

Monthly Report on Short-term Transactions of Electricity in India

August, 2017



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



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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 September 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 **August, 2017** are as under:

I: Volume of Short-term Transactions of Electricity

During August 2017, total electricity generation excluding generation from renewable and captive power plants in India was 102716.80 MUs (Table-1).

Of the total electricity generation, 12069.97 MUs (11.75%) was transacted through short-term, comprising of 5530.53 MUs (5.38%) through bilateral (through traders and term-ahead contracts on power exchanges and directly between distribution companies), followed by 4016.74 MUs (3.91%) through day ahead collective transactions on power exchanges (IEX and PXIL) and 2522.71 MUs (2.46%) through DSM (Table-1 & Figure-2).

Of the total short-term transactions, bilateral constitutes 45.82% (33.98% through traders and term-ahead contracts on power exchanges and 11.84% directly between distribution companies) followed by 33.28% through day ahead collective transactions on power exchanges and 20.90% 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 36 trading licensees as on August, 2017. In August, 2017, 22 trading licensees were engaged in short term trading. Top 5 trading licensees had a share of 71.19% in the total volume traded by all the licensees. These are PTC India Ltd., Mittal Processor (P) Ltd., Tata Power Trading Company Pvt. Ltd., Manikaran Power Ltd. and GMR Energy Trading 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 0.1725 for the month of August, 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 3982.18 MUs and 34.56 MUs respectively. The volume of total buy bids and sell bids was 5047.50 MUs and 6157.55 MUs respectively in IEX while the same was 49.05 MUs and 66.97 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 116.32 MUs and 38.11 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 ₹2.24/kWh, ₹7.75/kWh and ₹3.35/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 ₹3.31/kWh, ₹3.77/kWh, and ₹3.39/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 ₹0.40/kWh, ₹8.00/kWh and ₹3.24/kWh respectively in IEX and ₹1.50/kWh, ₹4.51/kWh and ₹3.21/kWh respectively in PXIL (Table-5).

The price of electricity transacted through IEX and PXIL in the term-ahead market was ₹3.70/kWh and ₹4.42/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 ₹8.24/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 52.88% of the volume, and these were Himachal Pradesh, Sembcorp Gayatri Power Ltd., Jammu & Kashmir, Madhya Pradesh and Jaypee Nigrie Super Thermal Power Project. Top 5 regional entities purchased 60.15% of the volume, and these were Punjab, Haryana, Delhi, Uttar Pradesh and Telangana (Table-9 & 10).

Of the total power exchange transactions, top 5 regional entities sold 41.53% of the volume, and these were TEESTA STG3 Hydro Power Project, Gujarat, Jaypee Karcham Hydro Corporation Limited, Madhya Pradesh and Himachal Pradesh. Top 5 regional entities purchased 54.79% of the volume, and these were Telangana, West Bengal, Uttar Pradesh, Maharashtra and Bihar (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 38.90% of the volume, and these were National Thermal Power Corporation Ltd. Stations (Western region), National Thermal Power Corporation Ltd. Stations (Northern region), Gujarat, Telangana and Tamil Nadu (Table-13). Top 5 regional entities overdrew 27.45% of the volume, and these were Uttar Pradesh, National Thermal Power Corporation Ltd. Stations (Northern region), Rajasthan, Maharashtra and West Bengal (Table-14).

Regional entity-wise total volume of net short-term transactions of electricity i.e. volume of net transactions through bilateral, power exchanges and DSM is shown in Table-15 & 19. Top 5 electricity selling regional entities were Himachal Pradesh, Jammu & Kashmir, Sembcorp Gayatri Power Ltd., Madhya Pradesh and TEESTA STG3 Hydro Power Project. Top 5 electricity purchasing regional entities were Punjab, Uttar Pradesh, Telangana, Haryana 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.

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.

In the month of August, 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 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 1.07% and 8.18% of the unconstrained cleared volume respectively. In terms of time, congestion occurred was 11.12% in IEX and 5.68% in PXIL (Table-16).

V: Bilateral Contracts executed by Traders

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

(i) Duration of bilateral contracts: During September, 2017, a total of 90 bilateral contracts (excluding banking/swap contracts) have been executed by traders for the volume of 1299.64 MUs. Figure-7 shows the percentage of contracts categorized according to the period of power supply. It can be observed from the figure that 78.9% of the bilateral contracts were executed for duration of up to one week, 20.0% of the contracts were executed for duration of more than a week and up to one month, 1.1% of the contracts were executed for duration of more than one month and upto 3 months, while no contracts were executed for duration of more than 3 months and upto 12 months.

During the month, 70 banking/swapping bilateral contracts were also executed for the volume of 545.19 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 September, 2017 to 30th November, 2017 based on the bilateral contracts⁴ executed till September, 2017. Forward curves have been drawn for the contracts executed in August, 2017 and September, 2017 for the purpose of comparison. It is observed that forward contract prices are significantly higher (for the period from 5th September to 8th October 2017) for the contracts executed in September, 2017 compared to the contracts executed in August, 2017, after which, 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 was held on power exchanges in August, 2011.

Trading in Renewable Energy Certificates (RECs) which was stayed by the Supreme Court in May 2017 has been allowed since July, 2017. However, the order restricted the trading of non-solar RECs on the condition to comply with the earlier prices.

The details of REC transactions for the month of August, 2017 are shown in Table-20. Market clearing volume of non-solar RECs transacted on IEX and PXIL were 81545 and 207960 respectively and the market clearing price of these RECs was ₹1500/MWh on both the power exchanges.

The gap between the volume of buy and sell bids of RECs placed through power exchanges shows about the variation in demand for non-solar RECs. For non-solar RECs, the ratio of buy bids to sell bids was 0.011 and 0.050 for IEX and PXIL respectively.

⁴Excluding Banking/Swapping contracts

VII: Inferences:

- The percentage of short-term transactions of electricity to total electricity generation was 11.75%.
- Of the total short-term transactions of electricity, 45.82% was transacted through bilateral (through traders and term ahead contracts on power exchanges and directly by distribution companies), followed by 33.28% through power exchanges and 20.90% through DSM.
- Top 5 trading licensees had a share of 71.19% 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 0.1725, indicating moderate concentration of market power.
- The weighted average price of electricity transacted through trading licensees was ₹3.35/kWh. The weighted average prices of electricity transacted through IEX and PXIL were ₹3.24/kWh and ₹3.21/kWh respectively.
- The average price of electricity transacted through DSM was ₹1.85/kWh.
- Top 5 electricity selling regional entities were Himachal Pradesh, Jammu & Kashmir, Sembcorp Gayatri Power Ltd., Madhya Pradesh and TEESTA STG3 Hydro Power Project. Top 5 electricity purchasing regional entities were Punjab, Uttar Pradesh, Telangana, Haryana and Bihar.
- The volume of electricity that could not be cleared in IEX and PXIL due to congestion was 1.07% and 8.18% of the unconstrained cleared volume respectively. In terms of time, congestion occurred was 11.12% in IEX and 5.68% in PXIL.
- In September, 2017, 78.9% of the bilateral contracts were executed for duration of up to one week, 20.0% of the contracts were executed for duration of more than a week and up to one month, 1.1% of the contracts were executed for duration of more than one month and upto 3 months, while no contracts were executed for duration of more than 3 months and upto 12 months.

- The forward curve of electricity sale prices for the period from 1st September, 2017 to 30th November, 2017 based on the bilateral contracts⁵ executed till September, 2017 shows that forward contract prices are significantly higher (for the period from 5th September to 8th October 2017) for the contracts executed in September, 2017 compared to the contracts executed in August, 2017, after which, the prices of both the contracts have been moving together.
- Trading in Renewable Energy Certificates (RECs) which was stayed by the Supreme Court in May 2017 has been allowed since July, 2017. However, the order restricted the trading of non-solar RECs on the condition to comply with the earlier prices. Market clearing volume of non-solar RECs transacted on IEX and PXIL were 81545 and 207960 respectively and the market clearing price of these RECs was ₹1500/MWh on both the power exchanges.

