Monthly Report on Short-term Transactions of Electricity in India

May, 2017

Economics Division
Central Electricity Regulatory Commission
36, Janpath, Chanderlok Building

Contents

List of Tables and Figures

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 **May, 2017** are as under:

I: Volume of Short-term Transactions of Electricity

During May 2017, total electricity generation excluding generation from renewable and captive power plants in India was 106968.60 MUs (Table-1).

Of the total electricity generation, 11644.95 MUs (10.89%) was transacted through short-term, comprising of 4789.52 MUs (4.48%) through bilateral (through traders and term-ahead contracts on power exchanges and directly between distribution companies), followed by 4105.31 MUs (3.84%) through day ahead collective transactions on power exchanges (IEX and PXIL) and 2750.12 MUs (2.57%) through DSM (Table-1 & Figure-2).

Of the total short-term transactions, bilateral constitutes 41.13% (28.85% through traders and term-ahead contracts on power exchanges and 12.28% directly between distribution companies) followed by 35.25% through day ahead collective transactions on power exchanges and 23.62% 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 May, 2017. In May, 2017, 23 trading licensees were engaged in short term trading. Top 5 trading licensees had a share of 73.83% in the total volume traded by all the licensees. These are PTC India Ltd., NTPC Vidyut Vyapar Nigam Ltd., Manikaran Power Ltd., Mittal Processor (P) 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 0.1945 for the month of May, 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 4100.01 MUs and 5.30 MUs respectively. The volume of total buy bids and sell bids was 5083.88 MUs and 6213.37 MUs respectively in IEX while the same was 30.32 MUs and 73.31 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 64.03 MUs and 41.11 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 ₹2.33/kWh, ₹4.98/kWh and ₹3.53/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 ₹3.64/kWh, ₹3.47/kWh, and ₹3.16/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 ₹0.95/kWh, ₹6.10/kWh and ₹2.98/kWh respectively in IEX and ₹0.00/kWh, ₹4.01/kWh and ₹2.99/kWh respectively in PXIL (Table-5).

The price of electricity transacted through IEX and PXIL in the term-ahead market was ₹3.64/kWh and ₹3.36/kWh respectively (Table-6 and Table-7).

(iii*) Price of electricity transacted through DSM:* The average deviation settlement price was ₹1.85/kWh. The minimum and maximum deviation settlement prices were ₹0.00/kWh and ₹7.20/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 Entity[1]-Wise)

Of the total bilateral transactions, top 5 regional entities sold 45.62% of the volume, and these were Sembcorp Gayatri Power Ltd, Himachal Pradesh, Jammu & Kashmir, Essar Power Limited and Diligent Power Pvt. Ltd. Top 5 regional entities purchased 51.67% of the volume, and these were Maharashtra, Tamil Nadu, Delhi, Uttar Pradesh and Bihar (Table-9 & 10).

Of the total power exchange transactions, top 5 regional entities sold 48.18% of the volume, and these were Madhya Pradesh, Teesta Stage 3 Hydro Power Project, Jaypee Karcham Hydro Corporation Limited, Himachal Pradesh and Jaypee Nigrie Super Thermal Power Project. Top 5 regional entities purchased 50.55% of the volume, and these were Gujarat, Punjab, West Bengal, Maharashtra and Karnataka (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 31.03% of the volume, and these were Telangana, Tamil Nadu, Gujarat, Uttar Pradesh and Maharashtra (Table-13). Top 5 regional entities overdrew 26.41% of the volume, and these were Andhra Pradesh, Maharashtra, Rajasthan, Uttar Pradesh, NTPC Stations (NR) (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, Himachal Pradesh, Madhya Pradesh, Jammu & Kashmir and Teesta Stage 3 Hydro Power Project. Top 5 electricity purchasing regional entities were Maharashtra, Bihar, Gujarat, Punjab and Uttar Pradesh.

IV: Congestion[2] on Inter-State Transmission Corridor for Day-Ahead Market on Power Exchanges

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

In the month of May, 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 0.26% and 5.88% of the unconstrained cleared volume respectively. In terms of time, congestion occurred was 13.17% in IEX and 2.49% in PXIL (Table-16).

V: Bilateral Contracts executed by Traders

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

(i) ***Duration of bilateral contracts:*** During June, 2017, a total of 114 bilateral contracts (excluding banking/swap contracts) have been executed by traders for the volume of 2203.72 MUs. Figure-7 shows the percentage of contracts categorized according to the period of power supply. It can be observed from the figure that 78.95% of the bilateral contracts were executed for duration of up to one week, 20.18% of the contracts were executed for duration of more than a week and up to one month, no bilateral contracts were executed for duration for more than one month and upto 3 months, and only 0.88% of the bilateral contracts were executed for duration for more than three months and upto 12 months.

During the month, 52 banking/swapping bilateral contracts were also executed for the volume of 391.47 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 June, 2017 to 29th September, 2017 based on the bilateral contracts[4] executed till June, 2017. Forward curves have been drawn for the contracts executed in May, 2017 and June, 2017 for the purpose of comparison. It is observed that forward contract prices are higher for the contracts executed in June, 2017 compared to the contracts executed in May, 2017 till 31st July 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 May, 2011.

In May 2017, the Supreme Court has stayed trading in Renewable Energy Certificates (RECs). Hence, there were no transactions of REC during the period.

[4]*Excluding Banking/Swapping contracts*

VII: Inferences:

- The percentage of short-term transactions of electricity to total electricity generation was 10.89%.

- Of the total short-term transactions of electricity, 41.13% was transacted through bilateral (through traders and term ahead contracts on power exchanges and directly by distribution companies), followed by 35.25% through power exchanges and 23.62% through DSM.

- Top 5 trading licensees had a share of 73.83% in the total volume traded by all the trading licensees.

- The Herfindahl Hirschman Index computed for the volume of electricity traded by trading licensees was 0.1945, indicating moderate concentration of market power.

- The weighted average price of electricity transacted through trading licensees was ₹3.53/kWh. The weighted average prices of electricity transacted through IEX and PXIL were ₹2.98/kWh and ₹2.99/kWh respectively.

- The average price of electricity transacted through DSM was ₹1.85/kWh.

- Top 5 electricity selling regional entities were Sembcorp Gayatri Power Ltd, Himachal Pradesh, Madhya Pradesh, Jammu & Kashmir and Teesta Stage 3 Hydro Power Project. Top 5 electricity purchasing regional entities were Maharashtra, Bihar, Gujarat, Punjab and Uttar Pradesh.

- The volume of electricity that could not be cleared in IEX and PXIL due to congestion was 0.26% and 5.88% of the unconstrained cleared volume respectively. In terms of time, congestion occurred was 13.17% in IEX and 2.49% in PXIL.

- In June, 2017, 78.95% of the bilateral contracts were executed for duration of up to one week, 20.18% of the contracts were executed for duration of more than a week and up to one month, no bilateral contracts were executed for duration of more than one month and upto 3 months, and only 0.88% 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 June, 2017 to 29th September, 2017 based on the bilateral contracts[5] executed till June, 2017 shows that forward contract prices are higher for the contracts executed in June, 2017 compared to the contracts executed in May, 2017 till 31st July 2017, afterward, the prices of both the contracts have been moving together.

- In May 2017, the Supreme Court has stayed trading in Renewable Energy Certificates (RECs). Hence, there were no transactions of REC during the period.

