% in IEX and 18.99% in PXIL (Table-16).

V: Bilateral Contracts executed by Traders

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

(i) Duration of bilateral contracts: During May, 2017, a total of 134 bilateral contracts (excluding banking/swap contracts) have been executed by traders for the volume of 1707.03 MUs. Figure-7 shows the percentage of contracts categorized according to the period of power supply. It can be observed from the figure that 87.31% of the bilateral contracts were executed for duration of up to one week, 11.94% of the contracts were executed for duration of more than a week and up to one month, 0.75% of the bilateral contracts were executed for duration for more than one month and upto 3 months, and no 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 515.26 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 May, 2017 to 29th August, 2017 based on the bilateral contracts⁴ executed till May, 2017. Forward curves have been drawn for the contracts executed in April, 2017 and May, 2017 for the purpose of comparison. It is observed that forward contract prices are higher for the contracts executed in May, 2017 compared to the contracts executed in April, 2017 till 9th August 2017, afterward, the prices of both the contracts have been moving together.

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 April, 2011.

The details of REC transactions for the month of April, 2017 are shown in Table-20. The market clearing volume of solar RECs transacted on IEX and PXIL were 88533 and 119869 respectively and the market clearing price of these RECs was ₹1000/MWh on both the power exchanges. Market clearing volume of non-solar RECs transacted on IEX and PXIL were 364820 and 173551 respectively and the market clearing price of these RECs was ₹1000/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 0.025 and 0.088 for IEX and PXIL respectively. For non-solar RECs, the ratio of buy bids to sell bids was 0.046 and 0.044 for IEX and PXIL respectively.

⁴Excluding Banking/Swapping contracts

VII: Inferences:

- The percentage of short-term transactions of electricity to total electricity generation was 10.48%.
- Of the total short-term transactions of electricity, 39.88% was transacted through bilateral (through traders and term ahead contracts on power exchanges and directly by distribution companies), followed by 34.60% through power exchanges and 25.52% through DSM.
- Top 5 trading licensees had a share of 72.29% 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 0.1688, indicating moderate concentration of market power.
- The weighted average price of electricity transacted through trading licensees was ₹3.46/kWh. The weighted average prices of electricity transacted through IEX and PXIL were ₹2.83/kWh and ₹2.79/kWh respectively.
- The average price of electricity transacted through DSM was ₹1.90/kWh.
- Top 5 electricity selling regional entities were Sembcorp Gayatri Power Ltd, Madhya Pradesh, Jaypee Nigrie Super Thermal Power Project, Diligent Power Pvt. Ltd. and Himachal Pradesh. Top 5 electricity purchasing regional entities were Maharashtra, West Bengal, Ratnagiri Gas and Power Private Limited, Tamil Nadu and Bihar.
- The volume of electricity that could not be cleared in IEX and PXIL due to congestion was 1.77% and 8.65% of the unconstrained cleared volume respectively. In terms of time, congestion occurred was 53.40% in IEX and 18.99% in PXIL.
- In May, 2017, 87.31% of the bilateral contracts were executed for duration of up to one week, 11.94% of the contracts were executed for duration of more than a week and up to one month, 0.75% of the bilateral contracts were executed for duration of more than one month and upto 3 months, and no 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 May, 2017 to 29th August, 2017 based on the bilateral contracts⁵ executed till May, 2017 shows that forward contract prices are higher for the contracts executed in May, 2017 compared to the contracts executed in April, 2017 till 9th August 2017, afterward, the prices of both the contracts have been moving together.
- The market clearing volume of solar RECs transacted on IEX and PXIL were 88533 and 119869 respectively and the market clearing price of these RECs was ₹1000/MWh on both the power exchanges. Market clearing volume of non-solar RECs transacted on IEX and PXIL were 364820 and 173551 respectively and the market clearing price of these RECs was ₹1000/MWh on both the power exchanges.

⁵*Excluding Banking/Swapping contracts*

Table-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (ALL INDIA), APRIL 2017				
Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	4315.74	39.88	4.18
	(i) Through Traders and PXs	2570.58	23.75	2.49
	(ii) Direct	1745.16	16.13	1.69
2	Through Power Exchanges	3743.82	34.60	3.63
	(i) IEX	3716.96	34.35	3.60
	(ii) PXIL	26.86	0.25	0.03
3	Through DSM	2761.84	25.52	2.68
	Total	10821.40	-	10.48
	Total Generation	103238.35	-	-

Source: NLDC

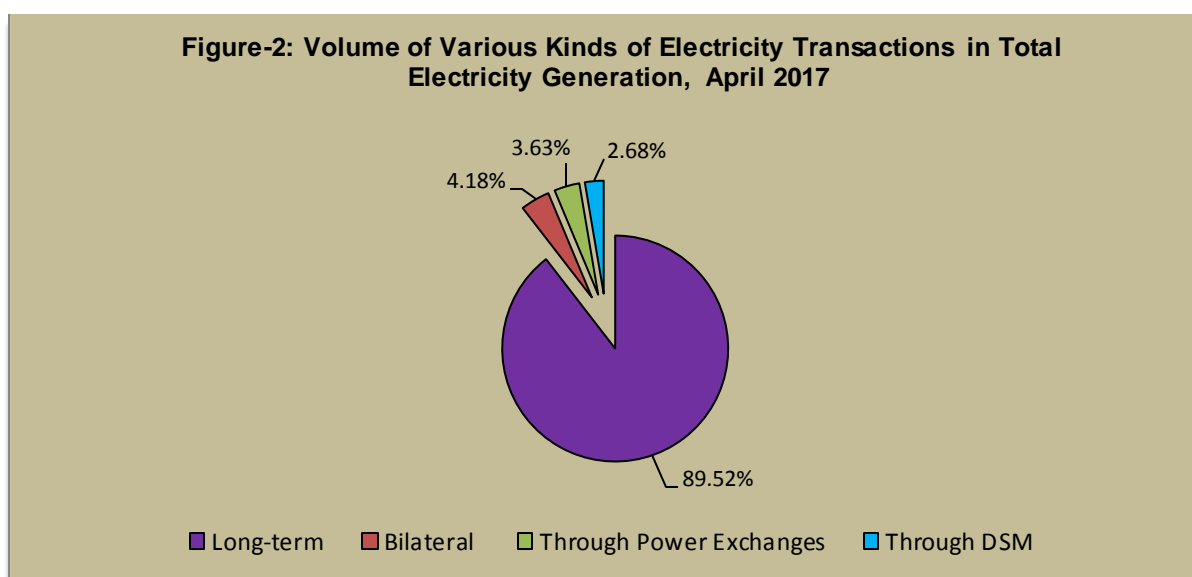
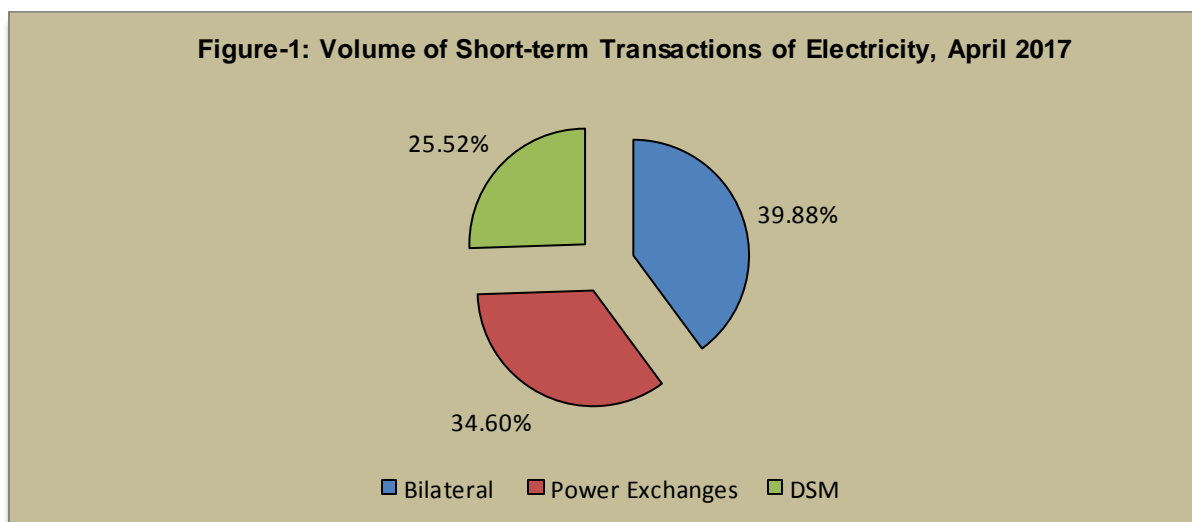