⁵*Excluding Banking/Swapping contracts*

Table-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (ALL INDIA), AUGUST 2017				
Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	5530.53	45.82	5.38
	(i) Through Traders and PXs	4100.94	33.98	3.99
	(ii) Direct	1429.59	11.84	1.39
2	Through Power Exchanges	4016.74	33.28	3.91
	(i) IEX	3982.18	32.99	3.88
	(ii) PXIL	34.56	0.29	0.034
3	Through DSM	2522.71	20.90	2.46
	Total	12069.97	-	11.75
	Total Generation	102716.80	-	-

Source: NLDC

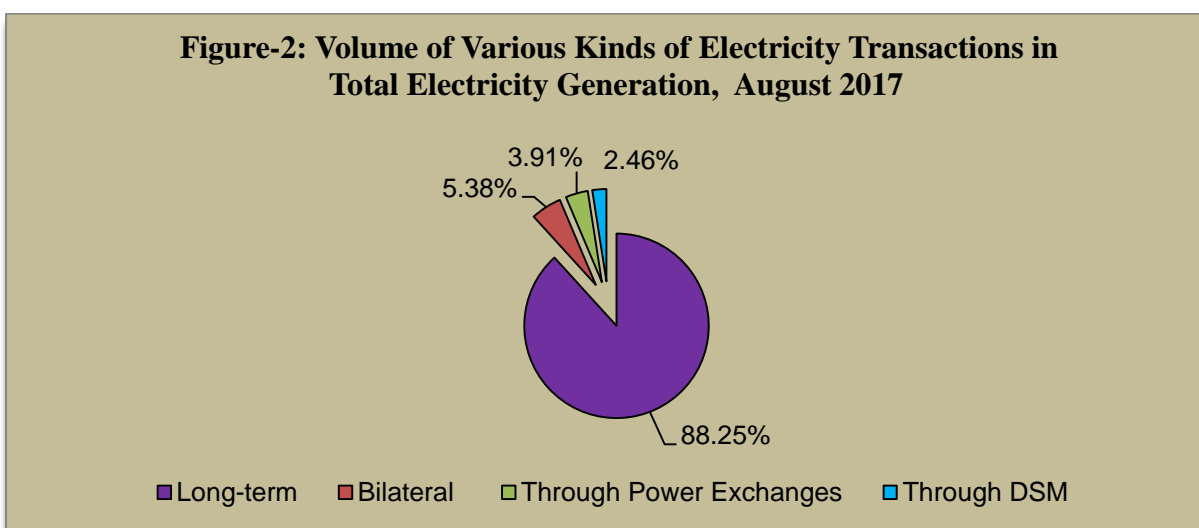
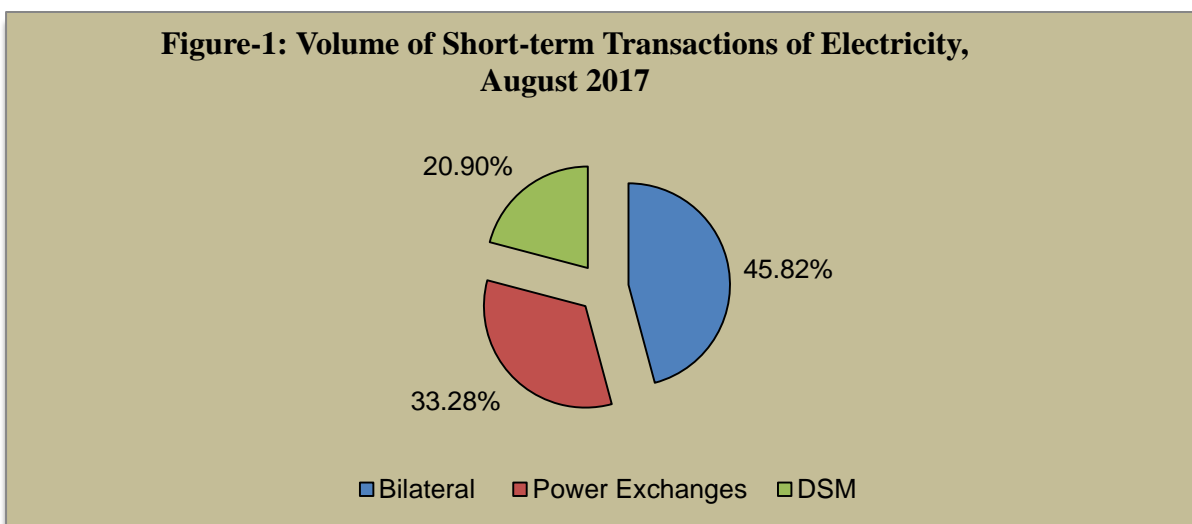


Figure-3: Volume of Short-term Transactions of Electricity, August 2017 (Day-wise)

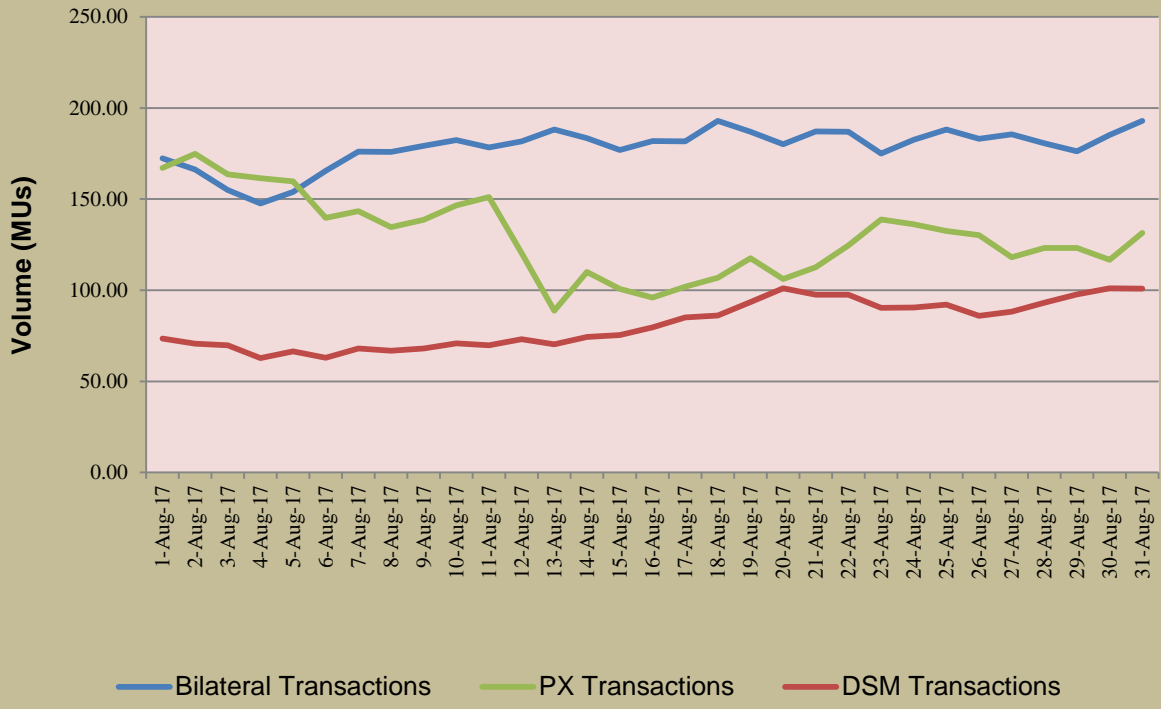


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, AUGUST 2017			
Sr.No	Name of the Trading Licensee	% Share in total Volume transacted by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd.	35.87	0.1287
2	Mittal Processors (P) Ltd.	12.16	0.0148
3	Tata Power Trading Company (P) Ltd.	8.57	0.0073
4	Manikaran Power Ltd.	8.32	0.0069
5	GMR Energy Trading Ltd.	6.26	0.0039
6	Arunachal Pradesh Power Corporation (P) ltd	5.79	0.0033
7	NTPC Vidyut Vyapar Nigam Ltd.	5.01	0.0025
8	JSW Power Trading Company Ltd	4.69	0.0022
9	Essar Electric Power Development Corp. Ltd.	3.64	0.0013
10	Jaiprakash Associates Ltd.	2.62	0.0007
11	Adani Enterprises Ltd.	2.02	0.0004
12	Statkraft Markets Pvt. Ltd.	1.30	0.0002
13	National Energy Trading & Services Ltd.	1.10	0.0001
14	Knowledge Infrastructure Systems (P) Ltd	0.79	0.0001
15	RPG Power Trading Company Ltd.	0.44	0.0000
16	Shyam Indus Power Solutions Private Limited	0.38	0.0000
17	Instinct Infra & Power Ltd.	0.31	0.0000
18	Customized Energy Solutions India (P) Ltd.	0.26	0.0000
19	Shree Cement Ltd.	0.23	0.0000
20	Gita Power & Infrastructure Private Limited	0.11	0.0000
21	Parshavanath Power Projects Private Limited	0.10	0.0000
22	Phillip Commodities India (P) Ltd.	0.02	0.0000
TOTAL		100.00%	0.1725
Top 5 trading licensees		71.19%	
<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>			

