

Monthly Report on Short-term Transactions of Electricity in India

August, 2016



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Abbreviations

Abbreviation	Expanded Version
ACBIL	ACB (India) Limited
ACP	Area Clearing Price
ACV	Area Clearing Volume
Adani HVDC	Adani Power Limited (High Voltage Direct Line Current Line)
AD HYDRO	AD Hydro Power Limited
BALCO	Bharat Aluminum Company Limited
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CGPL	Coastal Gujarat Power Limited
CHUZACHEN HEP	Chuzachen Hydro electric power project
COASTGEN	Coastal Energen Private Limited
DAGACHU	Dagachhu Hydro Power Corporation
DB POWER	Diligent Power Pvt. Ltd.
DCPP	Donga Mahua Captive Power Plant
DGEN MEGA POWER	DGEN Mega Power Project
DHARIWAL POWER	Dhariwal Power Station
DSM	Deviation Settlement Mechanism
DVC	Damodar Valley Corporation
EMCO	EMCO Energy Limited
ESSAR POWER	Essar Power Limited
ESSAR STEEL	Essar Steel Ltd
GMR CHHATTISGARH	GMR Chhattisgarh Energy Limited
GMR KAMALANGA	GMR Kamalanga Energy Ltd.
IEX	Indian Energy Exchange Limited
J&K	Jammu & Kashmir
JAYPEE NIGRIE	Jaypee Nigrie Super Thermal Power Project
JINDAL POWER	Jindal Power Limited
JINDAL STAGE-II	Jindal Power Ltd Stage II
JITPL	Jindal India Thermal Power Ltd.
JORETHANG	Jorethang Loop Hydroelectric Power Project
KARCHAM WANGTOO	Jaypee Karcham Hydro Corporation Limited
KORBA WEST POWER	Korba West Power Company Limited
KSK MAHANADI	KSK Mahanadi Power Ltd
LANKO BUDHIL	Lanco Budhil Hydro Power Private Limited
LANKOAMK	Lanco Amarkantak Power Private Limited
LANKOKONDAPALLY	Lanco Kondapally Power Private Limited
LOKTAK	Loktak Power Project
MALANA	Malana Hydroelectric Plant

MB POWER	MB Power Ltd
MEENAKSHI	Meenakshi Energy Private Limited
MP	Madhya Pradesh
MUs	Million Units
NEEPCO	North Eastern Electric Power Corporation Limited
NHPC STATIONS	National Hydro Electric Power Corporation Ltd. Stations
NTPC STATIONS	National Thermal Power Corporation Ltd. Stations
NJPC	Nathpa Jhakri Hydroelectric Power Station
NLDC	National Load Despatch Centre
NSPCL	NTPC - SAIL Power Company Private Limited
OTC	Over The Counter
PX	Power Exchange
PXIL	Power Exchange India Limited
RANGIT HEP	Rangit Hydro electric power project
REC	Renewable Energy Certificate
RGPPL	Ratnagiri Gas and Power Private Limited
RLDC	Regional Load Despatch Centre
RTC	Round The Clock
SHREE CEMENT	Shree Cement Limited
SIMHAPURI	Simhapuri Energy Private Limited
SPECTRUM	Spectrum Power Generation Ltd
STERLITE	Sterlite Energy Limited
TEESTA HEP	Teesta Hydro Electric Power Project
THERMAL POWERTECH	Thermal Powertech Corporation India Limited
URI2	URI2 Hydro Power Project
UT	Union Territory
VANDANA VIDYUT	Vandana Vidyut Limited

Introduction

A well-functioning electricity market requires an effective market monitoring process. As part of the market monitoring process, the monthly report on short-term transactions of electricity, is being prepared and posted on the website of CERC since August 2008. Here, “short-term transactions of electricity” refers to the contracts of less than one year period, for electricity transacted (inter-State & intra-State) through inter-State Trading Licensees and directly by the Distribution Licensees, Power Exchanges (Indian Energy Exchange Ltd (IEX) and Power Exchange India Ltd (PXIL), and Deviation Settlement Mechanism (DSM). The objectives of the report are: (i) to observe the trends in volume and price of the short-term transactions of electricity; (ii) to analyse competition among the market players; (iii) to analyse effect of congestion on volume of electricity transacted through power exchanges; (iv) to analyse bilateral contracts executed by traders; (v) to provide information on volume and price of Renewable Energy Certificates (RECs) transacted through power exchanges; and (vi) to disclose/disseminate all relevant market information. The details of the report for the month of **August, 2016** are as under:

I: Volume of Short-term Transactions of Electricity

During August 2016, total electricity generation excluding generation from renewable and captive power plants in India was 95275.93 MUs (Table-1).