Figure-3: Volume of Short-term Transactions of Electricity, April 2017 (Day-wise)

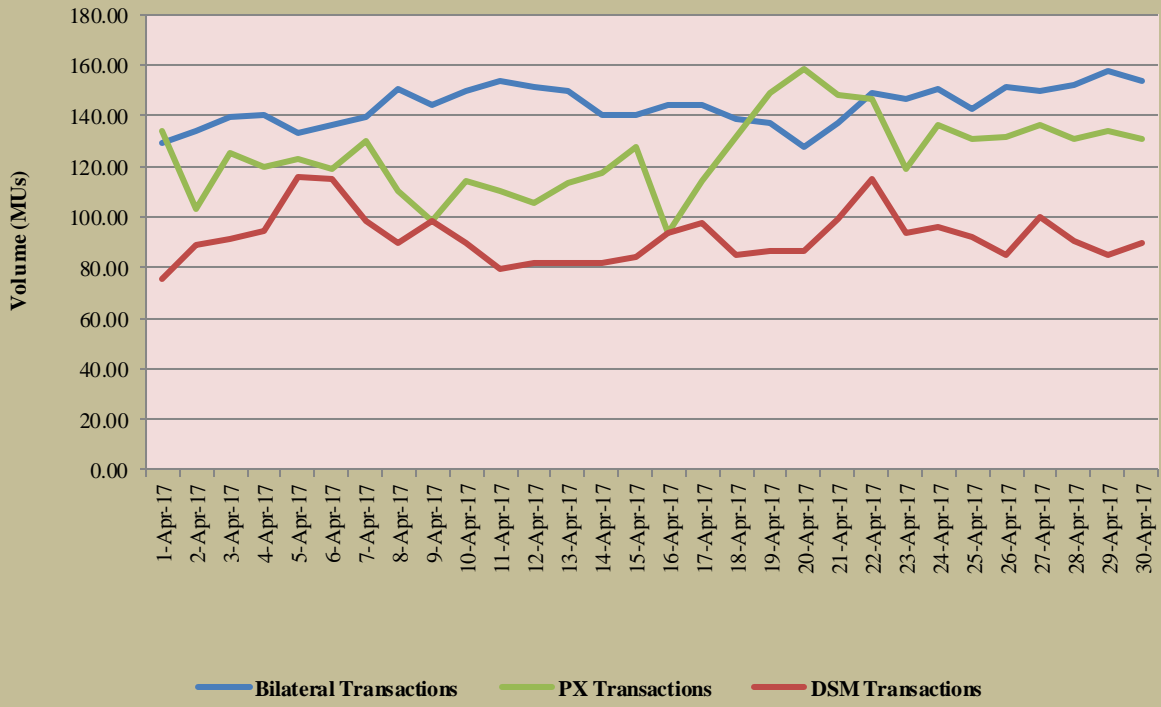


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, APRIL 2017			
Sr.No	Name of the Trading Licensee	% Share in total Volume transacted by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd.	35.16	0.1236
2	Manikaran Power Ltd.	11.83	0.0140
3	NTPC Vidyut Vyapar Nigam Ltd.	10.50	0.0110
4	Adani Enterprises Ltd.	7.96	0.0063
5	Tata Power Trading Company (P) Ltd.	6.84	0.0047
6	Mittal Processors (P) Ltd.	5.08	0.0026
7	Arunachal Pradesh Power Corporation (P) Ltd	4.83	0.0023
8	Jaiprakash Associates Ltd.	3.80	0.0014
9	GMR Energy Trading Ltd.	3.78	0.0014
10	JSW Power Trading Company Ltd	2.85	0.0008
11	National Energy Trading & Services Ltd.	1.14	0.0001
12	Knowledge Infrastructure Systems (P) Ltd	1.07	0.0001
13	Statkraft Markets Pvt. Ltd.	0.98	0.0001
14	My Home Power Private Ltd.	0.85	0.0001
15	Instinct Infra & Power Ltd.	0.75	0.0001
16	RPG Power Trading Company Ltd.	0.63	0.0000
17	Essar Electric Power Development Corp. Ltd.	0.60	0.0000
18	Customized Energy Solutions India (P) Ltd.	0.38	0.0000
19	Shyam Indus Power Solutions Private Limited	0.31	0.0000
20	Parshavanath Power Projects Private Limited	0.30	0.0000
21	Shree Cement Ltd.	0.21	0.0000
22	Gita Power & Infrastructure Private Limited	0.14	0.0000
23	Phillip Commodities India (P) Ltd.	0.02	0.0000
TOTAL		100.00%	0.1688
Top 5 trading licensees		72.29%	
<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>			

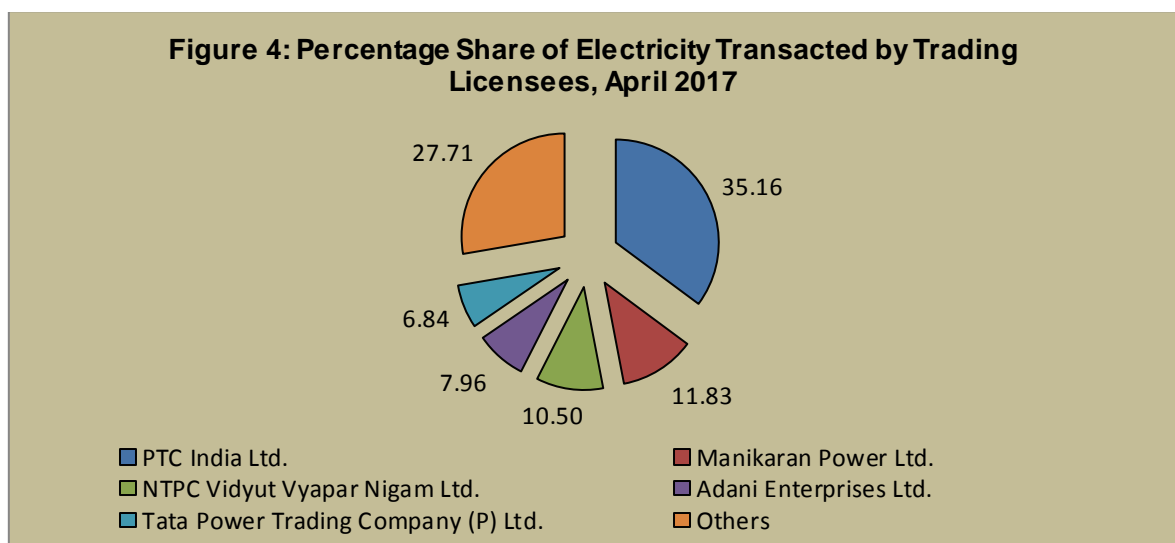


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, APRIL 2017		
Sr.No	Item	Sale Price of Traders (₹/kWh)
1	Minimum	2.40
2	Maximum	5.36
3	Weighted Average	3.46

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), APRIL 2017		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	3.57
2	PEAK	3.21
3	OFF PEAK	2.98

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, APRIL 2017			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	0.70	2.12
2	Maximum	4.70	3.84
3	Weighted Average	2.83	2.79

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, APRIL 2017			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	24.41	3.45
2	Day Ahead Contingency Contracts	34.36	3.15
	Total	58.77	3.27

Source: IEX

Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, APRIL 2017			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	11.62	3.56

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH DSM, APRIL 2017		
Sr.No	Item	Price in All India Grid (₹/kWh)
1	Minimum	0.00
2	Maximum	6.40
3	Average	1.90