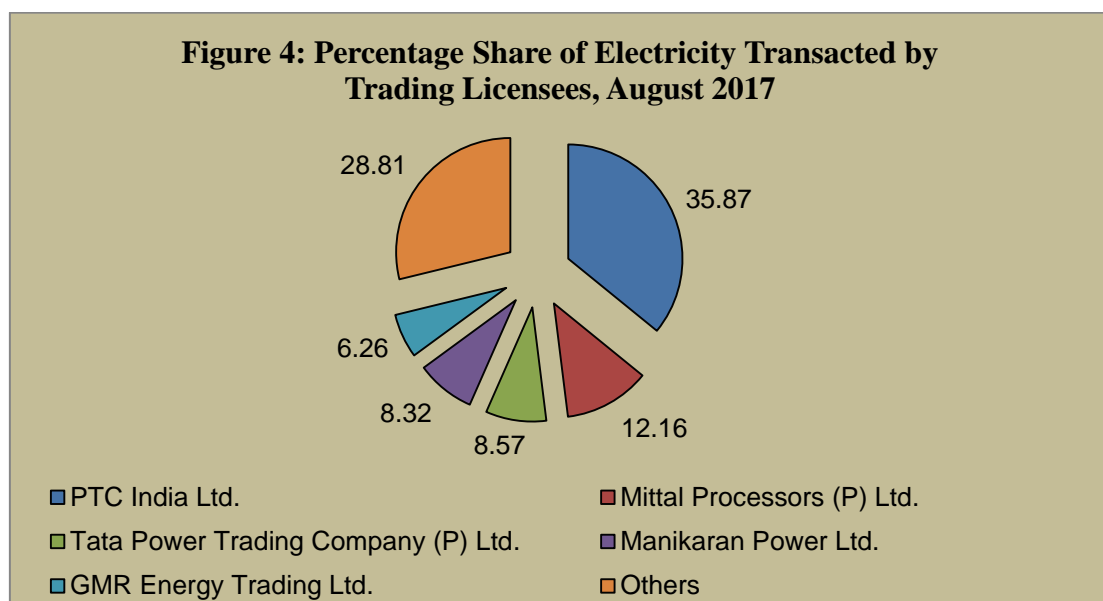


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, AUGUST 2017		
Sr.No	Item	Sale Price of Traders (₹/kWh)
1	Minimum	2.24
2	Maximum	7.75
3	Weighted Average	3.35

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), AUGUST 2017		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	3.31
2	PEAK	3.77
3	OFF PEAK	3.39

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, AUGUST 2017			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	0.40	1.50
2	Maximum	8.00	4.51
3	Weighted Average	3.24	3.21

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, AUGUST 2017			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	26.55	4.30
2	Day Ahead Contingency Contracts	19.20	3.63
3	Daily Contracts	70.57	3.50
	Total	116.32	3.70

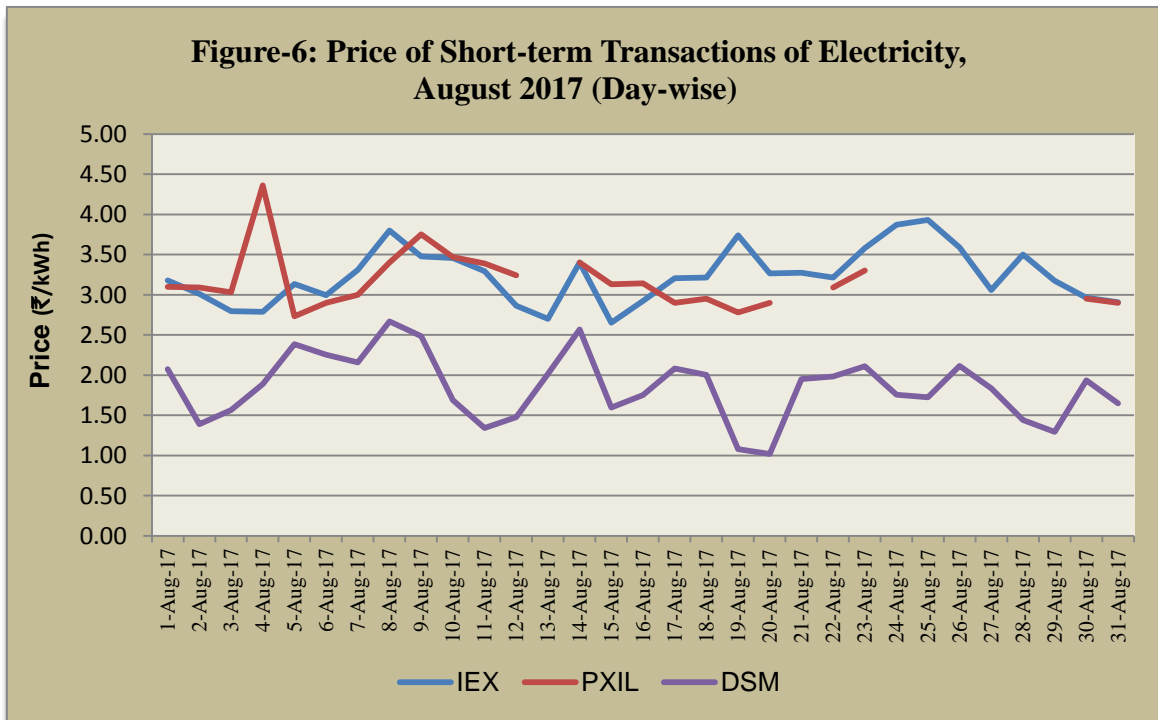
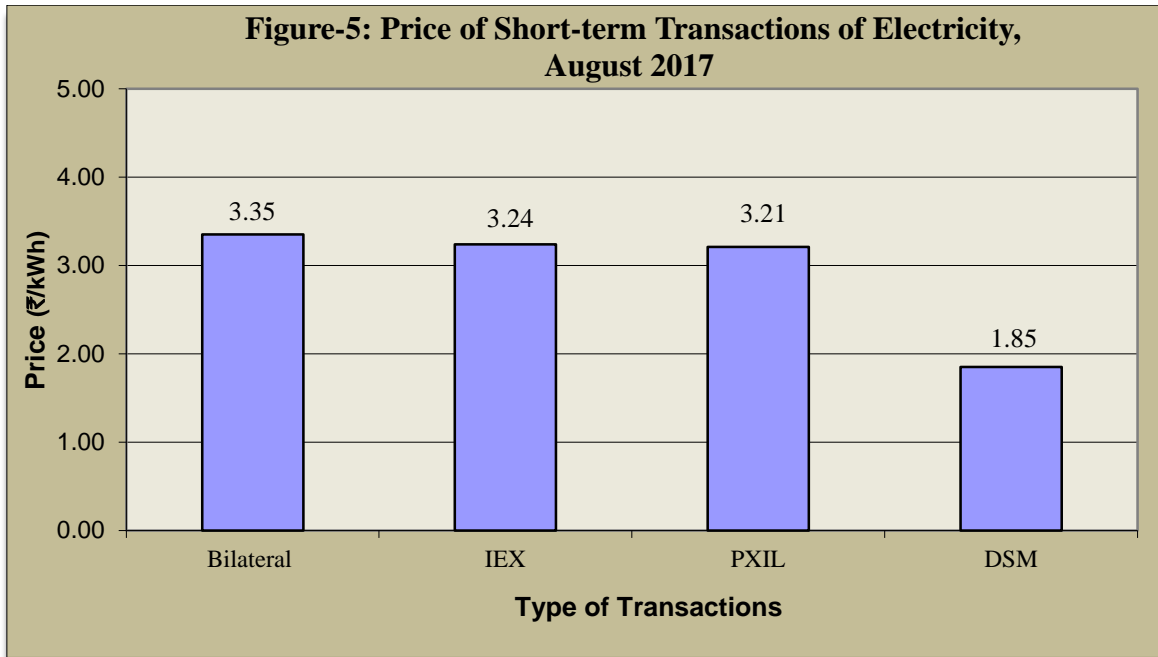
Source: IEX

Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, AUGUST 2017			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	38.11	4.42
	Total	38.11	4.42

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH DSM, AUGUST 2017		
Sr.No	Item	Price in All India Grid (₹/kWh)
1	Minimum	0.00
2	Maximum	8.24
3	Average	1.85

Source: NLDC



Note: For PXIL, on 13th, 21st, 24th, 25th, 27th, 28th and 29th August 2017, there were no sellers in Day Ahead Product, hence, discontinuous price curve.