Of the total electricity generation, 11834.43 MUs (12.42 %) was transacted through short-term, comprising of 6426.50 MUs (6.75%) through bilateral (through traders and term-ahead contracts on power exchanges and directly between distribution companies), followed by 3462.81 MUs (3.63%) through day ahead collective transactions on power exchanges (IEX and PXIL) and 1945.12 MUs (2.04%) through DSM (Table-1 & Figure-2).

Of the total short-term transactions, bilateral constitutes 50.30% (36.33% through traders and term-ahead contracts on power exchanges and 17.97% directly between distribution companies) followed by 29.26% through day ahead collective transactions on power exchanges and 16.44% 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, 2016. In August 2016, 22 trading licensees were engaged in short term trading. Top 5 trading licensees had a share of 80.91% in the total volume traded by all the licensees. These are PTC India Ltd., Mittal Processors (P) Ltd., Manikaran Power Ltd., Tata Power Trading Company (P) Ltd. and Arunachal Pradesh Power Corporation Ltd.

Herfindahl-Hirschman Index (HHI) has been used for measuring the competition among the trading licensees. Increase in the HHI generally indicates a decrease in competition and an increase of market concentration, and vice versa. The HHI below 0.15 indicates non-concentration, HHI between 0.15 and 0.25 indicates moderate concentration and HHI above 0.25 indicates high concentration. The HHI has been computed based on the volume of electricity traded (inter-State & intra-State) by inter-State trading licensees, and it was 0.1820 for the month of August 2016, which indicates moderate concentration of market power (Table-2).

The volume of electricity transacted through IEX and PXIL in the day ahead market was 3445.12 MUs and 17.69 MUs respectively. The volume of total buy bids and sell bids was 4105.15 MUs and 6624.90 MUs respectively in IEX while the same was 17.79 MUs and 80.69 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 35.18 MUs and 22.55 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 ₹0.03/kWh, ₹5.59/kWh and ₹3.54/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 ₹3.80/kWh, ₹3.65/kWh and ₹2.57/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 ₹1.76/kWh, ₹2.92/kWh and ₹2.19/kWh respectively in IEX and ₹1.66/kWh, ₹3.03/kWh and ₹2.14/kWh respectively in PXIL (Table-5).

The price of electricity transacted through IEX and PXIL in the term-ahead market was ₹3.28/kWh and ₹2.92/kWh respectively (Table-6 and Table-7).

(iii) Price of electricity transacted through DSM: The average deviation settlement price was ₹1.70/kWh. The minimum and maximum deviation settlement prices were ₹0.00/kWh and ₹6.36/kWh respectively (Table-8).

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

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

Of the total bilateral transactions, top 5 regional entities sold 42.26% of the volume, and these were Himachal Pradesh, Chhattisgarh, Jammu & Kashmir, Lanco Kondapally Power Private Ltd and Jindal India Thermal Power Ltd.. Top 5 regional entities purchased 68.28% of the volume, and these were Haryana, Punjab, Telangana, Uttar Pradesh, and Delhi (Table-9 & 10).

Of the total power exchange transactions, top 5 regional entities sold 45.89% of the volume, and these were Madhya Pradesh, Jindal India Thermal Power Ltd., Jaypee Karcham Hydro Corporation Ltd., Himachal Pradesh and Delhi. Top 5 regional entities purchased 50.22% of the volume, and these were Gujarat, Rajasthan, Telangana, Haryana and West Bengal (Table-11 & 12).

¹ In case of a state, the entities which are “selling” also include generators connected to state grid and the entities which are “buying” also include open access consumers.

Of the total DSM transactions, top 5 regional entities underdrew 34.52% of the volume, and these were Haryana, Gujarat, Madhya Pradesh, Chhattisgarh and NTPC Stations (WR) (Table-13). Top 5 regional entities overdrew 27.12% of the volume, and these were NTPC Stations (NR), Uttar Pradesh, West Bengal, Karnataka and NTPC Stations (ER) (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, Madhya Pradesh, Jindal India Thermal Power Ltd., Jammu & Kashmir and Lanco Kondapally Power Pvt. Ltd. Top 5 electricity purchasing regional entities were Haryana, Punjab, Telangana, Uttar Pradesh and Delhi.