Source: NLDC

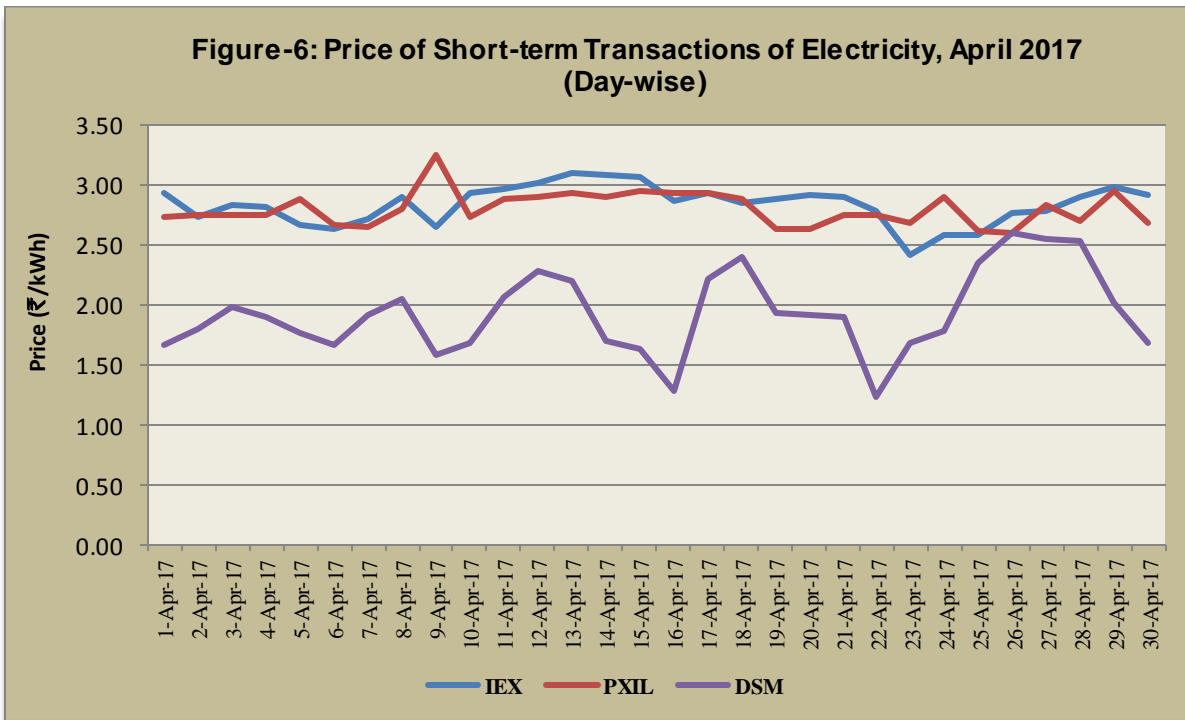
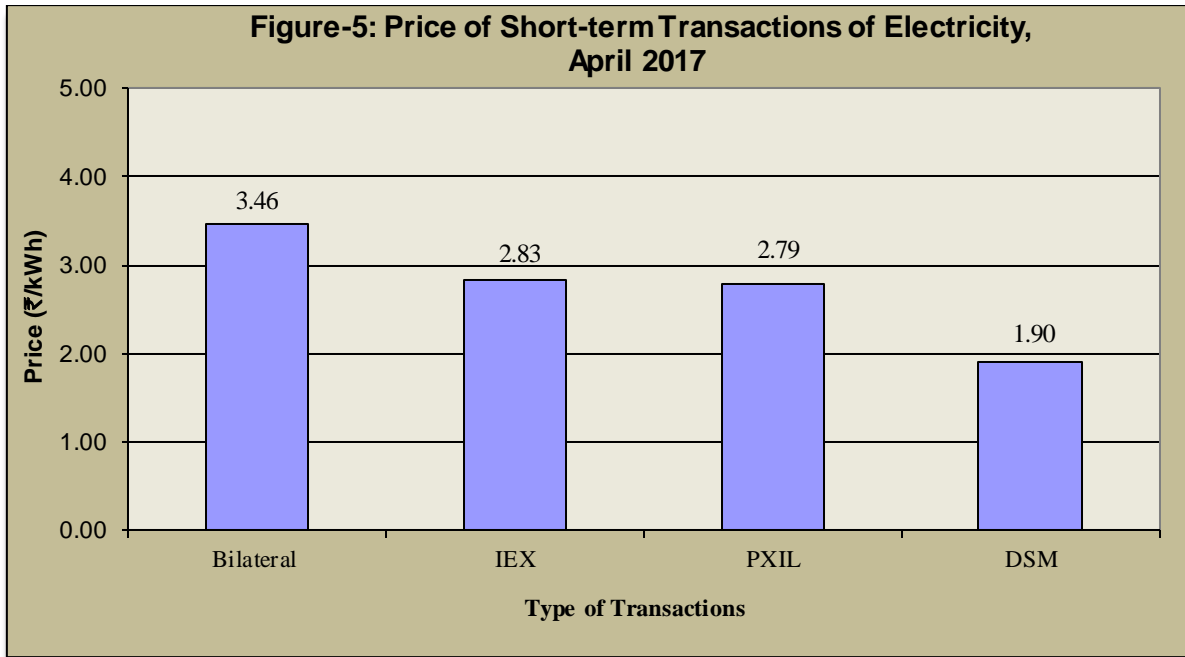


Table-9: VOLUME OF ELECTRICITY SOLD THROUGH BILATERAL, APRIL 2017		
Name of the Entity	Volume of Sale (MUs)	% of Volume
SEMBCORP	624.93	14.29
JAYPEE NIGRIE	326.40	7.46
ESSAR POWER	292.74	6.69
ILF&S	289.45	6.62
MP	268.75	6.15
DB POWER	254.43	5.82
KORBA WEST POWER	216.14	4.94
GMR KAMALANGA	182.85	4.18
WEST BENGAL	178.78	4.09
DELHI	165.57	3.79
GUJARAT	136.17	3.11
JITPL	128.49	2.94
HIMACHAL PRADESH	105.34	2.41
ADHUNIK POWER LTD	93.01	2.13
JINDAL POWER	78.35	1.79
RAJASTHAN	76.48	1.75
ANDHRA PRADESH	75.40	1.72
J & K	73.09	1.67
HARYANA	72.60	1.66
SHREE CEMENT	69.53	1.59
COASTGEN	54.34	1.24
PUNJAB	54.00	1.23
MEENAKSHI	51.63	1.18
SPECTRUM	50.60	1.16
ONGC PALATANA	46.80	1.07
DVC	46.14	1.06
MAHARASHTRA	40.17	0.92
BALCO	38.48	0.88
NTPC STATIONS-ER	37.23	0.85
ACBIL	34.91	0.80
TAMIL NADU	31.51	0.72
THERMAL POWERTECH	24.52	0.56
DAGACHU	21.41	0.49
SIMHAPURI	19.54	0.45
JINDAL STAGE-II	14.80	0.34
KARNATAKA	12.77	0.29
TELANGANA	11.78	0.27
MAITHON POWER LTD	9.98	0.23
LANKO_AMK	9.60	0.22
CHUZACHEN HEP	9.55	0.22
UTTARAKHAND	8.91	0.20
MEGHALAYA	7.83	0.18
MARUTI COAL	7.79	0.18
TEESTA STG3	7.16	0.16
SIKKIM	6.25	0.14
AD HYDRO	3.90	0.09
ODISHA	2.63	0.06
DIKCHU HEP	0.43	0.01
Total	4373.14	100.00
Volume Sold by top 5 Regional Entities	1802.26	41.21