Table-9: VOLUME OF ELECTRICITY SOLD THROUGH BILATERAL, AUGUST 2017		
Name of the Entity	Volume of Sale (MUs)	% of Volume
HIMACHAL PRADESH	995.01	17.84
SEMBCORP	623.01	11.17
J & K	548.02	9.83
MP	431.06	7.73
JAYPEE NIGRIE	352.23	6.32
ANDHRA PRADESH	284.65	5.10
UTTARAKHAND	210.43	3.77
WEST BENGAL	196.27	3.52
GUJARAT	194.91	3.49
KARCHAM WANGTOO	146.18	2.62
ADHUNIK POWER LTD	138.97	2.49
JINDAL POWER	131.99	2.37
MAHARASHTRA	100.52	1.80
DB POWER	96.63	1.73
RAJASTHAN	93.29	1.67
DAGACHU	90.56	1.62
MEGHALAYA	78.96	1.42
JITPL	76.99	1.38
MB POWER	75.31	1.35
ESSAR POWER	72.51	1.30
MEENAKSHI	71.98	1.29
THERMAL POWERTECH	67.29	1.21
ODISHA	58.10	1.04
SHREE CEMENT	47.84	0.86
ACBIL	39.22	0.70
SIKKIM	32.41	0.58
TELANGANA	29.74	0.53
ONGC PALATANA	28.03	0.50
DVC	26.80	0.48
TEESTA STG3	25.28	0.45
CHUZACHEN HEP	24.46	0.44
AD HYDRO	23.31	0.42
ASSAM	18.60	0.33
DIKCHU HEP	15.58	0.28
JINDAL STAGE-II	15.27	0.27
MANIPUR	14.01	0.25
DELHI	12.83	0.23
SPECTRUM	11.34	0.20
JHARKHAND	10.42	0.19
MARUTI COAL	10.24	0.18
LANKO_AMK	9.91	0.18
KARNATAKA	9.74	0.17
GOA	8.81	0.16
GMR KAMALANGA	7.50	0.13
TAMIL NADU	6.47	0.12
JHABUA POWER_MP	5.30	0.10
BALCO	3.54	0.06
PUNJAB	2.65	0.05
TOTAL	5577.01	100.00
Volume Sold by top 5 Regional Entities	2949.32	52.88

Table-10: VOLUME OF ELECTRICITY PURCHASED THROUGH BILATERAL, AUGUST 2017		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
PUNJAB	1269.01	22.99
HARYANA	673.66	12.21
DELHI	557.70	10.10
UTTAR PRADESH	439.30	7.96
TELANGANA	380.31	6.89
TAMIL NADU	334.64	6.06
CHHATTISGARH	328.83	5.96
MAHARASHTRA	291.88	5.29
ANDHRA PRADESH	227.77	4.13
BANGLADESH	183.03	3.32
BIHAR	139.42	2.53
JHARKHAND	109.70	1.99
WEST BENGAL	95.85	1.74
NEPAL(NVVN)	74.45	1.35
ESSAR STEEL	65.80	1.19
UTTARAKHAND	61.14	1.11
ASSAM	53.95	0.98
ODISHA	43.82	0.79
KERALA	41.31	0.75
GUJARAT	38.40	0.70
DADRA & NAGAR HAVELI	28.89	0.52
MP	20.67	0.37
GOA	19.36	0.35
RAJASTHAN	14.32	0.26
TRIPURA	11.33	0.21
HIMACHAL PRADESH	8.96	0.16
KARNATAKA	2.57	0.05
DVC	1.75	0.03
BALCO	1.24	0.02
MANIPUR	0.43	0.01
TOTAL	5519.48	100.00
Volume Purchased by top 5 Regional Entities	3319.97	60.15

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

Name of the Entity	Volume of Sale (MUs)	% of Volume
TEESTA STG3	509.18	12.68
GUJARAT	492.80	12.27
KARCHAM WANGTOO	231.05	5.75
MP	222.74	5.55
HIMACHAL PRADESH	212.49	5.29
JINDAL POWER	167.26	4.16
J & K	160.18	3.99
DELHI	140.04	3.49
JAYPEE NIGRIE	113.10	2.82
RAJASTHAN	106.91	2.66
MAHARASHTRA	93.35	2.32
KARNATAKA	85.58	2.13
AD HYDRO	81.58	2.03
SEMBCORP	79.95	1.99
JITPL	66.38	1.65
NLC	65.24	1.62
JORETHANG	62.20	1.55
TELANGANA	60.89	1.52
MB POWER	60.57	1.51
SIKKIM	59.51	1.48
MEGHALAYA	57.75	1.44
DVC	54.17	1.35
DB POWER	48.99	1.22
THERMAL POWERTECH	48.64	1.21
SHREE CEMENT	48.17	1.20
SPECTRUM	46.24	1.15
UTTAR PRADESH	45.08	1.12
DIKCHU HEP	44.17	1.10
MAITHON POWER LTD	44.09	1.10
CHUZACHEN HEP	42.23	1.05
ODISHA	40.59	1.01
UTTARAKHAND	35.05	0.87
ANDHRA PRADESH	34.82	0.87
TAMIL NADU	33.89	0.84
JHABUA POWER_MP	31.55	0.79
HARYANA	30.04	0.75
NTPC STATIONS-WR	25.73	0.64
NJPC	25.64	0.64
PUNJAB	24.95	0.62
TRIPURA	24.63	0.61
ASSAM	15.72	0.39

ADHUNIK POWER LTD	14.32	0.36
MANIPUR	13.12	0.33
MIZORAM	12.44	0.31
CHANDIGARH	11.32	0.28
ACBIL	10.27	0.26
GMR KAMALANGA	8.76	0.22
NTPC STATIONS-ER	8.49	0.21
MALANA	8.42	0.21
WEST BENGAL	7.57	0.19
ONGC PALATANA	7.24	0.18
CHHATTISGARH	6.79	0.17
LANCO BUDHIL	6.40	0.16
ESSAR POWER	4.59	0.11
MARUTI COAL	4.25	0.11
GOA	4.08	0.10
KERALA	3.90	0.10
NAGALAND	3.20	0.08
MEENAKSHI	2.17	0.05
ILF&S	1.78	0.04
DADRA & NAGAR HAVELI	1.52	0.04
NTPC STATIONS-NER	1.32	0.03
DHARIWAL POWER	0.84	0.02
NTPC STATIONS-NR	0.70	0.02
EMCO	0.10	0.00
TOTAL	4016.74	100.00
Volume sold by top 5 Regional Entities	1668.27	41.53

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

Name of the Entity	Volume of Purchase (MUs)	% of Volume
TELANGANA	649.79	16.18
WEST BENGAL	499.11	12.43
UTTAR PRADESH	366.27	9.12
MAHARASHTRA	345.88	8.61
BIHAR	339.56	8.45
KARNATAKA	227.07	5.65
KERALA	208.42	5.19
RAJASTHAN	205.81	5.12
GUJARAT	199.81	4.97
ASSAM	172.83	4.30
ANDHRA PRADESH	158.78	3.95
HARYANA	119.06	2.96
BALCO	66.30	1.65
CHHATTISGARH	64.23	1.60
ODISHA	52.19	1.30
ESSAR STEEL	44.68	1.11
UTTARAKHAND	39.06	0.97
DELHI	38.19	0.95
MP	36.82	0.92
DAMAN AND DIU	34.82	0.87
GOA	34.68	0.86
DVC	23.53	0.59
HIMACHAL PRADESH	23.20	0.58
TAMIL NADU	18.95	0.47
MEGHALAYA	13.40	0.33
DADRA & NAGAR HAVELI	12.60	0.31
TRIPURA	5.88	0.15
PUNJAB	4.41	0.11
PONDICHERRY	4.12	0.10
CHANDIGARH	3.28	0.08
J & K	1.89	0.05
NAGALAND	1.59	0.04
MANIPUR	0.52	0.01
MIZORAM	0.01	0.00
TOTAL	4016.74	100.00
Volume purchased by top 5 Regional Entities	2200.61	54.79