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

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

In the month of 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

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 3.31% and 0.51% of the unconstrained cleared volume respectively. In terms of time, congestion occurred was 50.64% in IEX and 4.81% in PXIL (Table-16).

V: Bilateral Contracts executed by Traders

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

(i) Duration of bilateral contracts: During September, 2016, a total of 155 bilateral contracts (excluding banking/swap contracts) have been executed by traders for the volume of 479.95 MUs. Figure-7 shows the percentage of contracts categorized according to the period of power supply. It can be observed from the figure that 86.5% of the bilateral contracts were executed for duration of up to one week, 13.5% of the contracts were executed for duration of more than a week and up to one month, and no contracts were executed for more than one month.

During the month, 162 banking/swapping bilateral contracts were also executed for the volume of 1331.63MUs.

(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 September, 2016 to October, 2016 based on bilateral contracts⁴ executed till September, 2016. Forward curves have been drawn for the contracts executed in August, 2016 and

⁴Excluding Banking/Swapping contracts

September, 2016 for the purpose of comparison. It is observed that there is no variation in the forward prices for the contracts executed in August, 2016 and September, 2016.

VI: Volume and Price of Renewable Energy Certificates (RECs)

The concept of Renewable Energy Certificates (RECs) seeks to address mismatch between availability of renewable energy and the requirement of the obligated entities to meet their renewable purchase obligation by purchasing green attributes of renewable energy remotely located in the form of RECs. The REC mechanism is a market based instrument, to promote renewable sources of energy and development of electricity market.

One REC is equivalent to 1 MWh electricity injected into the grid from renewable energy sources. The REC is exchanged only in the power exchanges approved by CERC within the band of a floor price and forbearance (ceiling) price as notified by CERC from time to time. The first REC trading session was held on power exchanges in March, 2011.

The details of REC transactions for the month of August, 2016 are shown in Table-20. The market clearing volume of solar RECs transacted on IEX and PXIL were 21937 and 18041 respectively and the market clearing price of these RECs was ₹3500/MWh on both the power exchanges. Market clearing volume of non-solar RECs transacted on IEX and PXIL were 136352 and 122539 respectively and the market clearing price of these RECs was ₹1500/MWh on both the power exchanges.

The gap between the volume of buy and sell bids of RECs placed through power exchanges shows that there was less demand for both solar and non-solar RECs. For Solar RECs, the ratio of buy bids to sell bids was 0.010 and 0.014 for IEX and PXIL respectively. For non-solar RECs, the ratio of buy bids to sell bids was 0.019 and 0.023 for IEX and PXIL respectively.

VII: Inferences:

- The percentage of short-term transactions of electricity to total electricity generation was 12.42%.
- Of the total short-term transactions of electricity, 54.30% was transacted through bilateral (through traders and term ahead contracts on power exchanges and directly by distribution companies), followed by 29.26% through power exchanges and 16.44% through DSM.
- Top 5 trading licensees had a share of 80.91% 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 0.1820, indicating moderate concentration of market power.
- The weighted average price of electricity transacted through trading licensees was ₹3.54/kWh. The weighted average prices of electricity transacted through IEX and PXIL were ₹2.19/kWh and ₹2.14/kWh respectively.
- The average price of electricity transacted through DSM was ₹1.70/kWh.
- Top 5 electricity selling regional entities were Himachal Pradesh, Madhya Pradesh, Jindal India Thermal Power Ltd., Jammu & Kashmir and Lanco Kondapally Power Pvt. Ltd. Top 5 electricity purchasing regional entities were Haryana, Punjab, Telangana, Uttar Pradesh and Delhi.
- The volume of electricity that could not be cleared in IEX and PXIL due to congestion was 3.31% and 0.51% of the unconstrained cleared volume respectively. In terms of time, congestion occurred was 50.64% in IEX and 4.81% in PXIL (Table-16).
- In August 2016, 86.5% of the bilateral contracts were executed for duration of up to one week, 13.5% of the contracts were executed for duration of more than a week and up to one month, and no contracts were executed for more than one month.

- There is no variation in the forward prices for the contracts executed in August, 2016 and September, 2016.
- The market clearing volume of solar RECs transacted on IEX and PXIL were 21937 and 18041 respectively and the market clearing price of these RECs was ₹3500/MWh on both the power exchanges. Market clearing volume of non-solar RECs transacted on IEX and PXIL were 136352 and 122539 respectively and the market clearing price of these RECs was ₹1500/MWh on both the power exchanges.