[5]*Excluding Banking/Swapping contracts*

Table-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (ALL INDIA), MAY 2017				
Sr.No	**Short-term transactions**	**Volume (MUs)**	**% to Volume of short-term transactions**	**% to Total Generation**
1	Bilateral	4789.52	41.13	4.48
	(i) Through Traders and PXs	3360.06	28.85	3.14
	(ii) Direct	1429.46	12.28	1.34
2	Through Power Exchanges	4105.31	35.25	3.84
	(i) IEX	4100.01	35.21	3.83
	(ii) PXIL	5.30	0.05	0.005
3	Through DSM	2750.12	23.62	2.57
	Total	**11644.95**	**-**	**10.89**
	Total Generation	**106968.60**	-	-
Source: NLDC				

Figure-1: Volume of Short-term Transactions of Electricity, May 2017

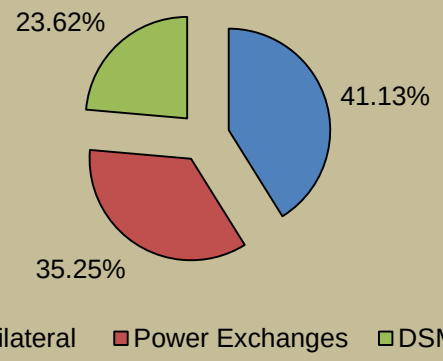


Figure-2: Volume of Various Kinds of Electricity Transactions in Total Electricity Generation, May 2017

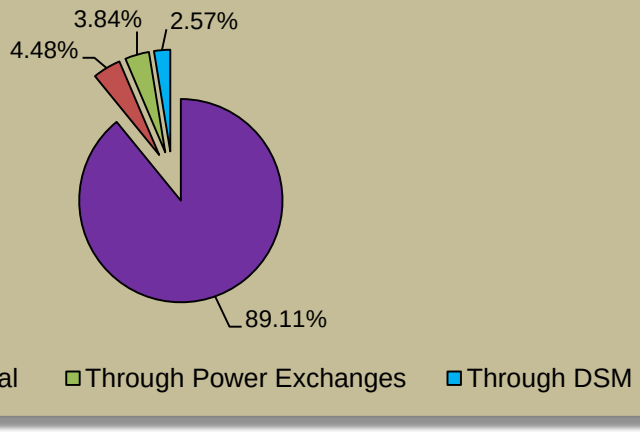


Figure-3: Volume of Short-term Transactions of Electricity, May 2017 (Day-wise)

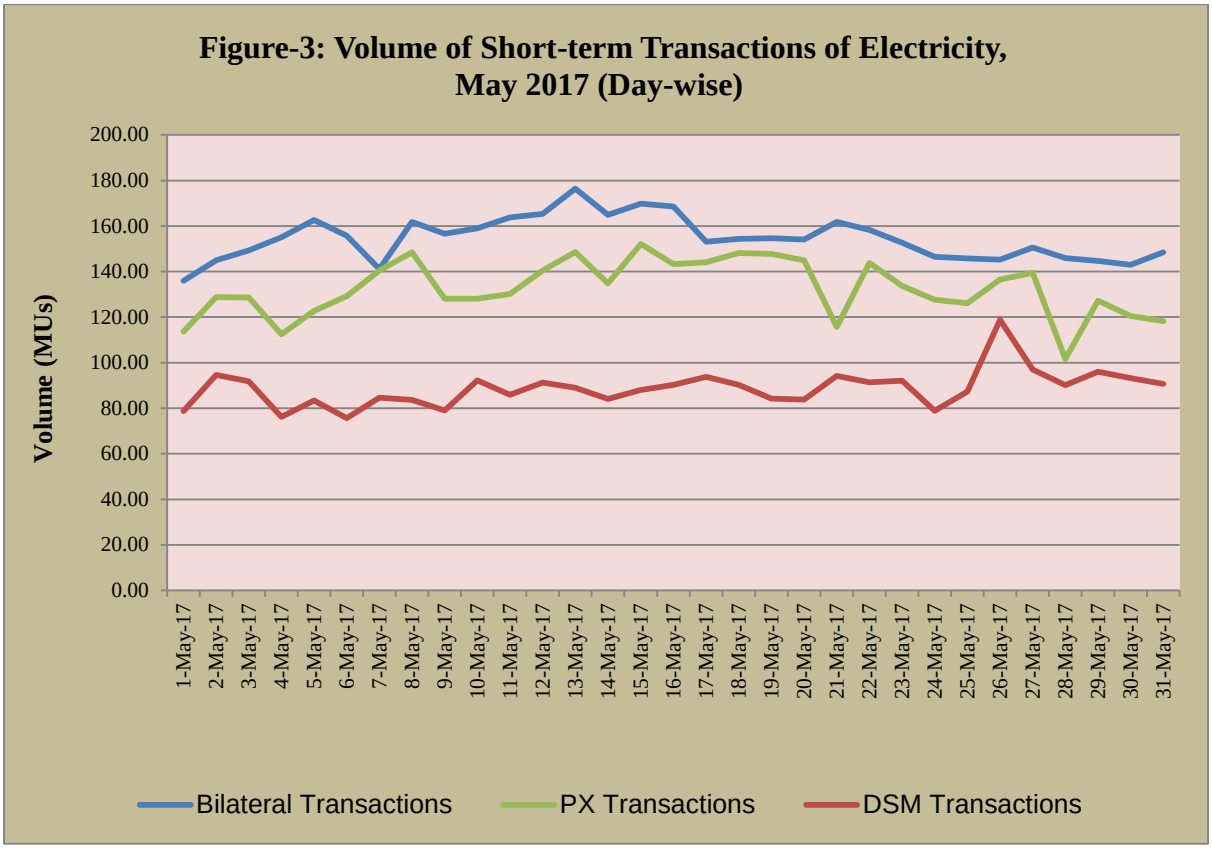


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, MAY 2017			
Sr.No	**Name of the Trading Licensee**	**% Share in total Volume transacted by Trading Licensees**	**Herfindahl-Hirschman Index**
1	PTC India Ltd.	39.34	0.1547
2	NTPC Vidyut Vyapar Nigam Ltd.	9.77	0.0096
3	Manikaran Power Ltd.	9.66	0.0093
4	Mittal Processors (P) Ltd.	7.90	0.0062
5	Tata Power Trading Company (P) Ltd.	7.16	0.0051
6	Arunachal Pradesh Power Corporation (P) ltd	5.93	0.0035
7	Jaiprakash Associates Ltd.	4.61	0.0021
8	JSW Power Trading Company Ltd	4.28	0.0018
9	GMR Energy Trading Ltd.	3.25	0.0011
10	Adani Enterprises Ltd.	2.20	0.0005
11	Knowledge Infrastructure Systems (P) Ltd	1.21	0.0001
12	Statkraft Markets Pvt. Ltd.	0.93	0.0001
13	Essar Electric Power Development Corp. Ltd.	0.81	0.0001
14	National Energy Trading & Services Ltd.	0.76	0.0001
15	Instinct Infra & Power Ltd.	0.64	0.0000
16	RPG Power Trading Company Ltd.	0.50	0.0000
17	Customized Energy Solutions India (P) Ltd.	0.33	0.0000
18	Shyam Indus Power Solutions Private Limited	0.28	0.0000
19	Shree Cement Ltd.	0.18	0.0000
20	Parshavanath Power Projects Private Limited	0.12	0.0000
21	Gita Power & Infrastructure Private Limited	0.11	0.0000
22	Phillip Commodities India (P) Ltd.	0.01	0.0000
23	My Home Power Private Ltd.	0.01	0.0000
TOTAL		**100.00%**	**0.1945**
Top 5 trading licensees		**73.83%**	
Note 1: Volume of electricity transacted by the trading licensees includes bilateral transactions (inter-state & intra-state) and the transactions undertaken through power exchanges.			
Note 2: Volume of electricity transacted by Global Energy Ltd is not included.			
Source: Information submitted by trading licensees			

Figure 4: Percentage Share of Electricity Transacted by Trading Licensees, May 2017

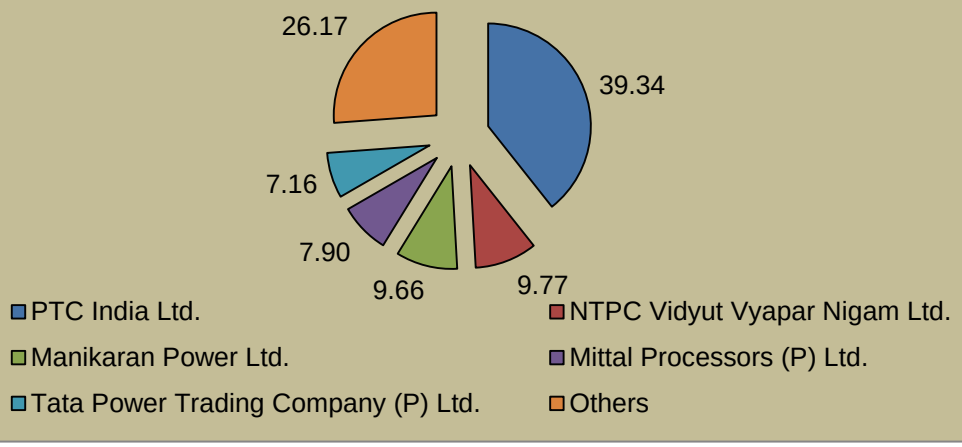


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, MAY 2017		
Sr.No	**Item**	**Sale Price of Traders (₹/kWh)**
1	Minimum	2.33
2	Maximum	4.98
3	Weighted Average	3.53