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

Name of the Entity	Volume of Purchase (MUs)	% of Volume
TAMIL NADU	661.76	15.33
MAHARASHTRA	484.59	11.23
WEST BENGAL	400.35	9.28
TELANGANA	372.08	8.62
CHHATTISGARH	345.76	8.01
ESSAR STEEL	277.45	6.43
BIHAR	268.42	6.22
KARNATAKA	179.94	4.17
BANGLADESH	177.84	4.12
UTTAR PRADESH	161.13	3.73
UTTARAKHAND	157.93	3.66
JHARKHAND	151.66	3.51
ANDHRA PRADESH	149.65	3.47
NEPAL(NVVN)	97.75	2.27
KERALA	80.34	1.86
HARYANA	64.25	1.49
HIMACHAL PRADESH	54.00	1.25
ASSAM	45.34	1.05
GOA	37.76	0.87
ODISHA	36.91	0.86
DELHI	36.63	0.85
PUNJAB	30.43	0.71
RAJASTHAN	15.02	0.35
MP	11.80	0.27
DVC	9.98	0.23
GUJARAT	5.47	0.13
TRIPURA	0.86	0.02
BALCO	0.62	0.01
TOTAL	4315.74	100.00
Volume Purchased by top 5 Regional Entities	2264.54	52.47

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

Name of the Entity	Volume of Sale (MUs)	% of Volume
MP	356.83	9.53
HIMACHAL PRADESH	350.31	9.36
JINDAL POWER	279.86	7.48
KARCHAM WANGTOO	170.43	4.55
DB POWER	163.32	4.36
TEESTA STG3	151.95	4.06
KORBA WEST POWER	143.29	3.83
J & K	136.77	3.65
HARYANA	134.80	3.60
DVC	128.35	3.43
GUJARAT	118.90	3.18
JHABUA POWER_MP	117.70	3.14
CHHATTISGARH	108.33	2.89
JAYPEE NIGRIE	105.55	2.82
SEMBCORP	74.24	1.98
BALCO	66.79	1.78
THERMAL POWERTECH	65.16	1.74
ODISHA	63.30	1.69
NLC	58.63	1.57
TRIPURA	57.68	1.54
JITPL	54.24	1.45
RAJASTHAN	52.89	1.41
TELANGANA	47.29	1.26
UTTARAKHAND	46.44	1.24
AD HYDRO	46.40	1.24
JINDAL STAGE-II	45.25	1.21
MEENAKSHI	43.89	1.17
MB POWER	42.07	1.12
ASSAM	41.81	1.12
DELHI	40.93	1.09
UTTAR PRADESH	40.55	1.08
ESSAR POWER	38.04	1.02
SIKKIM	29.27	0.78
ADHUNIK POWER LTD	23.13	0.62
PUNJAB	21.61	0.58
COASTGEN	19.83	0.53
NTPC STATIONS-WR	19.20	0.51
MAHARASHTRA	18.26	0.49
ILF&S	17.52	0.47
CHUZACHEN HEP	16.62	0.44
KARNATAKA	15.61	0.42
MANIPUR	15.21	0.41
JORETHANG	14.78	0.39
ACBIL	14.54	0.39
NJPC	13.68	0.37
SHREE CEMENT	11.19	0.30
ANDHRA PRADESH	10.87	0.29
GOA	9.48	0.25
DIKCHU HEP	8.99	0.24

SPECTRUM	8.18	0.22
TAMIL NADU	7.35	0.20
MEGHALAYA	6.65	0.18
MAITHON POWER LTD	6.22	0.17
MIZORAM	4.84	0.13
RKM POWER	4.84	0.13
SIMHAPURI	3.63	0.10
KERALA	3.55	0.09
GMR KAMALANGA	3.26	0.09
WEST BENGAL	3.17	0.08
MARUTI COAL	2.86	0.08
MALANA	2.79	0.07
EMCO	2.72	0.07
LANCO BUDHIL	2.47	0.07
NTPC STATIONS-ER	2.45	0.07
CHANDIGARH	2.37	0.06
NTPC STATIONS-NER	1.65	0.04
NETCL VALLUR	1.38	0.04
DHARIWAL POWER	0.71	0.02
NAGALAND	0.59	0.02
NTPC STATIONS-SR	0.35	0.01
Total	3743.82	100.00
Volume sold by top 5 Regional Entities	1320.74	35.28

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

Name of the Entity	Volume of Purchase (MUs)	% of Volume
GUJARAT	467.04	12.47
MAHARASHTRA	454.34	12.14
WEST BENGAL	423.88	11.32
RAJASTHAN	286.53	7.65
ANDHRA PRADESH	261.67	6.99
KARNATAKA	256.38	6.85
BIHAR	223.48	5.97
TELANGANA	214.95	5.74
UTTAR PRADESH	212.66	5.68
HARYANA	186.55	4.98
KERALA	149.44	3.99
DELHI	100.50	2.68
PUNJAB	88.41	2.36
ASSAM	87.53	2.34
DADRA & NAGAR HAVELI	67.61	1.81
ODISHA	47.13	1.26
UTTARAKHAND	38.23	1.02
DAMAN AND DIU	36.21	0.97
CHHATTISGARH	32.51	0.87
HIMACHAL PRADESH	20.72	0.55
MEGHALAYA	18.56	0.50
ARUNACHAL PRADESH	11.67	0.31
CHANDIGARH	9.85	0.26
GOA	8.74	0.23
J & K	8.40	0.22
NAGALAND	8.35	0.22
TAMIL NADU	8.35	0.22
DVC	5.26	0.14
MANIPUR	3.65	0.10
MP	2.65	0.07
ESSAR STEEL	0.90	0.02
PONDICHERRY	0.87	0.02
MIZORAM	0.50	0.01
TRIPURA	0.32	0.01
TOTAL	3743.82	100.00
Volume purchased by top 5 Regional Entities	1893.45	50.58

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

Name of the Entity	Volume of Under drawal (MUs)	% of Volume
GUJARAT	100.27	6.16
NTPC STATIONS-WR	97.24	5.98
TAMIL NADU	93.23	5.73
PUNJAB	89.20	5.48
TELANGANA	80.24	4.93
HARYANA	72.21	4.44
UTTAR PRADESH	64.35	3.96
MP	61.81	3.80
NHPC STATIONS	57.85	3.56
MAHARASHTRA	56.30	3.46
NLC	52.24	3.21
NTPC STATIONS-NR	49.48	3.04
RAJASTHAN	43.12	2.65
BIHAR	42.91	2.64
DVC	42.65	2.62
SASAN UMPP	42.09	2.59
DELHI	39.91	2.45
CHHATTISGARH	34.75	2.14
HIMACHAL PRADESH	32.61	2.00
ANDHRA PRADESH	30.74	1.89
WEST BENGAL	26.79	1.65
UTTARAKHAND	22.04	1.35
ODISHA	21.77	1.34
KARNATAKA	20.96	1.29
NTPC STATIONS-ER	19.29	1.19
NTPC STATIONS-SR	18.27	1.12
ESSAR STEEL	14.98	0.92
TRIPURA	14.60	0.90
JINDAL POWER	13.75	0.85
NEEPCO STATIONS	12.17	0.75
MEGHALAYA	11.72	0.72
GMR KAMALANGA	11.65	0.72
NJPC	11.49	0.71
JITPL	10.07	0.62
LANKO_AMK	9.71	0.60
KARCHAM WANGTOO	9.24	0.57
TEESTA STG3	9.15	0.56
SIKKIM	8.40	0.52
PONDICHERRY	8.19	0.50
TEESTA HEP	7.85	0.48
JHARKHAND	7.83	0.48
BANGLADESH	7.51	0.46
MANIPUR	7.20	0.44
NSPCL	7.16	0.44
JINDAL STAGE-II	6.78	0.42
ASSAM	5.91	0.36
DB POWER	5.81	0.36
GOA	5.68	0.35