Table-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (ALL INDIA), AUGUST 2016				
Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	6426.50	54.30	6.75
	(i) Through Traders and PXs	4299.41	36.33	4.51
	(ii) Direct	2127.09	17.97	2.23
2	Through Power Exchanges	3462.81	29.26	3.63
	(i) IEX	3445.12	29.11	3.62
	(ii) PXIL	17.69	0.15	0.019
3	Through DSM	1945.12	16.44	2.04
	Total	11834.43	-	12.42
	Total Generation	95275.93	-	-

Source: NLDC

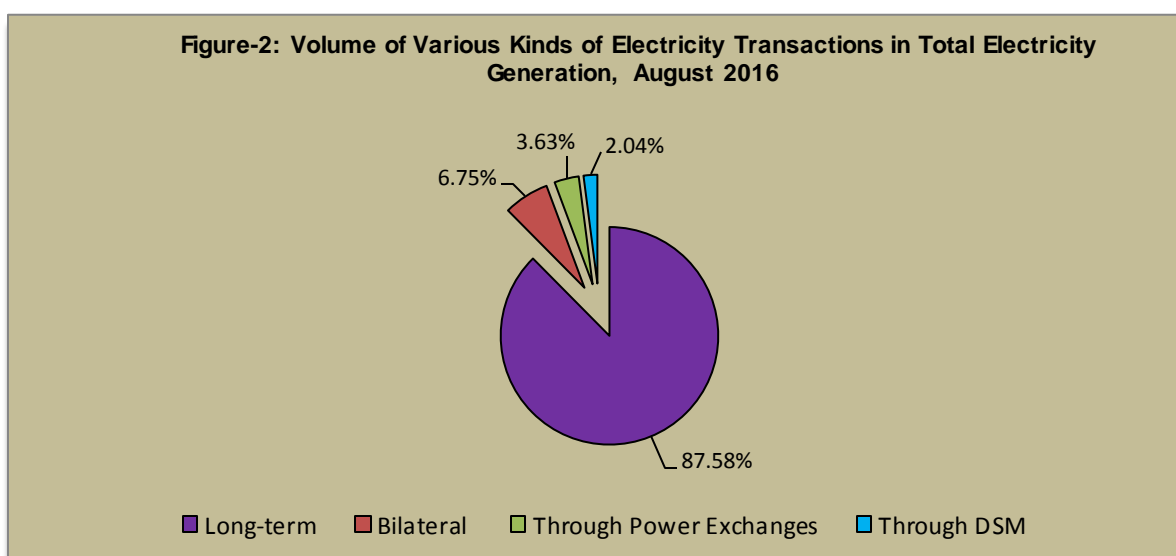
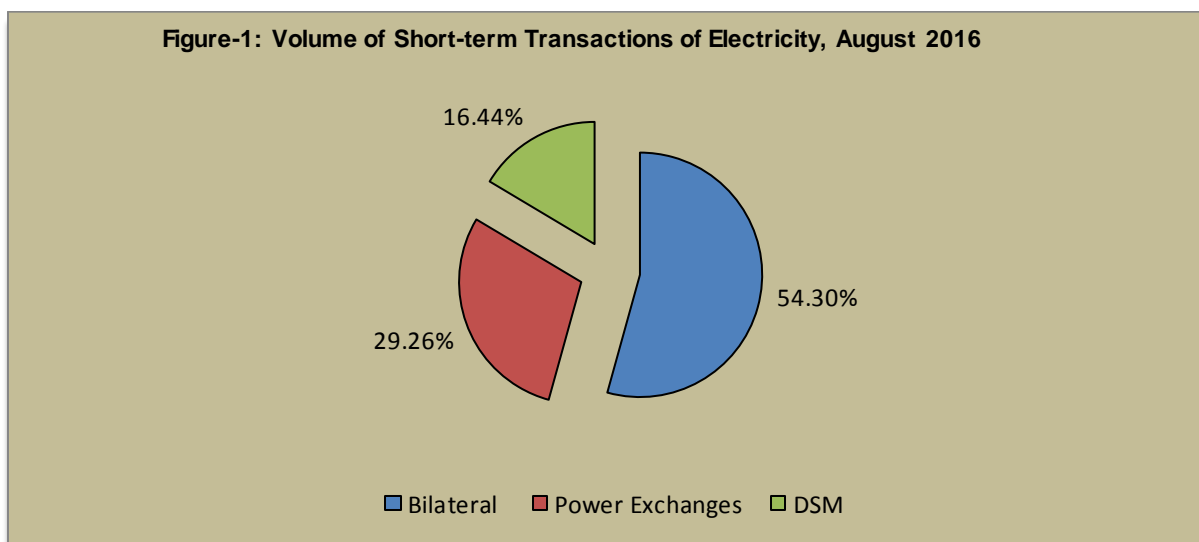