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

Name of the Entity	Volume of Under drawal (MUs)	% of Volume
NTPC STATIONS-WR	158.56	9.46
NTPC STATIONS-NR	153.96	9.18
GUJARAT	124.67	7.44
TELANGANA	108.63	6.48
TAMIL NADU	106.44	6.35
MAHARASHTRA	63.23	3.77
SASAN UMP	56.74	3.38
MP	54.35	3.24
ANDHRA PRADESH	53.04	3.16
KARNATAKA	50.57	3.02
PUNJAB	47.92	2.86
NLC	43.34	2.58
DELHI	39.85	2.38
J & K	38.78	2.31
RAJASTHAN	36.95	2.20
UTTARAKHAND	33.62	2.01
HARYANA	32.63	1.95
UTTAR PRADESH	27.34	1.63
CHHATTISGARH	26.36	1.57
BIHAR	26.06	1.55
NTPC STATIONS-ER	20.48	1.22
JHARKHAND	18.57	1.11
ODISHA	17.10	1.02
NEPAL(NVVN)	16.11	0.96
ESSAR STEEL	15.76	0.94
NTPC STATIONS-SR	15.64	0.93
MEGHALAYA	15.62	0.93
GOA	15.42	0.92
NEEPCO STATIONS	13.58	0.81
TEESTA STG3	12.29	0.73
HIMACHAL PRADESH	11.69	0.70
DVC	11.52	0.69
ARUNACHAL PRADESH	10.93	0.65
CHANDIGARH	9.76	0.58
KARCHAM WANGTOO	9.48	0.57
WEST BENGAL	8.76	0.52
PONDICHERRY	8.53	0.51
CGPL	8.50	0.51
GMR KAMALANGA	7.87	0.47
THERMAL POWERTECH	7.47	0.45
JINDAL POWER	7.46	0.45
TEESTA HEP	7.06	0.42
TRIPURA	6.95	0.41
ACBIL	6.17	0.37
SIKKIM	5.83	0.35
ESSAR POWER	5.70	0.34
AD HYDRO	4.87	0.29
ASSAM	4.85	0.29

MAITHON POWER LTD	4.79	0.29
MB POWER	4.65	0.28
LANKO_AMK	4.23	0.25
NAGALAND	4.21	0.25
RANGANADI HEP	4.08	0.24
DB POWER	3.93	0.23
BALCO	3.83	0.23
DADRA & NAGAR HAVELI	3.50	0.21
RGPPL (DABHOL)	3.44	0.21
URI-2	3.32	0.20
MIZORAM	3.19	0.19
KSK MAHANADI	3.16	0.19
JITPL	2.98	0.18
JORETHANG	2.87	0.17
MANIPUR	2.85	0.17
ADHUNIK POWER LTD	2.78	0.17
NSPCL	2.70	0.16
CHUZACHEN HEP	2.52	0.15
JINDAL STAGE-II	2.42	0.14
DCPP	2.26	0.13
SEMBCORP	2.20	0.13
BANGLADESH	2.17	0.13
KERALA	1.99	0.12
JAYPEE NIGRIE	1.88	0.11
TRN ENERGY	1.81	0.11
SHREE CEMENT	1.72	0.10
COASTGEN	1.68	0.10
RANGIT HEP	1.51	0.09
EMCO	1.49	0.09
JHABUA POWER_MP	1.11	0.07
NETCL VALLUR	0.89	0.05
ILF&S	0.80	0.05
DHARIWAL POWER	0.62	0.04
LOKTAK	0.48	0.03
MALANA	0.42	0.03
LANCO BUDHIL	0.38	0.02
DAGACHU	0.37	0.02
DOYANG HEP	0.32	0.02
DAMAN AND DIU	0.19	0.01
TOTAL	1676.77	100.00
Volume Exported by top 5 Regional Entities	652.25	38.90

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

Name of the Entity	Volume of Over drawal (MUs)	% of Volume
UTTAR PRADESH	158.77	7.61
NTPC STATIONS-NR	109.11	5.23
RAJASTHAN	102.74	4.93
MAHARASHTRA	102.57	4.92
WEST BENGAL	99.37	4.76
NTPC STATIONS-ER	92.94	4.46
ODISHA	78.62	3.77
HARYANA	72.72	3.49
DVC	69.56	3.34
NTPC STATIONS-WR	67.22	3.22
MP	65.78	3.15
NTPC STATIONS-SR	63.42	3.04
KERALA	60.05	2.88
BIHAR	59.43	2.85
KARNATAKA	59.38	2.85
TAMIL NADU	57.04	2.73
ASSAM	53.99	2.59
ANDHRA PRADESH	53.39	2.56
PUNJAB	43.67	2.09
HIMACHAL PRADESH	42.77	2.05
GUJARAT	33.76	1.62
CHHATTISGARH	33.13	1.59
JHARKHAND	26.71	1.28
CGPL	26.70	1.28
DAMAN AND DIU	24.00	1.15
ESSAR STEEL	23.55	1.13
J & K	23.06	1.11
NEPAL(NVVN)	21.42	1.03
SEMBCORP	21.11	1.01
DELHI	20.68	0.99
THERMAL POWERTECH	20.52	0.98
KARCHAM WANGTOO	19.24	0.92
TELANGANA	16.15	0.77
NETCL VALLUR	15.77	0.76
UTTARAKHAND	15.33	0.73
DADRA & NAGAR HAVELI	14.68	0.70
TRIPURA	13.49	0.65
NLC	11.02	0.53
GMR KAMALANGA	9.01	0.43
DAGACHU	8.82	0.42
GOA	8.66	0.42
BALCO	8.56	0.41
NSPCL	8.42	0.40
EMCO	8.00	0.38
ILF&S	7.94	0.38
MB POWER	7.02	0.34
DCPP	6.68	0.32
MEENAKSHI	6.06	0.29
ACBIL	5.95	0.29

ADHUNIK POWER LTD	5.86	0.28
CHANDIGARH	5.62	0.27
JHABUA POWER_MP	5.47	0.26
AD HYDRO	5.18	0.25
MANIPUR	5.01	0.24
JAYPEE NIGRIE	5.00	0.24
TEESTA STG3	4.43	0.21
ARUNACHAL PRADESH	4.38	0.21
NAGALAND	4.37	0.21
NJPC	4.27	0.20
JINDAL POWER	4.22	0.20
SHREE CEMENT	4.05	0.19
MAITHON POWER LTD	3.69	0.18
PONDICHERRY	3.57	0.17
RKM POWER	3.43	0.16
COASTGEN	3.42	0.16
MEGHALAYA	3.09	0.15
JINDAL STAGE-II	2.72	0.13
MIZORAM	2.65	0.13
ESSAR POWER	2.58	0.12
SIKKIM	2.56	0.12
JORETHANG	2.41	0.12
JITPL	2.06	0.10
DB POWER	1.55	0.07
GMR CHATTISGARH	1.51	0.07
SASAN UMP	1.31	0.06
NEEPCO STATIONS	1.31	0.06
DHARIWAL POWER	1.26	0.06
CHUZACHEN HEP	1.25	0.06
TRN ENERGY	1.14	0.05
DGEN MEGA POWER	0.98	0.05
BANGLADESH	0.87	0.04
RGPPL (DABHOL)	0.82	0.04
KSK MAHANADI	0.81	0.04
LANKO KONDAPALLI	0.75	0.04
RANGANADI HEP	0.67	0.03
URI-2	0.66	0.03
SIMHAPURI	0.65	0.03
KORBA WEST POWER	0.50	0.02
MALANA	0.48	0.02
RANGIT HEP	0.42	0.02
DOYANG HEP	0.39	0.02
LOKTAK	0.22	0.01
LANKO_AMK	0.05	0.00
TEESTA HEP	0.01	0.00
TOTAL	2085.64	100.00
Volume Imported by top 5 Regional Entities	572.57	27.45