CHUZACHEN HEP	5.38	0.33
DCPP	5.32	0.33
THERMAL POWERTECH	5.18	0.32
MAITHON POWER LTD	5.06	0.31
NEPAL(NVVN)	4.71	0.29
CGPL	4.62	0.28
EMCO	4.59	0.28
JORETHANG	4.24	0.26
KSK MAHANADI	4.09	0.25
JAYPEE NIGRIE	3.67	0.23
AD HYDRO	3.57	0.22
NAGALAND	3.55	0.22
ADHUNIK POWER LTD	3.17	0.19
ARUNACHAL PRADESH	3.12	0.19
SHREE CEMENT	3.12	0.19
RKM POWER	2.97	0.18
JHABUA POWER_MP	2.94	0.18
ACBIL	2.84	0.17
MEENAKSHI	2.84	0.17
BALCO	2.57	0.16
MB POWER	2.56	0.16
CHANDIGARH	2.06	0.13
SEBPCORP	2.00	0.12
DADRA & NAGAR HAVELI	1.91	0.12
COASTGEN	1.79	0.11
RANGANADI HEP	1.78	0.11
RANGIT HEP	1.76	0.11
ESSAR POWER	1.72	0.11
KORBA WEST POWER	1.67	0.10
MIZORAM	1.63	0.10
KERALA	1.62	0.10
ILF&S	1.55	0.10
NETCL VALLUR	1.48	0.09
DAMAN AND DIU	1.29	0.08
URI-2	1.08	0.07
DAGACHU	1.03	0.06
LOKTAK	0.92	0.06
DHARIWAL POWER	0.85	0.05
SIMHAPURI	0.46	0.03
DOYANG HEP	0.39	0.02
MALANA	0.28	0.02
LANCO BUDHIL	0.18	0.01
Total	1626.73	100.00
Volume Exported by top 5 Regional Entities	460.17	28.29

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

Name of the Entity	Volume of Over drawal (MUs)	% of Volume
RGPPL (DABHOL)	654.63	26.79
UTTAR PRADESH	122.81	5.03
NTPC STATIONS-NR	83.99	3.44
MAHARASHTRA	82.41	3.37
ANDHRA PRADESH	74.43	3.05
NTPC STATIONS-ER	72.69	2.98
RAJASTHAN	72.55	2.97
NTPC STATIONS-WR	70.33	2.88
WEST BENGAL	68.96	2.82
BIHAR	60.99	2.50
KERALA	60.96	2.50
JHARKHAND	60.45	2.47
KARNATAKA	58.52	2.40
HARYANA	52.15	2.13
TAMIL NADU	47.94	1.96
ASSAM	47.21	1.93
ODISHA	39.23	1.61
PUNJAB	36.19	1.48
MP	35.62	1.46
GOA	35.18	1.44
NTPC STATIONS-SR	33.02	1.35
ESSAR STEEL	28.93	1.18
BALCO	28.59	1.17
GUJARAT	27.83	1.14
HIMACHAL PRADESH	27.68	1.13
UTTARAKHAND	26.41	1.08
DADRA & NAGAR HAVELI	21.52	0.88
CGPL	21.01	0.86
CHHATTISGARH	20.44	0.84
NETCL VALLUR	18.41	0.75
DELHI	18.09	0.74
DVC	18.01	0.74
TEESTA STG3	17.52	0.72
TELANGANA	17.15	0.70
TRIPURA	14.54	0.60
ILF&S	11.46	0.47
DAMAN AND DIU	11.30	0.46
NLC	10.91	0.45
MB POWER	10.89	0.45
THERMAL POWERTECH	10.57	0.43
JHABUA POWER_MP	10.55	0.43
CHANDIGARH	9.46	0.39
ARUNACHAL PRADESH	9.31	0.38
NAGALAND	8.73	0.36
ACBIL	8.44	0.35
SEMBCORP	8.10	0.33
KORBA WEST POWER	7.48	0.31
MIZORAM	6.96	0.28
DAGACHU	6.72	0.28

JITPL	6.62	0.27
RKM POWER	6.57	0.27
GMR KAMALANGA	6.57	0.27
EMCO	6.00	0.25
DCPP	5.99	0.25
NSPCL	5.69	0.23
SIKKIM	5.63	0.23
KARCHAM WANGTOO	5.41	0.22
LANCO BUDHIL	5.31	0.22
JAYPEE NIGRIE	5.28	0.22
NJPC	4.92	0.20
NHPC STATIONS	4.53	0.19
DB POWER	4.49	0.18
MANIPUR	4.31	0.18
JINDAL POWER	4.07	0.17
JINDAL STAGE-II	4.03	0.16
TRN ENERGY	3.96	0.16
AD HYDRO	3.60	0.15
ADHUNIK POWER LTD	3.43	0.14
COASTGEN	3.37	0.14
MEGHALAYA	3.19	0.13
MAITHON POWER LTD	3.15	0.13
MEENAKSHI	3.02	0.12
JORETHANG	2.96	0.12
SIMHAPURI	2.63	0.11
SHREE CEMENT	2.51	0.10
BANGLADESH	2.11	0.09
CHUZACHEN HEP	1.96	0.08
DGEN MEGA POWER	1.93	0.08
PONDICHERRY	1.67	0.07
ESSAR POWER	1.61	0.07
SASAN UMPP	1.53	0.06
GMR CHATTISGARH	1.36	0.06
NEEPCO STATIONS	1.29	0.05
LANKO KONDAPALLI	0.94	0.04
RANGANADI HEP	0.78	0.03
RANGIT HEP	0.69	0.03
NEPAL(NVVN)	0.67	0.03
MALANA	0.51	0.02
LANKO_AMK	0.45	0.02
DOYANG HEP	0.33	0.01
DHARIWAL POWER	0.24	0.01
LOKTAK	0.23	0.01
URI-2	0.19	0.01
TOTAL	2443.16	100.00
Volume Imported by top 5 Regional Entities	1018.28	41.68

Table-15: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY-WISE), APRIL 2017		
Sr.No.	Name of the Entity	Total volume of net short-term transactions of electricity*
1	MAHARASHTRA	906.61
2	WEST BENGAL	684.44
3	RGPPL (DABHOL)	654.63
4	TAMIL NADU	585.95
5	BIHAR	509.99
6	TELANGANA	464.86
7	KARNATAKA	445.51
8	UTTAR PRADESH	391.70
9	ANDHRA PRADESH	368.74
10	ESSAR STEEL	292.29
11	KERALA	285.57
12	CHHATTISGARH	255.63
13	JHARKHAND	204.27
14	RAJASTHAN	201.63
15	BANGLADESH	172.44
16	UTTARAKHAND	145.17
17	GUJARAT	145.00
18	ASSAM	132.38
19	NEPAL(NVFN)	93.71
20	DADRA & NAGAR HAVELI	87.21
21	GOA	66.52
22	DAMAN AND DIU	46.22
23	ODISHA	35.56
24	NTPC STATIONS-NR	34.51
25	HARYANA	23.34
26	ARUNACHAL PRADESH	17.86
27	CGPL	16.39
28	NETCL VALLUR	15.55
29	CHANDIGARH	14.88
30	NTPC STATIONS-SR	14.40
31	NTPC STATIONS-ER	13.72
32	NAGALAND	12.95
33	TRN ENERGY	3.95
34	LANCO BUDHIL	2.66
35	DGEN MEGA POWER	1.93
36	GMR CHATTISGARH	1.36
37	MIZORAM	0.99
38	LANKO KONDAPALLI	0.94
39	LOKTAK	-0.69
40	URI-2	-0.89
41	RANGANADI HEP	-1.00
42	RANGIT HEP	-1.07
43	RKM POWER	-1.24
44	EMCO	-1.32
45	DHARIWAL POWER	-1.33
46	NSPCL	-1.47
47	NTPC STATIONS-NER	-1.65
48	MALANA	-2.56
49	KSK MAHANADI	-4.00