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), MAY 2017		
Sr.No	**Period of Trade**	**Sale Price of Traders (₹/kWh)**
1	RTC	3.64
2	PEAK	3.47
3	OFF PEAK	3.16

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, MAY 2017			
Sr.No	**ACP**	**Price in IEX (₹/kWh)**	**Price in PXIL (₹/kWh)**
1	Minimum	0.95	0.00
2	Maximum	6.10	4.01
3	Weighted Average	2.98	2.99

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, MAY 2017			
Sr.No	**Term ahead contracts**	**Actual Scheduled Volume (MUs)**	**Weighted Average Price (₹/kWh)**
1	Intra-Day Contracts	20.20	3.69
2	Day Ahead Contingency Contracts	43.83	3.61
	Total	**64.03**	**3.64**

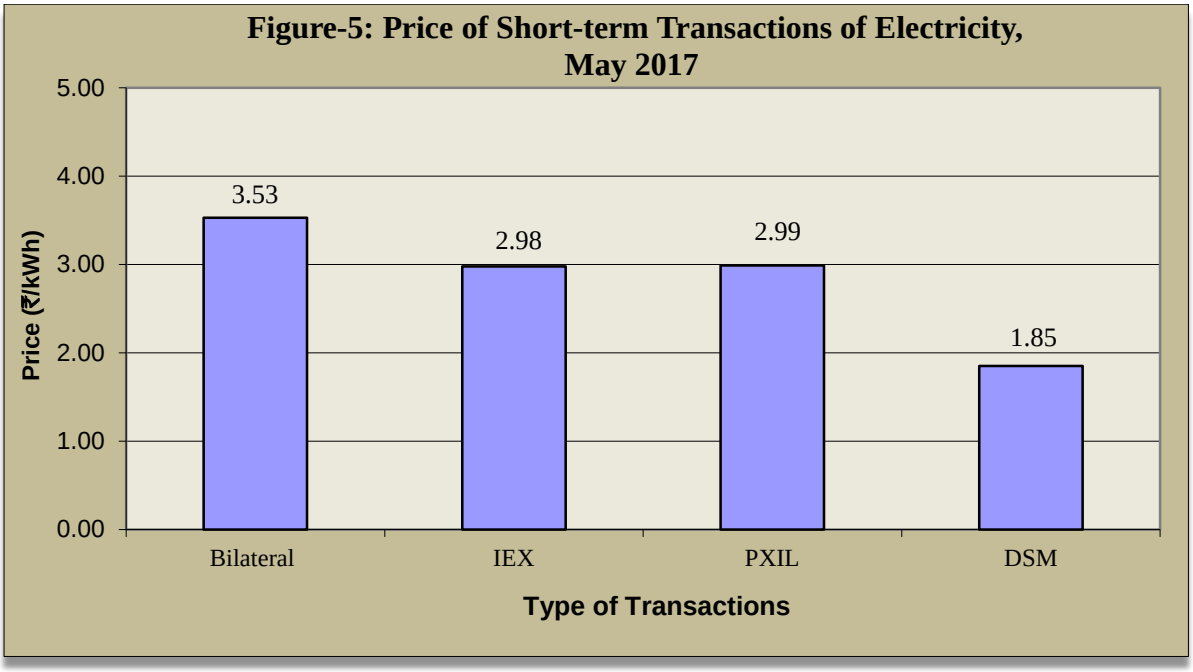
Source: IEX

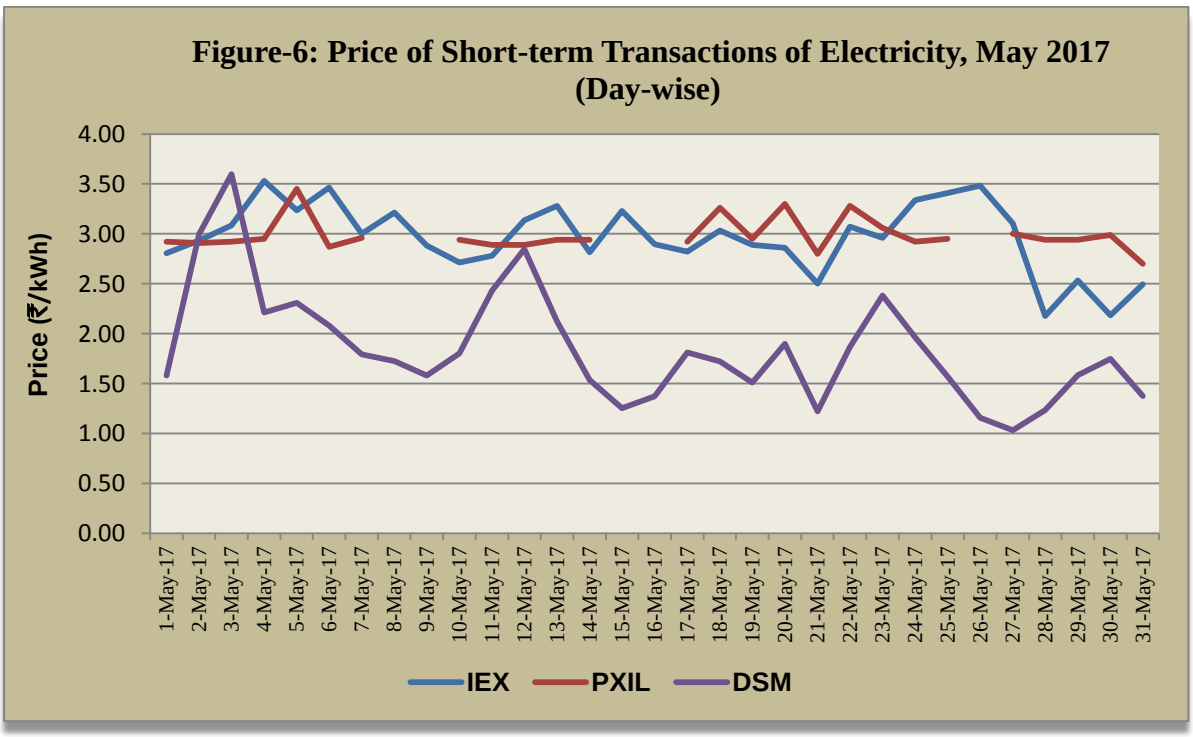
Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, MAY 2017			
Sr.No	**Term ahead contracts**	**Actual Scheduled Volume (MUs)**	**Weighted Average Price (₹/kWh)**
1	Intra-Day Contracts	14.71	3.68
2	Daily Contracts	19.20	3.25
3	Weekly Contracts	7.20	3.00
	Total	**41.11**	**3.36**

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH DSM, MAY 2017		
Sr.No	Item	**Price in All India Grid (₹/kWh)**
1	Minimum	0.00
2	Maximum	7.20
3	Average	1.85

Source: NLDC





Note: *For PXIL, on 8th, 9th, 15th and 26th of May 2017, the traded volume was zero since the buy bid quote could not match the higher sale bid quote, while on 16th May 2017, there were no sellers in Day Ahead Product, hence, discontinuous price curve.*