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

Sr.No.	Name of the Entity	Total volume of net short-term transactions of electricity*
1	PUNJAB	1241.58
2	UTTAR PRADESH	891.92
3	TELANGANA	846.98
4	HARYANA	802.26
5	BIHAR	512.35
6	MAHARASHTRA	483.23
7	WEST BENGAL	481.73
8	DELHI	423.85
9	CHHATTISGARH	393.04
10	KERALA	303.89
11	TAMIL NADU	263.83
12	ASSAM	241.59
13	BANGLADESH	181.73
14	KARNATAKA	143.13
15	ESSAR STEEL	118.26
16	JHARKHAND	107.42
17	RAJASTHAN	85.72
18	NEPAL(NVVN)	79.76
19	BALCO	68.73
20	ANDHRA PRADESH	67.44
21	NTPC STATIONS-ER	63.97
22	ODISHA	58.85
23	DAMAN AND DIU	58.64
24	DADRA & NAGAR HAVELI	51.15
25	NTPC STATIONS-SR	47.78
26	GOA	34.40
27	CGPL	18.20
28	NETCL VALLUR	14.88
29	EMCO	6.41
30	NSPCL	5.71
31	ILF&S	5.36
32	DCPP	4.42
33	RKM POWER	3.43
34	DVC	2.34
35	COASTGEN	1.69
36	GMR CHATTISGARH	1.51
37	DGEN MEGA POWER	0.98
38	LANKO KONDAPALLI	0.75
39	SIMHAPURI	0.65
40	KORBA WEST POWER	0.50
41	DHARIWAL POWER	-0.20
42	LOKTAK	-0.27
43	TRN ENERGY	-0.68
44	PONDICHERRY	-0.84
45	TRIPURA	-0.87
46	RANGIT HEP	-1.09
47	NTPC STATIONS-NER	-1.32
48	NAGALAND	-1.44
49	KSK MAHANADI	-2.35
50	RGPPL (DABHOL)	-2.63
51	URI-2	-2.66

52	RANGANADI HEP	-3.41
53	ARUNACHAL PRADESH	-6.55
54	LANCO BUDHIL	-6.78
55	TEESTA HEP	-7.05
56	MALANA	-8.36
57	CHANDIGARH	-12.18
58	NEEPCO STATIONS	-12.26
59	MIZORAM	-12.98
60	LANKO_AMK	-14.08
61	MARUTI COAL	-14.49
62	JINDAL STAGE-II	-14.97
63	GMR KAMALANGA	-15.12
64	NJPC	-21.37
65	MANIPUR	-24.02
66	JHABUA POWER_MP	-32.49
67	ONGC PALATANA	-35.27
68	MAITHON POWER LTD	-45.19
69	NTPC STATIONS-NR	-45.55
70	ACBIL	-49.71
71	SASAN UMPP	-55.43
72	SPECTRUM	-57.58
73	DIKCHU HEP	-59.75
74	JORETHANG	-64.96
75	CHUZACHEN HEP	-67.95
76	MEENAKSHI	-68.08
77	ESSAR POWER	-80.21
78	DAGACHU	-82.11
79	SHREE CEMENT	-93.68
80	SIKKIM	-95.18
81	NLC	-97.56
82	THERMAL POWERTECH	-102.88
83	AD HYDRO	-104.58
84	NTPC STATIONS-WR	-117.07
85	MB POWER	-133.50
86	MEGHALAYA	-135.85
87	JITPL	-144.29
88	DB POWER	-148.00
89	ADHUNIK POWER LTD	-150.21
90	UTTARAKHAND	-163.57
91	JINDAL POWER	-302.50
92	KARCHAM WANGTOO	-367.46
93	JAYPEE NIGRIE	-462.22
94	GUJARAT	-540.42
95	TEESTA STG3	-542.31
96	MP	-584.88
97	SEMBCORP	-684.05
98	J & K	-722.03
99	HIMACHAL PRADESH	-1144.27
* 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, AUGUST 2017			
	Details of Congestion	IEX	PXIL
A	Unconstrained Cleared Volume* (MUs)	4084.34	37.64
B	Actual Cleared Volume and hence scheduled (MUs)	4040.69	34.56
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	43.65	3.08
D	Volume of electricity that could not be cleared as % to Unconstrained Cleared Volume	1.07%	8.18%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	11.12%	5.68%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	12.69%	14.20%
	6.00 - 12.00 hours	39.88%	28.99%
	12.00 - 18.00 hours	26.59%	28.40%
	18.00 - 24.00 hours	20.85%	28.40%
* 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), AUGUST 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-Aug-17	112.62	59.78	164.77	2.40	73.45	3273.63
2-Aug-17	114.94	51.28	172.45	2.40	70.67	3185.45
3-Aug-17	108.86	46.08	160.05	3.60	69.78	3181.12
4-Aug-17	101.33	46.20	161.19	0.39	62.76	3175.96
5-Aug-17	105.66	48.34	157.28	2.44	66.40	3278.67
6-Aug-17	115.72	49.86	139.64	0.04	62.98	3325.29
7-Aug-17	124.43	51.62	141.00	2.40	68.07	3376.62
8-Aug-17	126.23	49.72	133.11	1.44	66.85	3442.05
9-Aug-17	128.58	50.71	137.15	1.44	68.02	3490.17
10-Aug-17	132.90	49.59	145.77	0.72	70.89	3452.63
11-Aug-17	133.99	44.41	148.80	2.40	69.77	3386.17
12-Aug-17	137.91	43.87	120.06	0.28	73.10	3288.37
13-Aug-17	144.77	43.41	88.76	0.00	70.32	3253.76
14-Aug-17	139.83	43.57	106.77	3.30	74.34	3417.33
15-Aug-17	134.45	42.48	98.34	2.40	75.36	3308.47
16-Aug-17	138.38	43.42	94.20	1.80	79.70	3403.44
17-Aug-17	138.06	43.60	101.84	0.04	84.99	3522.91
18-Aug-17	149.06	43.90	106.77	0.04	86.04	3580.53
19-Aug-17	143.54	43.50	115.64	1.90	93.44	3437.73
20-Aug-17	135.76	44.34	106.16	0.04	101.03	3189.36
21-Aug-17	142.83	44.33	112.57	0.00	97.53	3287.94
22-Aug-17	143.06	43.94	123.37	1.20	97.57	3352.61
23-Aug-17	131.15	43.86	137.43	1.44	90.26	3416.81
24-Aug-17	138.60	43.94	136.19	0.00	90.47	3414.17
25-Aug-17	141.71	46.55	132.57	0.00	92.12	3236.06
26-Aug-17	137.08	45.96	127.85	2.40	85.98	3238.50
27-Aug-17	140.47	45.18	118.04	0.00	88.21	3139.43
28-Aug-17	136.22	44.50	123.11	0.00	93.15	3177.32
29-Aug-17	133.35	42.91	123.25	0.00	97.65	3099.64
30-Aug-17	140.65	44.51	116.57	0.04	101.01	3146.49
31-Aug-17	148.79	44.23	131.47	0.04	100.81	3238.17
Total	4100.94	1429.59	3982.18	34.56	2522.71	102716.80