50	MEGHALAYA	-4.43
51	PONDICHERRY	-5.65
52	TEESTA HEP	-7.77
53	DIKCHU HEP	-9.42
54	PUNJAB	-9.77
55	MARUTI COAL	-10.65
56	NEEPCO STATIONS	-10.88
57	MANIPUR	-14.46
58	DAGACHU	-15.72
59	JORETHANG	-16.06
60	MAITHON POWER LTD	-18.12
61	LANKO_AMK	-18.86
62	NJPC	-20.25
63	SIMHAPURI	-21.01
64	CHUZACHEN HEP	-29.60
65	MB POWER	-33.74
66	SIKKIM	-38.29
67	SASAN UMPP	-40.56
68	ACBIL	-43.85
69	NTPC STATIONS-WR	-46.11
70	ONGC PALATANA	-46.80
71	AD HYDRO	-50.27
72	NHPC STATIONS	-53.32
73	TRIPURA	-56.56
74	SPECTRUM	-58.78
75	JINDAL STAGE-II	-62.80
76	COASTGEN	-72.59
77	BALCO	-78.61
78	SHREE CEMENT	-81.32
79	THERMAL POWERTECH	-84.28
80	DELHI	-91.20
81	MEENAKSHI	-95.34
82	NLC	-99.96
83	JHABUA POWER_MP	-110.09
84	ADHUNIK POWER LTD	-115.87
85	TEESTA STG3	-150.74
86	KARCHAM WANGTOO	-174.27
87	DVC	-183.89
88	JITPL	-186.17
89	GMR KAMALANGA	-191.19
90	J & K	-201.46
91	ILF&S	-297.05
92	ESSAR POWER	-330.88
93	KORBA WEST POWER	-353.62
94	JINDAL POWER	-367.88
95	HIMACHAL PRADESH	-385.85
96	DB POWER	-419.07
97	JAYPEE NIGRIE	-430.34
98	MP	-637.31
99	SEMBCORP	-693.06

* 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, APRIL 2017			
	Details of Congestion	IEX	PXIL
A	Unconstrained Cleared Volume* (MUs)	3784.75	29.40
B	Actual Cleared Volume and hence scheduled (MUs)	3717.83	26.86
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	66.92	2.54
D	Volume of electricity that could not be cleared as % to Unconstrained Cleared Volume	1.77%	8.65%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	53.40%	18.99%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	17.95%	15.36%
	6.00 - 12.00 hours	27.89%	25.59%
	12.00 - 18.00 hours	36.15%	24.86%
	18.00 - 24.00 hours	18.01%	34.19%
<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
(DAY-WISE) (MUs), APRIL 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-Apr-17	64.93	64.37	132.75	1.61	75.57	3481.10
2-Apr-17	72.34	61.54	103.25	0.04	89.18	3361.32
3-Apr-17	75.44	63.72	125.20	0.04	91.13	3425.57
4-Apr-17	77.22	63.02	119.83	0.04	94.75	3431.09
5-Apr-17	73.80	59.32	120.96	1.84	115.56	3330.94
6-Apr-17	76.15	60.21	116.45	2.44	114.83	3351.10
7-Apr-17	78.78	60.83	127.42	2.36	98.24	3441.65
8-Apr-17	90.11	60.82	108.28	1.86	90.02	3429.65
9-Apr-17	86.75	57.55	98.34	0.20	98.76	3280.84
10-Apr-17	92.75	57.27	114.35	0.04	89.67	3336.50
11-Apr-17	95.16	58.74	108.00	2.33	79.17	3429.99
12-Apr-17	92.66	58.36	104.09	1.24	81.64	3503.56
13-Apr-17	92.27	57.49	112.35	1.24	82.16	3578.41
14-Apr-17	83.47	57.07	116.16	1.24	81.55	3539.58
15-Apr-17	83.53	56.81	126.80	1.24	84.55	3503.89
16-Apr-17	86.10	58.36	93.63	0.08	93.53	3349.08
17-Apr-17	85.68	58.80	114.08	0.04	97.78	3463.28
18-Apr-17	79.04	59.40	131.30	0.04	85.32	3574.91
19-Apr-17	84.39	53.02	149.22	0.04	86.72	3546.80
20-Apr-17	77.20	50.78	158.09	0.04	86.88	3480.51
21-Apr-17	82.78	54.33	148.45	0.04	99.35	3472.60
22-Apr-17	95.91	52.89	146.49	0.04	114.70	3364.32
23-Apr-17	89.99	57.00	118.94	0.04	93.52	3301.84
24-Apr-17	93.43	57.44	136.00	0.04	95.68	3364.71
25-Apr-17	85.59	56.75	128.97	2.19	92.27	3447.36
26-Apr-17	92.85	58.29	129.82	2.18	85.08	3501.45
27-Apr-17	94.17	55.65	134.15	2.19	99.84	3512.60
28-Apr-17	96.33	55.47	130.44	0.04	90.24	3558.56
29-Apr-17	96.89	60.76	132.01	2.14	84.63	3500.94
30-Apr-17	94.85	59.08	131.15	0.04	89.54	3374.20
Total	2570.58	1745.16	3716.96	26.86	2761.84	103238.35