Table-9: VOLUME OF ELECTRICITY SOLD THROUGH BILATERAL, MAY 2017		
Name of the Entity	**Volume of Sale (MUs)**	**% of Volume**
SEMBCORP	734.79	15.03
HIMACHAL PRADESH	518.93	10.61
J & K	423.08	8.65
ESSAR POWER	282.28	5.77
DB POWER	271.39	5.55
JAYPEE NIGRIE	222.40	4.55
JINDAL POWER	201.80	4.13
ANDHRA PRADESH	192.22	3.93
WEST BENGAL	183.65	3.76
ILF&S	160.39	3.28
KORBA WEST POWER	154.55	3.16
GMR KAMALANGA	144.75	2.96
ADHUNIK POWER LTD	143.62	2.94
HARYANA	123.23	2.52
MAHARASHTRA	111.90	2.29
GUJARAT	96.25	1.97
RAJASTHAN	93.04	1.90
SHREE CEMENT	87.01	1.78
MP	81.62	1.67
THERMAL POWERTECH	77.16	1.58
DVC	53.17	1.09
ONGC PALATANA	48.36	0.99
ACBIL	40.99	0.84
BALCO	40.82	0.83
NTPC STATIONS-ER	40.59	0.83
DELHI	38.64	0.79
MB POWER	35.19	0.72
UTTARAKHAND	34.74	0.71
DIKCHU HEP	30.07	0.62
KARCHAM WANGTOO	24.85	0.51
JHABUA POWER_MP	24.38	0.50
TELANGANA	22.56	0.46
AD HYDRO	21.65	0.44
CHUZACHEN HEP	18.85	0.39
JITPL	15.94	0.33
JINDAL STAGE-II	15.30	0.31
SPECTRUM	14.77	0.30
MEGHALAYA	13.87	0.28
SIKKIM	11.78	0.24
LANKO_AMK	9.92	0.20
KARNATAKA	8.03	0.16
ODISHA	5.53	0.11
UTTAR PRADESH	4.70	0.10
TAMIL NADU	4.29	0.09
MEENAKSHI	3.98	0.08
TEESTA STG3	0.85	0.02
JORETHANG	0.74	0.02
NETCL VALLUR	0.32	0.01
Total	**4888.92**	**100.00**
Volume Sold by top 5 Regional Entities	**2230.47**	**45.62**

Table-10: VOLUME OF ELECTRICITY PURCHASED THROUGH BILATERAL, MAY 2017		
Name of the Entity	**Volume of Purchase (MUs)**	**% of Volume**
MAHARASHTRA	804.01	16.79
TAMIL NADU	531.89	11.11
DELHI	412.51	8.61
UTTAR PRADESH	375.19	7.83
BIHAR	351.35	7.34
HARYANA	260.06	5.43
ESSAR STEEL	258.93	5.41
PUNJAB	241.31	5.04
JHARKHAND	201.11	4.20
BANGLADESH	181.17	3.78
KARNATAKA	165.57	3.46
CHHATTISGARH	153.25	3.20
ANDHRA PRADESH	146.10	3.05
KERALA	118.31	2.47
NEPAL(NVVN)	101.42	2.12
WEST BENGAL	99.64	2.08
UTTARAKHAND	90.21	1.88
MP	87.76	1.83
ASSAM	46.94	0.98
GUJARAT	39.40	0.82
ODISHA	35.03	0.73
TELANGANA	30.56	0.64
GOA	29.68	0.62
RAJASTHAN	23.52	0.49
HIMACHAL PRADESH	3.39	0.07
TRIPURA	1.14	0.02
DVC	0.08	0.00
TOTAL	**4789.52**	**100.00**
Volume Purchased by top 5 Regional Entities	**2474.95**	**51.67**

Table-11: VOLUME OF ELECTRICITY SOLD THROUGH POWER EXCHANGES, MAY 2017		
Name of the Entity	**Volume of Sale (MUs)**	**% of Volume**
MP	743.01	18.10
TEESTA STG3	428.55	10.44
KARCHAM WANGTOO	307.36	7.49
HIMACHAL PRADESH	305.96	7.45
JAYPEE NIGRIE	193.09	4.70
TELANGANA	168.01	4.09
JINDAL POWER	163.79	3.99
DVC	142.53	3.47
SEMBCORP	104.74	2.55
DELHI	103.94	2.53
NLC	103.69	2.53
J & K	102.87	2.51
DB POWER	88.30	2.15
DADRA & NAGAR HAVELI	66.59	1.62
BALCO	61.79	1.51
ESSAR POWER	61.65	1.50
MB POWER	59.76	1.46
RAJASTHAN	54.91	1.34
AD HYDRO	54.63	1.33
ADHUNIK POWER LTD	46.53	1.13
SPECTRUM	45.52	1.11
HARYANA	44.18	1.08
GUJARAT	42.22	1.03
SIKKIM	41.63	1.01
MEENAKSHI	40.73	0.99
TRIPURA	37.93	0.92
JHABUA POWER_MP	37.00	0.90
ODISHA	34.09	0.83
KORBA WEST POWER	32.75	0.80
THERMAL POWERTECH	29.16	0.71
CHHATTISGARH	28.78	0.70
UTTAR PRADESH	27.75	0.68
UTTARAKHAND	24.48	0.60
CHUZACHEN HEP	22.85	0.56
JORETHANG	22.82	0.56
NJPC	22.53	0.55
MANIPUR	21.92	0.53
MAHARASHTRA	21.34	0.52
ASSAM	20.72	0.50
NTPC STATIONS-WR	19.59	0.48
ACBIL	14.36	0.35
DIKCHU HEP	11.92	0.29
KARNATAKA	10.31	0.25
ANDHRA PRADESH	9.58	0.23
MEGHALAYA	8.25	0.20
NETCL VALLUR	7.64	0.19
SHREE CEMENT	7.20	0.18
TAMIL NADU	6.64	0.16
ILF&S	6.02	0.15

GOA	5.73	0.14
LANCO BUDHIL	4.69	0.11
NTPC STATIONS-ER	4.53	0.11
NTPC STATIONS-SR	4.34	0.11
MIZORAM	3.76	0.09
KERALA	3.51	0.09
MALANA	3.40	0.08
MAITHON POWER LTD	2.97	0.07
WEST BENGAL	2.43	0.06
NTPC STATIONS-NR	2.18	0.05
JITPL	1.74	0.04
MARUTI COAL	1.63	0.04
GMR KAMALANGA	1.45	0.04
DHARIWAL POWER	1.06	0.03
Total	**4105.31**	**100.00**
Volume sold by top 5 Regional Entities	**1977.98**	**48.18**

Table-12: VOLUME OF ELECTRICITY PURCHASED THROUGH POWER EXCHANGES, MAY 2017		
Name of the Entity	**Volume of Purchase (MUs)**	**% of Volume**
GUJARAT	769.57	18.75
PUNJAB	356.05	8.67
WEST BENGAL	352.06	8.58
MAHARASHTRA	337.94	8.23
KARNATAKA	259.54	6.32
ANDHRA PRADESH	256.36	6.24
BIHAR	237.08	5.77
RAJASTHAN	232.89	5.67
TELANGANA	188.06	4.58
UTTAR PRADESH	180.54	4.40
HARYANA	151.14	3.68
KERALA	148.01	3.61
DADRA & NAGAR HAVELI	123.56	3.01
ASSAM	98.42	2.40
DELHI	79.48	1.94
UTTARAKHAND	45.82	1.12
J & K	41.16	1.00
DAMAN AND DIU	37.71	0.92
HIMACHAL PRADESH	34.06	0.83
ODISHA	31.85	0.78
ESSAR STEEL	25.47	0.62
CHHATTISGARH	21.94	0.53
GOA	18.82	0.46
CHANDIGARH	16.31	0.40
MEGHALAYA	15.89	0.39
TAMIL NADU	12.59	0.31
MP	10.42	0.25
NAGALAND	10.05	0.24
ARUNACHAL PRADESH	5.30	0.13
DVC	2.62	0.06
PONDICHERRY	2.37	0.06
MANIPUR	0.81	0.02
MIZORAM	0.75	0.02
TRIPURA	0.67	0.02
TOTAL	**4105.31**	**100.00**
Volume purchased by top 5 Regional Entities	**2075.16**	**50.55**