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), AUGUST, 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-Aug-17	1.95	6.21	3.18	3.10	3.10	3.10	0.00	7.20	2.08
2-Aug-17	2.11	6.11	3.01	3.09	3.09	3.09	0.00	3.45	1.39
3-Aug-17	1.56	6.11	2.80	3.02	3.03	3.03	0.00	3.45	1.57
4-Aug-17	1.75	6.00	2.79	1.50	4.51	4.36	0.00	5.95	1.89
5-Aug-17	1.60	6.01	3.13	2.73	2.73	2.73	0.36	5.32	2.39
6-Aug-17	1.50	6.01	2.99	2.90	2.90	2.90	0.00	5.32	2.25
7-Aug-17	2.02	6.11	3.31	3.00	3.00	3.00	0.00	8.24	2.16
8-Aug-17	2.12	7.20	3.80	3.40	3.40	3.40	0.36	6.16	2.67
9-Aug-17	2.12	6.11	3.48	3.75	3.75	3.75	0.00	6.16	2.49
10-Aug-17	1.64	7.01	3.45	3.47	3.47	3.47	0.00	3.45	1.69
11-Aug-17	1.34	7.11	3.29	3.39	3.39	3.39	0.00	3.03	1.34
12-Aug-17	0.50	7.16	2.86	3.24	3.24	3.24	0.00	3.45	1.48
13-Aug-17	0.40	7.35	2.70	-	-	0.00	0.00	3.45	2.02
14-Aug-17	1.60	7.51	3.40	3.39	3.42	3.40	0.00	6.36	2.57
15-Aug-17	0.50	4.47	2.65	3.13	3.13	3.13	0.00	3.45	1.60
16-Aug-17	0.80	5.82	2.92	3.14	3.14	3.14	0.00	3.24	1.75
17-Aug-17	1.00	6.02	3.21	2.90	2.90	2.90	0.00	7.20	2.08
18-Aug-17	1.00	6.21	3.22	2.95	2.95	2.95	0.00	5.32	2.00
19-Aug-17	2.07	7.21	3.74	2.78	2.78	2.78	0.00	2.41	1.08
20-Aug-17	0.60	6.03	3.27	2.90	2.90	2.90	0.00	3.45	1.02
21-Aug-17	2.10	6.50	3.27	-	-	0.00	0.00	5.11	1.95
22-Aug-17	2.00	6.11	3.21	3.09	3.09	3.09	0.00	5.11	1.98
23-Aug-17	2.25	6.25	3.58	3.30	3.30	3.30	0.00	6.16	2.11
24-Aug-17	2.15	7.51	3.87	-	-	0.00	0.00	3.24	1.75
25-Aug-17	2.15	8.00	3.93	-	-	0.00	0.00	5.11	1.72
26-Aug-17	2.15	7.91	3.59	3.77	3.77	3.77	0.00	3.45	2.11
27-Aug-17	1.85	5.25	3.06	-	-	0.00	0.00	3.45	1.83
28-Aug-17	2.22	7.91	3.50	-	-	0.00	0.00	3.45	1.44
29-Aug-17	1.58	5.29	3.18	-	-	0.00	0.00	3.45	1.29
30-Aug-17	1.88	6.01	2.96	2.95	2.95	2.95	0.00	3.45	1.93
31-Aug-17	1.03	6.04	2.91	2.90	2.90	2.90	0.00	3.45	1.65
	0.40#	8.00#	3.24	1.50#	4.51#	3.21	0.00#	8.24#	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), AUGUST 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	2.65	1269.01	1266.36	24.95	4.41	-20.54	43.67	47.92	-4.25	1241.58
HARYANA	0.50	673.66	673.16	30.04	119.06	89.02	72.72	32.63	40.08	802.26
RAJASTHAN	93.29	14.32	-78.96	106.91	205.81	98.89	102.74	36.95	65.79	85.72
DELHI	12.83	557.70	544.87	140.04	38.19	-101.85	20.68	39.85	-19.17	423.85
UP	0.00	439.30	439.30	45.08	366.27	321.19	158.77	27.34	131.43	891.92
UTTARAKHAND	210.43	61.14	-149.29	35.05	39.06	4.01	15.33	33.62	-18.29	-163.57
HP	995.01	8.96	-986.05	212.49	23.20	-189.30	42.77	11.69	31.08	-1144.27
J & K	548.02	0.00	-548.02	160.18	1.89	-158.29	23.06	38.78	-15.72	-722.03
CHANDIGARH	0.00	0.00	0.00	11.32	3.28	-8.05	5.62	9.76	-4.14	-12.18
MP	431.06	20.67	-410.38	222.74	36.82	-185.92	65.78	54.35	11.43	-584.88
MAHARASHTRA	100.52	291.88	191.36	93.35	345.88	252.52	102.57	63.23	39.35	483.23
GUJARAT	194.91	38.40	-156.51	492.80	199.81	-292.99	33.76	124.67	-90.91	-540.42
CHHATTISGARH	0.00	328.83	328.83	6.79	64.23	57.43	33.13	26.36	6.77	393.04
GOA	8.81	19.36	10.55	4.08	34.68	30.60	8.66	15.42	-6.76	34.40
DAMAN & DIU	0.00	0.00	0.00	0.00	34.82	34.82	24.00	0.19	23.82	58.64
D & N HAVELI	0.00	28.89	28.89	1.52	12.60	11.08	14.68	3.50	11.17	51.15
ANDHRA PR	284.65	227.77	-56.87	34.82	158.78	123.96	53.39	53.04	0.35	67.44
KARNATAKA	9.74	2.57	-7.17	85.58	227.07	141.49	59.38	50.57	8.81	143.13
KERALA	0.00	41.31	41.31	3.90	208.42	204.52	60.05	1.99	58.05	303.89
TAMIL NADU	6.47	334.64	328.17	33.89	18.95	-14.94	57.04	106.44	-49.40	263.83
PONDICHERRY	0.00	0.00	0.00	0.00	4.12	4.12	3.57	8.53	-4.96	-0.84
TELANGANA	29.74	380.31	350.57	60.89	649.79	588.89	16.15	108.63	-92.48	846.98
WEST BENGAL	196.27	95.85	-100.43	7.57	499.11	491.54	99.37	8.76	90.62	481.73
ODISHA	58.10	43.82	-14.28	40.59	52.19	11.60	78.62	17.10	61.52	58.85
BIHAR	0.00	139.42	139.42	0.00	339.56	339.56	59.43	26.06	33.37	512.35
JHARKHAND	10.42	109.70	99.28	0.00	0.00	0.00	26.71	18.57	8.14	107.42
SIKKIM	32.41	0.00	-32.41	59.51	0.00	-59.51	2.56	5.83	-3.27	-95.18
DVC	26.80	1.75	-25.06	54.17	23.53	-30.64	69.56	11.52	58.04	2.34
ARUNACHAL P	0.00	0.00	0.00	0.00	0.00	0.00	4.38	10.93	-6.55	-6.55
ASSAM	18.60	53.95	35.34	15.72	172.83	157.10	53.99	4.85	49.14	241.59
MANIPUR	14.01	0.43	-13.58	13.12	0.52	-12.60	5.01	2.85	2.15	-24.02
MEGHALAYA	78.96	0.00	-78.96	57.75	13.40	-44.36	3.09	15.62	-12.53	-135.85
MIZORAM	0.00	0.00	0.00	12.44	0.01	-12.43	2.65	3.19	-0.55	-12.98
NAGALAND	0.00	0.00	0.00	3.20	1.59	-1.61	4.37	4.21	0.16	-1.44
TRIPURA	0.00	11.33	11.33	24.63	5.88	-18.75	13.49	6.95	6.54	-0.87
NTPC -NR	0.00	0.00	0.00	0.70	0.00	-0.70	109.11	153.96	-44.85	-45.55
NJPC	0.00	0.00	0.00	25.64	0.00	-25.64	4.27	0.00	4.27	-21.37
AD HYDRO	23.31	0.00	-23.31	81.58	0.00	-81.58	5.18	4.87	0.30	-104.58
KARCHAM WA	146.18	0.00	-146.18	231.05	0.00	-231.05	19.24	9.48	9.77	-367.46
SHREE CEMENT	47.84	0.00	-47.84	48.17	0.00	-48.17	4.05	1.72	2.32	-93.68
LANCO BUDHIL	0.00	0.00	0.00	6.40	0.00	-6.40	0.00	0.38	-0.38	-6.78
MALANA	0.00	0.00	0.00	8.42	0.00	-8.42	0.48	0.42	0.06	-8.36
NTPC -WR	0.00	0.00	0.00	25.73	0.00	-25.73	67.22	158.56	-91.33	-117.07
JINDAL POWER	131.99	0.00	-131.99	167.26	0.00	-167.26	4.22	7.46	-3.25	-302.50
LANCO_AMK	9.91	0.00	-9.91	0.00	0.00	0.00	0.05	4.23	-4.18	-14.08
NSPCL	0.00	0.00	0.00	0.00	0.00	0.00	8.42	2.70	5.71	5.71
ACBIL	39.22	0.00	-39.22	10.27	0.00	-10.27	5.95	6.17	-0.22	-49.71
BALCO	3.54	1.24	-2.30	0.00	66.30	66.30	8.56	3.83	4.73	68.73
RGPPL (DABHOI)	0.00	0.00	0.00	0.00	0.00	0.00	0.82	3.44	-2.63	-2.63
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	26.70	8.50	18.20	18.20
DCPP	0.00	0.00	0.00	0.00	0.00	0.00	6.68	2.26	4.42	4.42