Source: NLDC

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

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

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

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

Market Segment	Day ahead market of IEX			Day ahead market of PXIL			Under Drawl/Over Drawl from the Grid (DSM)		
Date	Minimum ACP	Maximum ACP	Weighted Average Price*	Minimum ACP	Maximum ACP	Weighted Average Price*	All India Grid		
							Minimum Price	Maximum Price	Average Price**
1-Apr-17	2.48	4.00	2.92	2.70	3.40	2.73	0.00	3.45	1.66
2-Apr-17	2.28	3.80	2.73	2.30	3.20	2.75	0.00	3.45	1.80
3-Apr-17	2.21	3.81	2.83	2.45	3.22	2.75	0.36	3.45	1.98
4-Apr-17	2.44	3.75	2.82	2.26	3.36	2.75	0.00	3.45	1.90
5-Apr-17	2.28	3.01	2.66	2.47	3.18	2.88	0.00	3.45	1.77
6-Apr-17	2.10	3.62	2.63	2.61	2.79	2.66	0.00	5.11	1.67
7-Apr-17	2.06	4.00	2.71	2.60	2.80	2.65	0.00	3.45	1.91
8-Apr-17	2.28	4.50	2.90	2.23	3.36	2.79	0.00	4.91	2.05
9-Apr-17	1.83	4.21	2.65	2.23	3.36	3.24	0.00	4.91	1.58
10-Apr-17	2.24	4.21	2.92	2.40	3.40	2.72	0.00	5.32	1.67
11-Apr-17	2.33	4.50	2.96	2.88	2.89	2.88	0.00	4.91	2.06
12-Apr-17	2.07	4.70	3.02	2.77	3.35	2.89	0.00	6.36	2.27
13-Apr-17	2.20	4.64	3.09	2.77	3.37	2.92	0.00	3.45	2.19
14-Apr-17	2.31	4.50	3.08	2.89	2.89	2.89	0.00	3.24	1.70
15-Apr-17	2.50	4.60	3.06	2.84	3.34	2.95	0.00	4.91	1.63
16-Apr-17	1.00	4.25	2.86	2.52	3.84	2.93	0.00	3.24	1.29
17-Apr-17	0.70	4.25	2.93	2.52	3.81	2.92	0.00	5.95	2.22
18-Apr-17	1.00	4.25	2.84	2.69	3.36	2.88	0.36	5.11	2.39
19-Apr-17	1.00	4.50	2.87	2.12	3.45	2.63	0.00	5.95	1.93
20-Apr-17	1.98	4.51	2.91	2.12	3.45	2.63	0.00	5.32	1.92
21-Apr-17	1.00	4.45	2.89	2.75	2.75	2.75	0.00	3.45	1.90
22-Apr-17	1.00	4.45	2.78	2.75	2.75	2.75	0.00	3.45	1.24
23-Apr-17	1.00	3.80	2.42	2.15	3.82	2.68	0.00	3.24	1.68
24-Apr-17	1.00	3.91	2.57	2.72	3.37	2.89	0.00	3.45	1.78
25-Apr-17	1.00	4.41	2.57	2.34	3.20	2.61	0.00	5.74	2.35
26-Apr-17	2.00	4.30	2.76	2.34	3.21	2.60	0.00	5.32	2.60
27-Apr-17	2.25	4.40	2.78	2.66	3.39	2.83	0.00	5.74	2.54
28-Apr-17	2.01	4.50	2.89	2.70	2.70	2.70	0.00	5.74	2.52
29-Apr-17	2.01	4.25	2.97	2.83	3.45	2.94	0.00	3.45	2.01
30-Apr-17	1.83	4.51	2.92	2.68	2.68	2.68	0.00	3.45	1.68
	0.70#	4.70#	2.83	2.12#	3.84#	2.79	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), APRIL 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	54.00	30.43	-23.57	21.61	88.41	66.81	36.19	89.20	-53.01	-9.77
Haryana	72.60	64.25	-8.35	134.80	186.55	51.75	52.15	72.21	-20.06	23.34
Rajasthan	76.48	15.02	-61.46	52.89	286.53	233.65	72.55	43.12	29.44	201.63
Delhi	165.57	36.63	-128.94	40.93	100.50	59.56	18.09	39.91	-21.82	-91.20
Uttar Pradesh	0.00	161.13	161.13	40.55	212.66	172.11	122.81	64.35	58.46	391.70
Uttarakhand	8.91	157.93	149.02	46.44	38.23	-8.21	26.41	22.04	4.37	145.17
HP	105.34	54.00	-51.34	350.31	20.72	-329.58	27.68	32.61	-4.93	-385.85
J & K	73.09	0.00	-73.09	136.77	8.40	-128.37	0.00	0.00	0.00	-201.46
Chandigarh	0.00	0.00	0.00	2.37	9.85	7.47	9.46	2.06	7.40	14.88
MP	268.75	11.80	-256.95	356.83	2.65	-354.18	35.62	61.81	-26.19	-637.31
Maharashtra	40.17	484.59	444.42	18.26	454.34	436.07	82.41	56.30	26.12	906.61
Gujarat	136.17	5.47	-130.70	118.90	467.04	348.14	27.83	100.27	-72.44	145.00
Chhattisgarh	0.00	345.76	345.76	108.33	32.51	-75.82	20.44	34.75	-14.31	255.63
Daman and Diu	0.00	0.00	0.00	0.00	36.21	36.21	11.30	1.29	10.01	46.22
Dadra & Nagar	0.00	0.00	0.00	0.00	67.61	67.61	21.52	1.91	19.61	87.21
Andhra Pradesh	75.40	149.65	74.25	10.87	261.67	250.80	74.43	30.74	43.69	368.74
Karnataka	12.77	179.94	167.17	15.61	256.38	240.77	58.52	20.96	37.57	445.51
Kerala	0.00	80.34	80.34	3.55	149.44	145.89	60.96	1.62	59.34	285.57
Tamil Nadu	31.51	661.76	630.24	7.35	8.35	1.00	47.94	93.23	-45.30	585.95
Pondicherry	0.00	0.00	0.00	0.00	0.87	0.87	1.67	8.19	-6.52	-5.65
Goa	0.00	37.76	37.76	9.48	8.74	-0.74	35.18	5.68	29.51	66.52
Telangana	11.78	372.08	360.30	47.29	214.95	167.65	17.15	80.24	-63.09	464.86
West Bengal	178.78	400.35	221.57	3.17	423.88	420.70	68.96	26.79	42.17	684.44
Odisha	2.63	36.91	34.28	63.30	47.13	-16.17	39.23	21.77	17.45	35.56
Bihar	0.00	268.42	268.42	0.00	223.48	223.48	60.99	42.91	18.08	509.99
Jharkhand	0.00	151.66	151.66	0.00	0.00	0.00	60.45	7.83	52.61	204.27
Sikkim	6.25	0.00	-6.25	29.27	0.00	-29.27	5.63	8.40	-2.77	-38.29
DVC	46.14	9.98	-36.15	128.35	5.26	-123.10	18.01	42.65	-24.64	-183.89
Arunachal Prad	0.00	0.00	0.00	0.00	11.67	11.67	9.31	3.12	6.19	17.86
Assam	0.00	45.34	45.34	41.81	87.53	45.72	47.21	5.91	41.31	132.38
Manipur	0.00	0.00	0.00	15.21	3.65	-11.56	4.31	7.20	-2.89	-14.46
Meghalaya	7.83	0.01	-7.82	6.65	18.56	11.91	3.19	11.72	-8.53	-4.43
Mizoram	0.00	0.00	0.00	4.84	0.50	-4.34	6.96	1.63	5.33	0.99
Nagaland	0.00	0.00	0.00	0.59	8.35	7.77	8.73	3.55	5.18	12.95
Tripura	0.00	0.86	0.86	57.68	0.32	-57.36	14.54	14.60	-0.06	-56.56
NTPC - NR	0.00	0.00	0.00	0.00	0.00	0.00	83.99	49.48	34.51	34.51
NHPC stations	0.00	0.00	0.00	0.00	0.00	0.00	4.53	57.85	-53.32	-53.32
NIPC	0.00	0.00	0.00	13.68	0.00	-13.68	4.92	11.49	-6.57	-20.25
Ad hydro	3.90	0.00	-3.90	46.40	0.00	-46.40	3.60	3.57	0.03	-50.27
Karcham Wangt	0.02	0.00	-0.02	170.43	0.00	-170.43	5.41	9.24	-3.83	-174.27
Shree Cement	69.53	0.00	-69.53	11.19	0.00	-11.19	2.51	3.12	-0.61	-81.32
Lanco budhil	0.00	0.00	0.00	2.47	0.00	-2.47	5.31	0.18	5.13	2.66
Malana	0.00	0.00	0.00	2.79	0.00	-2.79	0.51	0.28	0.23	-2.56
NTPC - WR	0.00	0.00	0.00	19.20	0.00	-19.20	70.33	97.24	-26.91	-46.11
Jindal power	78.35	0.00	-78.35	279.86	0.00	-279.86	4.07	13.75	-9.68	-367.88
Lanko_AMK	9.60	0.00	-9.60	0.00	0.00	0.00	0.45	9.71	-9.26	-18.86
NSPCL	0.00	0.00	0.00	0.00	0.00	0.00	5.69	7.16	-1.47	-1.47
ACBIL	34.91	0.00	-34.91	14.54	0.00	-14.54	8.44	2.84	5.60	-43.85
BALCO	38.48	0.62	-37.85	66.79	0.00	-66.79	28.59	2.57	26.03	-78.61
RGPPPL (Dabhol)	0.00	0.00	0.00	0.00	0.00	0.00	654.63	0.00	654.63	654.63
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	21.01	4.62	16.39	16.39