Table-13: VOLUME OF ELECTRICITY UNDER DRAWAL (EXPORTED) THROUGH DSM, MAY 2017		
Name of the Entity	**Volume of Under drawal (MUs)**	**% of Volume**
TELANGANA	163.14	9.00
TAMIL NADU	128.57	7.09
GUJARAT	98.44	5.43
UTTAR PRADESH	86.84	4.79
MAHARASHTRA	85.43	4.71
NTPC STATIONS-WR	77.52	4.28
MP	71.04	3.92
NTPC STATIONS-NR	65.77	3.63
NLC	63.74	3.52
HARYANA	63.12	3.48
PUNJAB	51.43	2.84
NHPC STATIONS	46.84	2.58
SASAN UMPP	44.52	2.46
DELHI	43.76	2.41
RAJASTHAN	42.91	2.37
DVC	41.97	2.32
KARNATAKA	41.51	2.29
BIHAR	40.20	2.22
CHHATTISGARH	33.90	1.87
ANDHRA PRADESH	29.47	1.63
NTPC STATIONS-ER	28.34	1.56
NJPC	27.55	1.52
JHARKHAND	24.01	1.32
WEST BENGAL	22.30	1.23
ODISHA	22.19	1.22
HIMACHAL PRADESH	22.10	1.22
NTPC STATIONS-SR	21.08	1.16
UTTARAKHAND	20.63	1.14
ESSAR STEEL	18.84	1.04
DADRA & NAGAR HAVELI	13.54	0.75
NEEPCO STATIONS	13.19	0.73
MEGHALAYA	12.85	0.71
JINDAL POWER	12.34	0.68
GOA	11.64	0.64
TRIPURA	11.15	0.62
KARCHAM WANGTOO	10.73	0.59
TEESTA HEP	8.94	0.49
BANGLADESH	8.65	0.48
NEPAL(NVVN)	8.36	0.46
PONDICHERRY	8.12	0.45
LANKO_AMK	7.54	0.42
THERMAL POWERTECH	7.27	0.40
ASSAM	7.17	0.40
MB POWER	7.11	0.39
NSPCL	6.75	0.37
DB POWER	6.37	0.35
ARUNACHAL PRADESH	5.73	0.32
GMR KAMALANGA	5.51	0.30

AD HYDRO	5.41	0.30
TEESTA STG3	5.32	0.29
MANIPUR	5.20	0.29
DCPP	5.06	0.28
RGPPL (DABHOL)	4.84	0.27
SIKKIM	4.69	0.26
CHUZACHEN HEP	4.60	0.25
CGPL	4.49	0.25
NETCL VALLUR	4.25	0.23
MAITHON POWER LTD	4.06	0.22
EMCO	4.03	0.22
JINDAL STAGE-II	3.72	0.21
NAGALAND	3.62	0.20
JAYPEE NIGRIE	3.33	0.18
BALCO	3.06	0.17
ADHUNIK POWER LTD	3.04	0.17
SEMBCORP	2.92	0.16
KSK MAHANADI	2.91	0.16
JITPL	2.91	0.16
JORETHANG	2.83	0.16
RANGANADI HEP	2.53	0.14
JHABUA POWER_MP	2.46	0.14
KERALA	2.24	0.12
LANCO BUDHIL	2.06	0.11
ILF&S	1.80	0.10
RANGIT HEP	1.72	0.09
ESSAR POWER	1.71	0.09
MIZORAM	1.69	0.09
ACBIL	1.65	0.09
DAGACHU	1.57	0.09
CHANDIGARH	1.53	0.08
URI-2	1.50	0.08
RKM POWER	1.37	0.08
SHREE CEMENT	1.31	0.07
MEENAKSHI	1.10	0.06
COASTGEN	1.05	0.06
KORBA WEST POWER	0.99	0.05
DAMAN AND DIU	0.87	0.05
LOKTAK	0.83	0.05
DHARIWAL POWER	0.75	0.04
TRN ENERGY	0.69	0.04
MALANA	0.35	0.02
DOYANG HEP	0.30	0.02
Total	**1812.50**	**100.00**
Volume Exported by top 5 Regional Entities	**562.43**	**31.03**

Table-14: VOLUME OF ELECTRICITY OVER DRAWAL (IMPORTED) THROUGH DSM, MAY 2017		
Name of the Entity	**Volume of Over drawal (MUs)**	**% of Volume**
ANDHRA PRADESH	135.09	6.57
MAHARASHTRA	112.93	5.49
RAJASTHAN	103.73	5.04
UTTAR PRADESH	96.99	4.72
NTPC STATIONS-NR	94.36	4.59
NTPC STATIONS-WR	88.78	4.32
HARYANA	84.61	4.11
NTPC STATIONS-ER	83.80	4.07
WEST BENGAL	81.63	3.97
KARNATAKA	80.84	3.93
BIHAR	79.60	3.87
ASSAM	60.81	2.96
PUNJAB	59.85	2.91
KERALA	59.21	2.88
NTPC STATIONS-SR	56.40	2.74
ODISHA	50.70	2.46
TAMIL NADU	45.13	2.19
MP	44.14	2.15
UTTARAKHAND	42.68	2.08
HIMACHAL PRADESH	36.81	1.79
GUJARAT	34.66	1.69
GOA	31.09	1.51
JHARKHAND	30.49	1.48
ESSAR STEEL	29.65	1.44
DVC	28.64	1.39
CGPL	27.51	1.34
CHHATTISGARH	19.97	0.97
DELHI	17.00	0.83
NETCL VALLUR	16.69	0.81
DAMAN AND DIU	15.28	0.74
CHANDIGARH	15.19	0.74
BALCO	14.50	0.70
DAGACHU	13.62	0.66
THERMAL POWERTECH	12.79	0.62
TRIPURA	11.38	0.55
JHABUA POWER_MP	10.66	0.52
EMCO	10.60	0.52
DB POWER	10.15	0.49
ARUNACHAL PRADESH	9.62	0.47
NLC	9.45	0.46
ILF&S	8.88	0.43
JAYPEE NIGRIE	8.40	0.41
SEMBCORP	8.29	0.40
SIKKIM	8.13	0.40
KORBA WEST POWER	7.67	0.37
NAGALAND	7.40	0.36
MB POWER	7.11	0.35
GMR KAMALANGA	6.85	0.33
JINDAL STAGE-II	6.50	0.32

ACBIL	6.42	0.31
NSPCL	6.41	0.31
JORETHANG	6.23	0.30
JINDAL POWER	5.22	0.25
MAITHON POWER LTD	4.84	0.24
AD HYDRO	4.83	0.23
RKM POWER	4.64	0.23
ADHUNIK POWER LTD	4.61	0.22
NHPC STATIONS	4.48	0.22
MIZORAM	4.31	0.21
MEENAKSHI	4.13	0.20
LANCO BUDHIL	4.04	0.20
DCPP	3.78	0.18
NJPC	3.70	0.18
PONDICHERRY	3.61	0.18
TEESTA STG3	3.54	0.17
KARCHAM WANGTOO	3.49	0.17
KSK MAHANADI	3.42	0.17
SASAN UMPP	3.42	0.17
MANIPUR	3.39	0.16
TRN ENERGY	3.06	0.15
DADRA & NAGAR HAVELI	2.97	0.14
SHREE CEMENT	2.69	0.13
JITPL	2.42	0.12
TELANGANA	2.32	0.11
COASTGEN	2.21	0.11
BANGLADESH	2.17	0.11
MEGHALAYA	1.99	0.10
ESSAR POWER	1.61	0.08
GMR CHATTISGARH	1.34	0.07
CHUZACHEN HEP	1.31	0.06
NEEPCO STATIONS	1.25	0.06
LANKO KONDAPALLI	1.11	0.05
RGPPL (DABHOL)	1.07	0.05
RANGANADI HEP	0.96	0.05
DHARIWAL POWER	0.74	0.04
SIMHAPURI	0.73	0.04
MALANA	0.50	0.02
LANKO_AMK	0.40	0.02
LOKTAK	0.34	0.02
DOYANG HEP	0.29	0.01
NEPAL(NVVN)	0.29	0.01
URI-2	0.17	0.01
TOTAL	**2056.74**	**100.00**
Volume Imported by top 5 Regional Entities	**543.10**	**26.41**