EMCO	0.00	0.00	0.00	0.10	0.00	-0.10	8.00	1.49	6.50	6.41
ESSAR STEEL	0.00	65.80	65.80	0.00	44.68	44.68	23.55	15.76	7.79	118.26
KSK MAHANAD	0.00	0.00	0.00	0.00	0.00	0.00	0.81	3.16	-2.35	-2.35
ESSAR POWER	72.51	0.00	-72.51	4.59	0.00	-4.59	2.58	5.70	-3.12	-80.21
JINDAL STAGE	15.27	0.00	-15.27	0.00	0.00	0.00	2.72	2.42	0.31	-14.97
DB POWER	96.63	0.00	-96.63	48.99	0.00	-48.99	1.55	3.93	-2.38	-148.00
DHARIWAL POW	0.00	0.00	0.00	0.84	0.00	-0.84	1.26	0.62	0.64	-0.20
JAYPEE NIGRIE	352.23	0.00	-352.23	113.10	0.00	-113.10	5.00	1.88	3.11	-462.22
GMR										
CHATTISGARH	0.00	0.00	0.00	0.00	0.00	0.00	1.51	0.00	1.51	1.51
MB POWER	75.31	0.00	-75.31	60.57	0.00	-60.57	7.02	4.65	2.37	-133.50
MARUTI COAL	10.24	0.00	-10.24	4.25	0.00	-4.25	0.00	0.00	0.00	-14.49
SPECTRUM	11.34	0.00	-11.34	46.24	0.00	-46.24	0.00	0.00	0.00	-57.58
JHABUA P_MP	5.30	0.00	-5.30	31.55	0.00	-31.55	5.47	1.11	4.36	-32.49
SASAN UMPP	0.00	0.00	0.00	0.00	0.00	0.00	1.31	56.74	-55.43	-55.43
RKM POWER	0.00	0.00	0.00	0.00	0.00	0.00	3.43	0.00	3.43	3.43
NTPC -SR	0.00	0.00	0.00	0.00	0.00	0.00	63.42	15.64	47.78	47.78
MEENAKSHI	71.98	0.00	-71.98	2.17	0.00	-2.17	6.06	0.00	6.06	-68.08
COASTGEN	0.05	0.00	-0.05	0.00	0.00	0.00	3.42	1.68	1.74	1.69
THERMAL										
POWERTECH	67.29	0.00	-67.29	48.64	0.00	-48.64	20.52	7.47	13.05	-102.88
ILF&S	0.00	0.00	0.00	1.78	0.00	-1.78	7.94	0.80	7.14	5.36
NLC	0.00	0.00	0.00	65.24	0.00	-65.24	11.02	43.34	-32.32	-97.56
SEBPCORP	623.01	0.00	-623.01	79.95	0.00	-79.95	21.11	2.20	18.91	-684.05
NETCL VALLUR	0.00	0.00	0.00	0.00	0.00	0.00	15.77	0.89	14.88	14.88
NTPC -ER	0.00	0.00	0.00	8.49	0.00	-8.49	92.94	20.48	72.46	63.97
MAITHON P LTI	0.00	0.00	0.00	44.09	0.00	-44.09	3.69	4.79	-1.10	-45.19
ADHUNIK P LTI	138.97	0.00	-138.97	14.32	0.00	-14.32	5.86	2.78	3.08	-150.21
CHUZACHEN										
HEP	24.46	0.00	-24.46	42.23	0.00	-42.23	1.25	2.52	-1.26	-67.95
RANGIT HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.42	1.51	-1.09	-1.09
GMR										
KAMALANGA	7.50	0.00	-7.50	8.76	0.00	-8.76	9.01	7.87	1.14	-15.12
JITPL	76.99	0.00	-76.99	66.38	0.00	-66.38	2.06	2.98	-0.92	-144.29
TEESTA HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	7.06	-7.05	-7.05
DAGACHU	90.56	0.00	-90.56	0.00	0.00	0.00	8.82	0.37	8.45	-82.11
JORETHANG	2.30	0.00	-2.30	62.20	0.00	-62.20	2.41	2.87	-0.46	-64.96
NEPAL(NVVN)	0.00	74.45	74.45	0.00	0.00	0.00	21.42	16.11	5.31	79.76
BANGLADESH	0.00	183.03	183.03	0.00	0.00	0.00	0.87	2.17	-1.30	181.73
TEESTA STG3	25.28	0.00	-25.28	509.18	0.00	-509.18	4.43	12.29	-7.86	-542.31
DIKCHU HEP	15.58	0.00	-15.58	44.17	0.00	-44.17	0.00	0.00	0.00	-59.75
NTPC -NER	0.00	0.00	0.00	1.32	0.00	-1.32	0.00	0.00	0.00	-1.32
NEEPCO STNS	0.00	0.00	0.00	0.00	0.00	0.00	1.31	13.58	-12.26	-12.26
RANGANADI										
HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.67	4.08	-3.41	-3.41
ONGC										
PALATANA	28.03	0.00	-28.03	7.24	0.00	-7.24	0.00	0.00	0.00	-35.27
TOTAL	5577.01	5519.48	-57.53	4016.74	4016.74	0.00	2080.36	1670.83	409.53	352.00

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 September, 2017 (%)

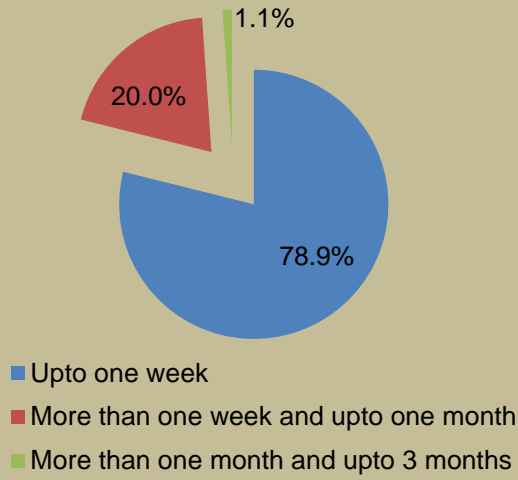


Figure-8: Forward Curve based on Prices of Bilateral Contracts

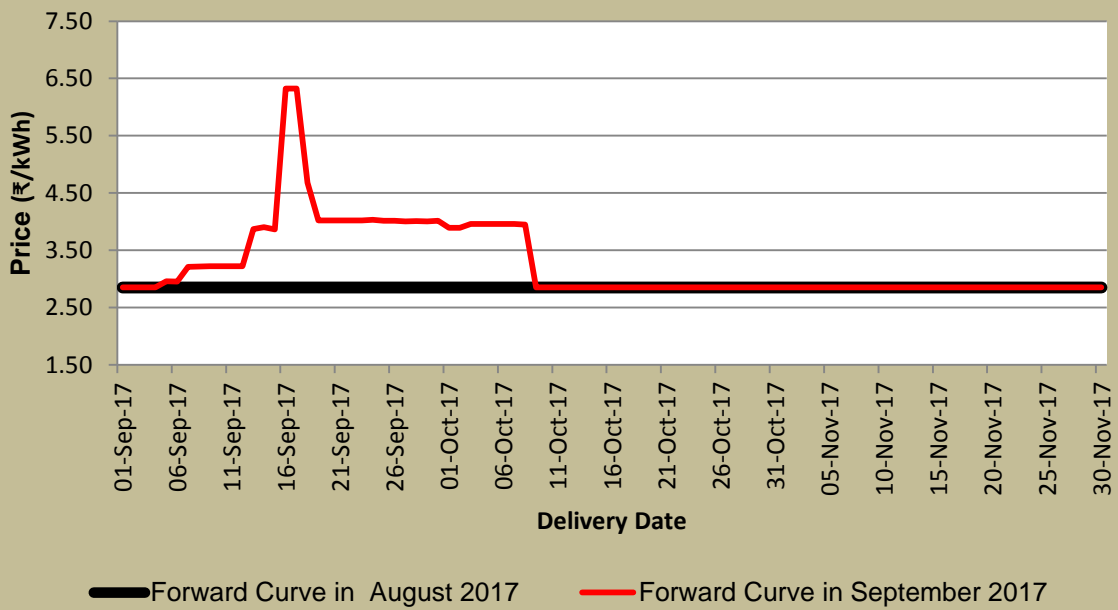


Table-20 : VOLUME AND PRICE OF RENEWABLE ENERGY CERTIFICATES (RECs) TRANSACTED THROUGH POWER EXCHANGES, AUGUST 2017			
Sr.No.	Details of REC Transactions	IEX	PXIL
		Non-Solar	Non Solar
A	Volume of Buy Bid	81545	207960
B	Volume of Sell Bid	7742748	4189386
C	Ratio of Buy Bid to Sell Bid Volume	0.011	0.050
D	Market Clearing Volume (MWh)	81545	207960
E	Market Clearing Price (₹/MWh)	1500	1500

Source: IEX and PXIL

Note 1: 1 REC = 1 MWh

Note 2:

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