DCPP	0.00	0.00	0.00	0.00	0.00	0.00	5.99	5.32	0.66	0.66
EMCO	0.00	0.00	0.00	2.72	0.00	-2.72	6.00	4.59	1.40	-1.32
Essar steel	0.00	277.45	277.45	0.00	0.90	0.90	28.93	14.98	13.94	292.29
Ksk mahanadi	0.00	0.00	0.00	0.00	0.00	0.00	0.09	4.09	-4.00	-4.00
Essar power	292.74	0.00	-292.74	38.04	0.00	-38.04	1.61	1.72	-0.11	-330.88
Jindal stage-II	14.80	0.00	-14.80	45.25	0.00	-45.25	4.03	6.78	-2.75	-62.80
DB Power	254.43	0.00	-254.43	163.32	0.00	-163.32	4.49	5.81	-1.33	-419.07
Jaypee Nigrie	326.40	0.00	-326.40	105.55	0.00	-105.55	5.28	3.67	1.61	-430.34
Korba West Pow	216.14	0.00	-216.14	143.29	0.00	-143.29	7.48	1.67	5.81	-353.62
MB Power	0.00	0.00	0.00	42.07	0.00	-42.07	10.89	2.56	8.33	-33.74
Maruti Coal	7.79	0.00	-7.79	2.86	0.00	-2.86	0.00	0.00	0.00	-10.65
Spectrum	50.60	0.00	-50.60	8.18	0.00	-8.18	0.00	0.00	0.00	-58.78
Jhabua MP	0.00	0.00	0.00	117.70	0.00	-117.70	10.55	2.94	7.61	-110.09
Sasan UMPP	0.00	0.00	0.00	0.00	0.00	0.00	1.53	42.09	-40.56	-40.56
TRN Energy	0.00	0.00	0.00	0.00	0.00	0.00	3.96	0.01	3.95	3.95
RKM Power	0.00	0.00	0.00	4.84	0.00	-4.84	6.57	2.97	3.60	-1.24
NTPC-SR	0.00	0.00	0.00	0.35	0.00	-0.35	33.02	18.27	14.75	14.40
Simhapuri	19.54	0.00	-19.54	3.63	0.00	-3.63	2.63	0.46	2.16	-21.01
Meenakshi	51.63	0.00	-51.63	43.89	0.00	-43.89	3.02	2.84	0.18	-95.34
Coastgen	54.34	0.00	-54.34	19.83	0.00	-19.83	3.37	1.79	1.58	-72.59
Thermal Powert	24.52	0.00	-24.52	65.16	0.00	-65.16	10.57	5.18	5.39	-84.28
ILF&S	289.45	0.00	-289.45	17.52	0.00	-17.52	11.46	1.55	9.91	-297.05
NLC	0.00	0.00	0.00	58.63	0.00	-58.63	10.91	52.24	-41.33	-99.96
SEMBCORP	624.93	0.00	-624.93	74.24	0.00	-74.24	8.10	2.00	6.10	-693.06
NETCL Vallur	0.00	0.00	0.00	1.38	0.00	-1.38	18.41	1.48	16.92	15.55
NTPC-ER	37.23	0.00	-37.23	2.45	0.00	-2.45	72.69	19.29	53.40	13.72
Maithon Power	9.98	0.00	-9.98	6.22	0.00	-6.22	3.15	5.06	-1.91	-18.12
Adhunik Power	93.01	0.00	-93.01	23.13	0.00	-23.13	3.43	3.17	0.26	-115.87
Chuzachen HEP	9.55	0.00	-9.55	16.62	0.00	-16.62	1.96	5.38	-3.42	-29.60
Gmr Kamalanga	182.85	0.00	-182.85	3.26	0.00	-3.26	6.57	11.65	-5.09	-191.19
JITPL	128.49	0.00	-128.49	54.24	0.00	-54.24	6.62	10.07	-3.45	-186.17
Teesta HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.08	7.85	-7.77	-7.77
Dagachu	21.41	0.00	-21.41	0.00	0.00	0.00	6.72	1.03	5.69	-15.72
Jorethang	0.00	0.00	0.00	14.78	0.00	-14.78	2.96	4.24	-1.28	-16.06
Nepal(NVVN)	0.00	97.75	97.75	0.00	0.00	0.00	0.67	4.71	-4.04	93.71
Bangladesh	0.00	177.84	177.84	0.00	0.00	0.00	2.11	7.51	-5.40	172.44
Teesta STG3	7.16	0.00	-7.16	151.95	0.00	-151.95	17.52	9.15	8.36	-150.74
Dikchu HEP	0.43	0.00	-0.43	8.99	0.00	-8.99	0.00	0.00	0.00	-9.42
NEEPCO station	0.00	0.00	0.00	0.00	0.00	0.00	1.29	12.17	-10.88	-10.88
ONGC palatana	46.80	0.00	-46.80	0.00	0.00	0.00	0.00	0.00	0.00	-46.80
TOTAL	4373.14	4315.74	-57.40	3743.82	3743.82	0.00	2443.16	1626.73	816.42	759.02

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 May, 2017

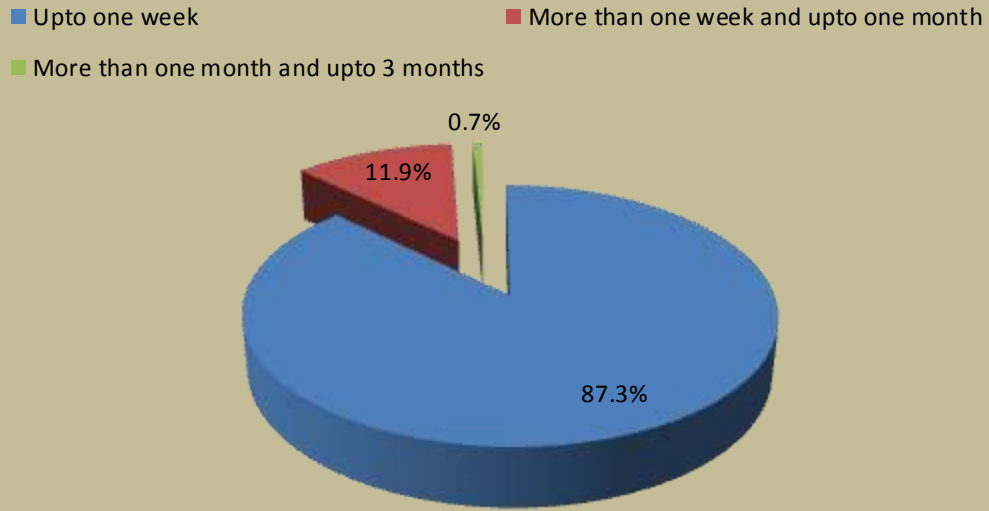


Figure-8: Forward Curve based on Prices of Bilateral Contracts

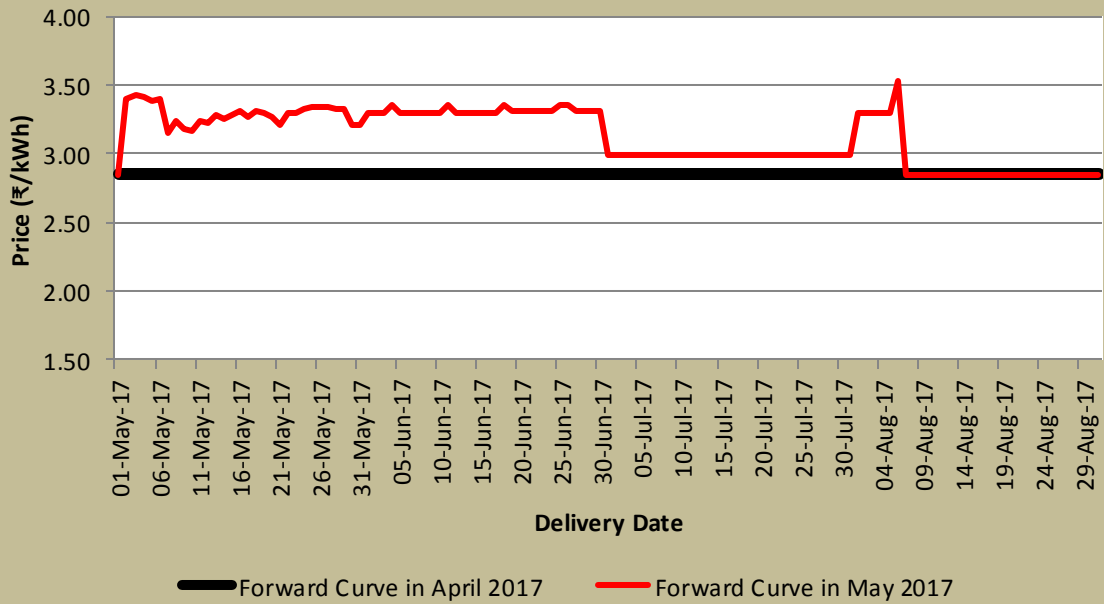


Table-20 : VOLUME AND PRICE OF RENEWABLE ENERGY CERTIFICATES (RECs) TRANSACTED THROUGH POWER EXCHANGES, APRIL 2017					
Sr.No.	Details of REC Transactions	IEX		PXIL	
		Solar	Non-Solar	Solar	Non Solar
A	Volume of Buy Bid	88533	364820	119869	173551
B	Volume of Sell Bid	3498912	7995985	1368182	3946496
C	Ratio of Buy Bid to Sell Bid Volume	0.025	0.046	0.088	0.044
D	Market Clearing Volume (MWh)	88533	364820	119869	173551
E	Market Clearing Price (₹/MWh)	1000	1000	1000	1000

Source: IEX and PXIL

Note 1: 1 REC = 1 MWh

Note 2:

<i>Forbearance and Floor Price w.e.f 1st April 2017</i>		
Type of REC	<i>Floor Price (₹/MWh)</i>	<i>Forbearance Price (₹/MWh)</i>
<i>Solar</i>	<i>1000.00</i>	<i>2500.00</i>
<i>Non-Solar</i>	<i>1000.00</i>	<i>2900.00</i>