Table-15: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY-WISE), MAY 2017		
Sr.No.	**Name of the Entity**	**Total volume of net short-term transactions of electricity***
1	MAHARASHTRA	1036.21
2	BIHAR	627.82
3	GUJARAT	606.71
4	PUNJAB	605.77
5	UTTAR PRADESH	533.43
6	TAMIL NADU	450.11
7	KARNATAKA	446.10
8	WEST BENGAL	324.95
9	DELHI	322.65
10	KERALA	319.77
11	ANDHRA PRADESH	306.27
12	ESSAR STEEL	295.20
13	HARYANA	265.29
14	JHARKHAND	207.59
15	ASSAM	178.29
16	BANGLADESH	174.69
17	RAJASTHAN	169.28
18	CHHATTISGARH	132.47
19	UTTARAKHAND	98.87
20	NEPAL(NVVN)	93.35
21	GOA	62.22
22	ODISHA	55.77
23	DAMAN AND DIU	52.12
24	DADRA & NAGAR HAVELI	46.40
25	NTPC STATIONS-SR	30.98
26	CHANDIGARH	29.87
27	NTPC STATIONS-NR	26.42
28	CGPL	23.02
29	NAGALAND	13.77
30	DAGACHU	12.05
31	NTPC STATIONS-ER	10.33
32	ARUNACHAL PRADESH	9.19
33	EMCO	6.48
34	NETCL VALLUR	4.48
35	RKM POWER	3.27
36	TRN ENERGY	2.37
37	GMR CHATTISGARH	1.34
38	COASTGEN	1.15
39	LANKO KONDAPALLI	1.11
40	SIMHAPURI	0.73
41	KSK MAHANADI	0.52
42	DOYANG HEP	-0.01
43	NSPCL	-0.34
44	MIZORAM	-0.39
45	LOKTAK	-0.49
46	DHARIWAL POWER	-1.07
47	DCPP	-1.28
48	URI-2	-1.33
49	RANGANADI HEP	-1.57

50	MARUTI COAL	-1.63
51	RANGIT HEP	-1.72
52	PONDICHERRY	-2.13
53	MAITHON POWER LTD	-2.19
54	LANCO BUDHIL	-2.71
55	MALANA	-3.25
56	RGPPL (DABHOL)	-3.77
57	NTPC STATIONS-WR	-8.33
58	TEESTA HEP	-8.94
59	NEEPCO STATIONS	-11.94
60	JINDAL STAGE-II	-12.52
61	LANKO_AMK	-17.05
62	MEGHALAYA	-17.08
63	JITPL	-18.18
64	JORETHANG	-20.16
65	MANIPUR	-22.93
66	TRIPURA	-35.89
67	SASAN UMPP	-41.10
68	MEENAKSHI	-41.68
69	DIKCHU HEP	-41.98
70	NHPC STATIONS	-42.36
71	CHUZACHEN HEP	-45.00
72	NJPC	-46.38
73	ONGC PALATANA	-48.36
74	SIKKIM	-49.97
75	ACBIL	-50.58
76	JHABUA POWER_MP	-53.18
77	SPECTRUM	-60.29
78	AD HYDRO	-76.86
79	BALCO	-91.18
80	SHREE CEMENT	-92.82
81	MB POWER	-94.95
82	THERMAL POWERTECH	-100.80
83	TELANGANA	-132.76
84	GMR KAMALANGA	-144.85
85	NLC	-157.99
86	ILF&S	-159.33
87	KORBA WEST POWER	-180.62
88	ADHUNIK POWER LTD	-188.59
89	DVC	-206.33
90	KARCHAM WANGTOO	-339.45
91	ESSAR POWER	-344.03
92	DB POWER	-355.91
93	JINDAL POWER	-372.71
94	JAYPEE NIGRIE	-410.42
95	TEESTA STG3	-431.18
96	J & K	-484.80
97	MP	-753.36
98	HIMACHAL PRADESH	-772.73
99	SEMBCORP	-834.16
** Total volume of net short-term transactions of electricity includes net of transactions of electricity through bilateral, power exchange and UI*		
(-) indicates sale and (+) indicates purchase		

Table-16: DETAILS OF CONGESTION IN POWER EXCHANGES, MAY 2017			
	Details of Congestion	**IEX**	**PXIL**
A	Unconstrained Cleared Volume* (MUs)	4116.11	5.63
B	Actual Cleared Volume and hence scheduled (MUs)	4105.48	5.30
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	10.63	0.33
D	Volume of electricity that could not be cleared as % to Unconstrained Cleared Volume	0.26%	5.88%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	13.17%	2.49%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	9.95%	0.00%
	6.00 - 12.00 hours	19.39%	18.92%
	12.00 - 18.00 hours	31.12%	24.32%
	18.00 - 24.00 hours	39.54%	56.76%
** This power would have been scheduled had there been no congestion.*			
Source: IEX & PXIL& NLDC			

Table-17: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA (DAY-WISE) (MUs), MAY 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-May-17	90.38	45.57	112.49	1.10	78.76	3300.45
2-May-17	97.09	47.86	127.70	1.04	94.68	3474.04
3-May-17	105.56	43.69	128.54	0.04	91.79	3522.83
4-May-17	106.51	48.58	112.44	0.08	76.24	3585.08
5-May-17	112.03	50.59	122.73	0.02	83.30	3633.51
6-May-17	106.74	49.06	129.06	0.09	75.59	3610.16
7-May-17	95.68	45.43	140.33	0.04	84.68	3400.20
8-May-17	113.16	48.62	148.51	0.00	83.71	3569.00
9-May-17	110.24	46.43	128.11	0.00	79.08	3461.77
10-May-17	109.65	49.35	127.97	0.10	92.23	3513.42
11-May-17	114.67	49.07	130.15	0.10	85.93	3599.10
12-May-17	115.50	49.78	140.40	0.10	91.25	3667.58
13-May-17	125.55	50.83	148.50	0.10	88.96	3612.79
14-May-17	112.62	52.34	134.79	0.10	84.06	3431.46
15-May-17	116.25	53.50	152.16	0.00	88.05	3486.63
16-May-17	124.88	43.64	143.18	0.00	90.20	3530.25
17-May-17	109.82	43.30	144.06	0.08	93.82	3479.84
18-May-17	110.74	43.57	147.86	0.33	90.28	3495.39
19-May-17	109.76	44.89	147.72	0.10	84.18	3430.11
20-May-17	107.90	46.16	144.59	0.35	83.83	3433.99
21-May-17	114.95	46.85	115.55	0.11	94.22	3296.85
22-May-17	112.83	45.44	143.54	0.21	91.34	3396.72
23-May-17	103.80	48.80	133.34	0.34	92.06	3495.65
24-May-17	100.78	45.64	127.49	0.10	78.91	3529.62
25-May-17	102.14	43.60	125.97	0.08	87.28	3553.15
26-May-17	101.61	43.56	136.49	0.00	118.76	3445.00
27-May-17	106.42	44.11	139.20	0.20	96.96	3262.39
28-May-17	105.60	40.31	101.49	0.10	90.08	3150.25
29-May-17	103.12	41.53	127.17	0.10	96.04	3097.04
30-May-17	104.80	38.15	120.30	0.24	93.19	3224.23
31-May-17	109.28	39.21	118.17	0.10	90.67	3280.10
Total	**3360.06**	**1429.46**	**4100.01**	**5.30**	**2750.12**	**106968.60**
Source: NLDC						
* Gross Electricity Generation excluding electricity generation from renewables and captive power plants.						
** The volume of bilateral through PXs represents the volume through term-ahead contracts.						
# Area Clearing Volume represents the scheduled volume of all the bid areas.						

Table-18: PRICE OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (DAY-WISE)(₹/kWh), MAY, 2017									
Market Segment	**Day ahead market of IEX**			**Day ahead market of PXIL**			**Under Drawl/Over Drawl from the Grid (DSM)**		
Date							**All India Grid**		
	Mini-mum ACP	**Maxi-mum ACP**	**Weighted Average Price***	**Mini-mum ACP**	**Maxi-mum ACP**	**Weighted Average Price***	**Mini-mum Price**	**Maxi-mum Price**	**Average Price****
1-May-17	2.25	3.60	2.81	2.83	3.44	2.92	0.00	3.45	1.58
2-May-17	2.41	4.80	2.94	2.64	3.45	2.91	0.00	7.20	3.00
3-May-17	2.47	5.40	3.09	2.92	2.92	2.92	0.00	6.36	3.60
4-May-17	2.66	6.10	3.53	2.95	2.95	2.95	0.00	5.11	2.21
5-May-17	2.54	5.75	3.24	3.45	3.45	3.45	0.00	5.11	2.31
6-May-17	2.53	5.35	3.46	2.84	2.94	2.87	0.00	4.91	2.08
7-May-17	1.63	5.00	3.00	2.84	3.45	2.96	0.00	4.91	1.79
8-May-17	2.39	4.20	3.21	0.00	0.00	0.00	0.00	3.45	1.72
9-May-17	2.01	4.01	2.88	0.00	0.00	0.00	0.00	3.45	1.58
10-May-17	1.99	4.10	2.71	2.88	3.45	2.94	0.00	3.45	1.80
11-May-17	2.04	3.50	2.78	2.89	2.89	2.89	0.00	6.36	2.43
12-May-17	2.20	4.00	3.14	2.89	2.89	2.89	0.36	5.95	2.85
13-May-17	2.40	4.65	3.28	2.42	3.44	2.94	0.00	5.32	2.12
14-May-17	2.00	4.84	2.82	2.42	3.44	2.94	0.00	3.45	1.54
15-May-17	2.03	5.86	3.23	0.00	0.00	0.00	0.00	3.03	1.25
16-May-17	2.20	3.76	2.90	0.00	0.00	0.00	0.00	3.45	1.37
17-May-17	2.20	4.50	2.82	2.71	3.45	2.92	0.00	3.45	1.81
18-May-17	2.25	4.05	3.03	2.42	3.43	3.26	0.00	3.45	1.72
19-May-17	1.80	4.00	2.89	2.41	3.65	2.95	0.00	3.45	1.51
20-May-17	2.25	4.05	2.86	1.95	3.52	3.30	0.00	3.45	1.90
21-May-17	1.14	4.44	2.50	2.80	2.80	2.80	0.00	3.24	1.22
22-May-17	1.92	4.21	3.07	2.40	3.65	3.28	0.00	5.32	1.87
23-May-17	2.10	4.35	2.96	2.40	3.65	3.06	0.00	5.11	2.38
24-May-17	1.74	5.20	3.34	2.92	2.92	2.92	0.00	3.45	1.96
25-May-17	1.92	5.00	3.41	2.95	2.95	2.95	0.00	3.45	1.57
26-May-17	1.85	5.50	3.48	0.00	0.00	0.00	0.00	3.45	1.16
27-May-17	1.00	5.50	3.10	3.00	3.00	3.00	0.00	5.11	1.03
28-May-17	1.00	2.90	2.18	2.94	2.94	2.94	0.00	3.24	1.23
29-May-17	1.00	3.68	2.53	2.66	4.01	2.94	0.00	4.91	1.59
30-May-17	0.95	3.00	2.18	2.34	3.40	2.99	0.00	3.45	1.75
31-May-17	1.00	3.50	2.50	2.70	2.70	2.70	0.00	3.24	1.38
	0.95#	**6.10#**	**2.98**	**0.00#**	**4.01#**	**2.99**	**0.00#**	**7.20#**	**1.85**
Source: Data on price of PX transactions from IEX and PXIL and data on DSM Price from NLDC.									
* Weighted average price computed based on Area Clearing Volume (ACV) and Area Clearing Price (ACP) for each hour of the day. Here, ACV and ACP represent the scheduled volume and weighted average price of all the bid areas of power exchanges.									
** Simple average price of DSM of 96 time blocks of 15 minutes each in a day. DSM price includes Ceiling DSM Rate +40% additional DSM charge.									
# Maximum/Minimum in the month									

Table-19: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY*-WISE) (MUs), MAY 2017										
Name of the Entity	Through Bilateral			Through Power Exchange			Through DSM with Regional Grid			Total Net***
	Sale	Pur-chase	Net**	Sale	Pur-chase	Net**	Import (Over Drawl)	Export (Under Drawl)	Net**	
PUNJAB	0.00	241.31	241.31	0.00	356.05	356.05	59.85	51.43	8.42	605.77
HARYANA	123.23	260.06	136.83	44.18	151.14	106.96	84.61	63.12	21.50	265.29
RAJASTHAN	93.04	23.52	-69.52	54.91	232.89	177.98	103.73	42.91	60.82	169.28
DELHI	38.64	412.51	373.87	103.94	79.48	-24.46	17.00	43.76	-26.76	322.65
UP	4.70	375.19	370.49	27.75	180.54	152.79	96.99	86.84	10.15	533.43
UTTARAKHAND	34.74	90.21	55.47	24.48	45.82	21.34	42.68	20.63	22.05	98.87
HP	518.93	3.39	-515.54	305.96	34.06	-271.90	36.81	22.10	14.71	-772.73
J & K	423.08	0.00	-423.08	102.87	41.16	-61.72	0.00	0.00	0.00	-484.80
CHANDIGARH	0.00	0.00	0.00	0.10	16.31	16.21	15.19	1.53	13.66	29.87
MP	81.62	87.76	6.14	743.01	10.42	-732.59	44.14	71.04	-26.91	-753.36
MAHARASHTRA	111.90	804.01	692.11	21.34	337.94	316.61	112.93	85.43	27.50	1036.21
GUJARAT	96.25	39.40	-56.85	42.22	769.57	727.35	34.66	98.44	-63.79	606.71
CHHATTISGAR	0.00	153.25	153.25	28.78	21.94	-6.84	19.97	33.90	-13.93	132.47
GOA	0.00	29.68	29.68	5.73	18.82	13.09	31.09	11.64	19.45	62.22
DAMAN & DIU	0.00	0.00	0.00	0.00	37.71	37.71	15.28	0.87	14.41	52.12
D&N HAVELI	0.00	0.00	0.00	66.59	123.56	56.97	2.97	13.54	-10.57	46.40
AP	192.22	146.10	-46.12	9.58	256.36	246.77	135.09	29.47	105.62	306.27
KARNATAKA	8.03	165.57	157.54	10.31	259.54	249.22	80.84	41.51	39.34	446.10
KERALA	0.00	118.31	118.31	3.51	148.01	144.50	59.21	2.24	56.97	319.77
TAMIL NADU	4.29	531.89	527.60	6.64	12.59	5.95	45.13	128.57	-83.45	450.11
PONDICHERRY	0.00	0.00	0.00	0.00	2.37	2.37	3.61	8.12	-4.50	-2.13
TELANGANA	22.56	30.56	8.01	168.01	188.06	20.05	2.32	163.14	-160.82	-132.76
WEST BENGAL	183.65	99.64	-84.01	2.43	352.06	349.62	81.63	22.30	59.33	324.95
ODISHA	5.53	35.03	29.50	34.09	31.85	-2.24	50.70	22.19	28.51	55.77
BIHAR	0.00	351.35	351.35	0.00	237.08	237.08	79.60	40.20	39.40	627.82
JHARKHAND	0.00	201.11	201.11	0.00	0.00	0.00	30.49	24.01	6.48	207.59
SIKKIM	11.78	0.00	-11.78	41.63	0.00	-41.63	8.13	4.69	3.44	-49.97
DVC	53.17	0.08	-53.09	142.53	2.62	-139.91	28.64	41.97	-13.33	-206.33
AR. PRADESH	0.00	0.00	0.00	0.00	5.30	5.30	9.62	5.73	3.89	9.19
ASSAM	0.00	46.94	46.94	20.72	98.42	77.71	60.81	7.17	53.64	178.29
MANIPUR	0.00	0.00	0.00	21.92	0.81	-21.11	3.39	5.20	-1.82	-22.93
MEGHALAYA	13.87	0.00	-13.87	8.25	15.89	7.64	1.99	12.85	-10.85	-17.08
MIZORAM	0.00	0.00	0.00	3.76	0.75	-3.01	4.31	1.69	2.62	-0.39
NAGALAND	0.00	0.00	0.00	0.05	10.05	10.00	7.40	3.62	3.78	13.77
TRIPURA	0.00	1.14	1.14	37.93	0.67	-37.26	11.38	11.15	0.23	-35.89
NTPC -NR	0.00	0.00	0.00	2.18	0.00	-2.18	94.36	65.77	28.60	26.42
NHPC	0.00	0.00	0.00	0.00	0.00	0.00	4.48	46.84	-42.36	-42.36
NJPC	0.00	0.00	0.00	22.53	0.00	-22.53	3.70	27.55	-23.85	-46.38
AD HYDRO	21.65	0.00	-21.65	54.63	0.00	-54.63	4.83	5.41	-0.58	-76.86
KARCHAM WANG	24.85	0.00	-24.85	307.36	0.00	-307.36	3.49	10.73	-7.24	-339.45
SHREE CEMENT	87.01	0.00	-87.01	7.20	0.00	-7.20	2.69	1.31	1.39	-92.82
LANCO BUDHIL	0.00	0.00	0.00	4.69	0.00	-4.69	4.04	2.06	1.98	-2.71
MALANA	0.00	0.00	0.00	3.40	0.00	-3.40	0.50	0.35	0.15	-3.25
NTPC -WR	0.00	0.00	0.00	19.59	0.00	-19.59	88.78	77.52	11.26	-8.33
JINDAL POWER	201.80	0.00	-201.80	163.79	0.00	-163.79	5.22	12.34	-7.12	-372.71
LANKO_AMK	9.92	0.00	-9.92	0.00	0.00	0.00	0.40	7.54	-7.14	-17.05
NSPCL	0.00	0.00	0.00	0.00	0.00	0.00	6.41	6.75	-0.34	-0.34
ACBIL	40.99	0.00	-40.99	14.36	0.00	-14.36	6.42	1.65	4.78	-50.58
BALCO	40.82	0.00	-40.82	61.79	0.00	-61.79	14.50	3.06	11.44	-91.18
RGPPL	0.00	0.00	0.00	0.00	0.00	0.00	1.07	4.84	-3.77	-3.77
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	27.51	4.49	23.02	23.02

DCPP	0.00	0.00	0.00	0.00	0.00	0.00	3.78	5.06	-1.28	-1.28
EMCO	0.00	0.00	0.00	0.09	0.00	-0.09	10.60	4.03	6.57	6.48
ESSAR STEEL	0.00	258.93	258.93	0.00	25.47	25.47	29.65	18.84	10.81	295.20
KSK MAHANAD	0.00	0.00	0.00	0.00	0.00	0.00	3.42	2.91	0.52	0.52
ESSAR POWER	282.28	0.00	-282.28	61.65	0.00	-61.65	1.61	1.71	-0.09	-344.03
JINDAL STG-II	15.30	0.00	-15.30	0.00	0.00	0.00	6.50	3.72	2.78	-12.52
DB POWER	271.39	0.00	-271.39	88.30	0.00	-88.30	10.15	6.37	3.77	-355.91
JAYPEE NIGRIE	222.40	0.00	-222.40	193.09	0.00	-193.09	8.40	3.33	5.07	-410.42
KORBA WEST	154.55	0.00	-154.55	32.75	0.00	-32.75	7.67	0.99	6.68	-180.62
MB POWER	35.19	0.00	-35.19	59.76	0.00	-59.76	7.11	7.11	0.00	-94.95
MARUTI COAL	0.00	0.00	0.00	1.63	0.00	-1.63	0.00	0.00	0.00	-1.63
SPECTRUM	14.77	0.00	-14.77	45.52	0.00	-45.52	0.00	0.00	0.00	-60.29
JHABUA POWER_MP	24.38	0.00	-24.38	37.00	0.00	-37.00	10.66	2.46	8.20	-53.18
SASAN UMPP	0.00	0.00	0.00	0.00	0.00	0.00	3.42	44.52	-41.10	-41.10
TRN ENERGY	0.00	0.00	0.00	0.00	0.00	0.00	3.06	0.69	2.37	2.37
RKM POWER	0.00	0.00	0.00	0.00	0.00	0.00	4.64	1.37	3.27	3.27
NTPC -SR	0.00	0.00	0.00	4.34	0.00	-4.34	56.40	21.08	35.32	30.98
SIMHAPURI	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.00	0.73	0.73
MEENAKSHI	3.98	0.00	-3.98	40.73	0.00	-40.73	4.13	1.10	3.03	-41.68
COASTGEN	0.00	0.00	0.00	0.00	0.00	0.00	2.21	1.05	1.15	1.15
THERMAL POWERTECH	77.16	0.00	-77.16	29.16	0.00	-29.16	12.79	7.27	5.52	-100.80
ILF&S	160.39	0.00	-160.39	6.02	0.00	-6.02	8.88	1.80	7.08	-159.33
NLC	0.00	0.00	0.00	103.69	0.00	-103.69	9.45	63.74	-54.29	-157.99
SEMBCORP	734.79	0.00	-734.79	104.74	0.00	-104.74	8.29	2.92	5.37	-834.16
NETCL VALLUR	0.32	0.00	-0.32	7.64	0.00	-7.64	16.69	4.25	12.44	4.48
NTPC -ER	40.59	0.00	-40.59	4.53	0.00	-4.53	83.80	28.34	55.46	10.33
MAITHON POW	0.00	0.00	0.00	2.97	0.00	-2.97	4.84	4.06	0.78	-2.19
ADHUNIK POW	143.62	0.00	-143.62	46.53	0.00	-46.53	4.61	3.04	1.57	-188.59
CHUZACHEN H	18.85	0.00	-18.85	22.85	0.00	-22.85	1.31	4.60	-3.29	-45.00
GMR KAMALANGA	144.75	0.00	-144.75	1.45	0.00	-1.45	6.85	5.51	1.34	-144.85
JITPL	15.94	0.00	-15.94	1.74	0.00	-1.74	2.42	2.91	-0.49	-18.18
TEESTA HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.94	-8.94	-8.94
DAGACHU	0.00	0.00	0.00	0.00	0.00	0.00	13.62	1.57	12.05	12.05
JORETHANG	0.74	0.00	-0.74	22.82	0.00	-22.82	6.23	2.83	3.40	-20.16
NEPAL(NVVN)	0.00	101.42	101.42	0.00	0.00	0.00	0.29	8.36	-8.07	93.35
BANGLADESH	0.00	181.17	181.17	0.00	0.00	0.00	2.17	8.65	-6.48	174.69
TEESTA STG3	0.85	0.00	-0.85	428.55	0.00	-428.55	3.54	5.32	-1.78	-431.18
DIKCHU HEP	30.07	0.00	-30.07	11.92	0.00	-11.92	0.00	0.00	0.00	-41.98
NEEPCO	0.00	0.00	0.00	0.00	0.00	0.00	1.25	13.19	-11.94	-11.94
ONGC PALATANA	48.36	0.00	-48.36	0.00	0.00	0.00	0.00	0.00	0.00	-48.36
TOTAL	**4888.9**	**4789.52**	**-99.41**	**4104.25**	**4105.31**	**1.06**	**2051.78**	**1804.87**	**246.91**	**148.57**

Source: NLDC

** in case of a state, the entities which are "selling" also include generators connected to state grid and the entities which are "buying" also include open access consumers.*

*** (-) indicates sale and (+) indicates purchase,*

**** Total net includes net of transactions through bilateral, power exchange and DSM*

Figure 7: Bilateral Contracts executed by Traders in June, 2017

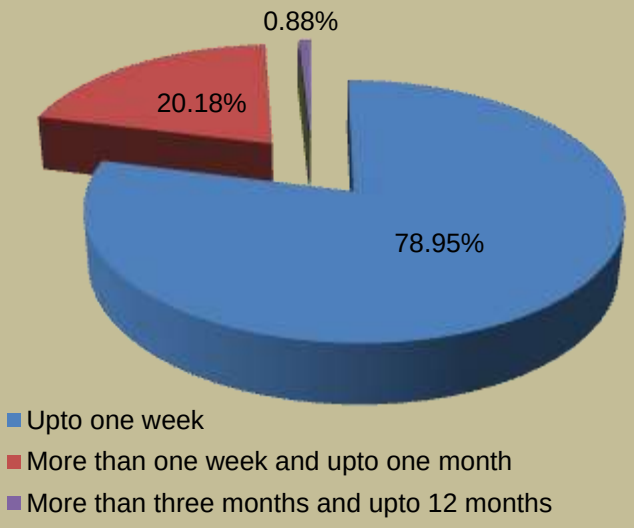


Figure-8: Forward Curve based on Prices of Bilateral Contracts