Figure-3: Volume of Short-term Transactions of Electricity, August 2016 (Day-wise)

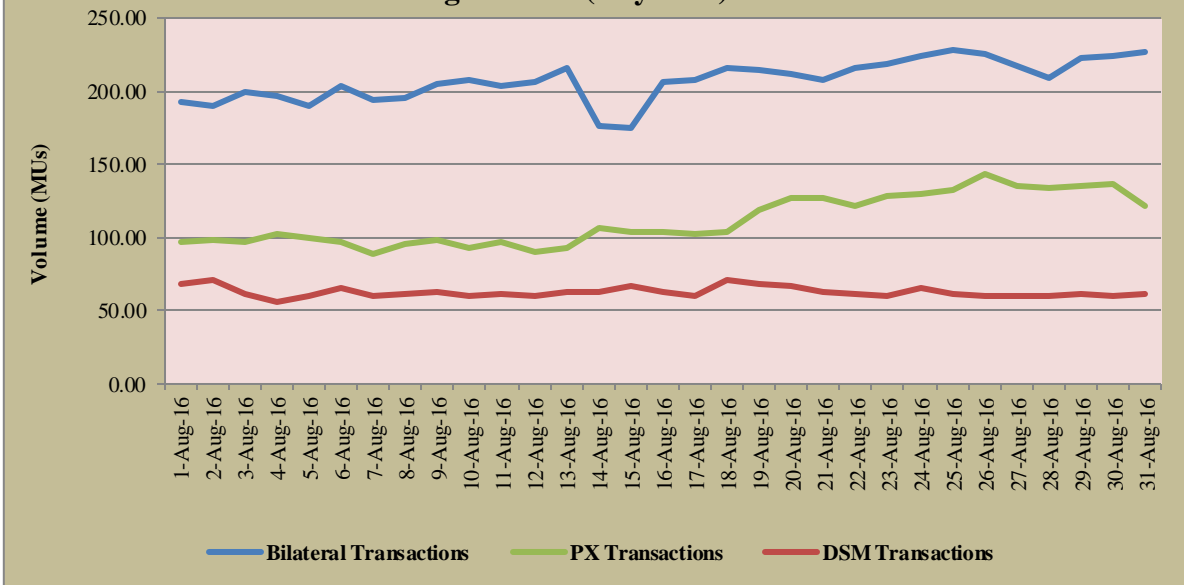


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, AUGUST 2016			
Sr.No	Name of the Trading Licensee	% Share in total Volume transacted by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd.	34.3751	0.1182
2	Mittal Processors Ltd.	16.0888	0.0259
3	Manikaran Power Ltd.	14.2338	0.0203
4	Tata Power Trading Company Ltd.	9.1755	0.0084
5	Arunachal Pradesh Power Corporation Ltd	7.0397	0.0050
6	NTPC Vidyut Vyapar Nigam Ltd.	4.7008	0.0022
7	Adani Enterprises Ltd.	2.9990	0.0009
8	JSW Power Trading Company Ltd	1.6335	0.0003
9	GMR Energy Trading Ltd.	1.5424	0.0002
10	Knowledge Infrastructure Systems Ltd	1.2368	0.0002
11	Jaiprakash Associates Ltd.	1.1578	0.0001
12	SN Power Markets Pvt. Ltd.	0.9853	0.0001
13	My Home Power Private Ltd.	0.8489	0.0001
14	RPG Power Trading Company Ltd.	0.8219	0.0001
15	National Energy Trading & Services Ltd.	0.7679	0.0001
16	Shree Cement Ltd.	0.6638	0.0001
17	Instinct Infra & Power Ltd.	0.5355	0.0000
18	Gita Power & Infrastructure Private Ltd.	0.5130	0.0000
19	Customized Energy Solutions India Ltd.	0.2518	0.0000
20	Essar Electric Power Development Corp. Ltd.	0.2095	0.0000
21	Phillip Commodities India Ltd.	0.1169	0.0000
22	Ambitious Power Trading Company Ltd.	0.1023	0.0000
TOTAL		100.00%	0.1820
Top 5 trading licensees		80.91%	
<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>			

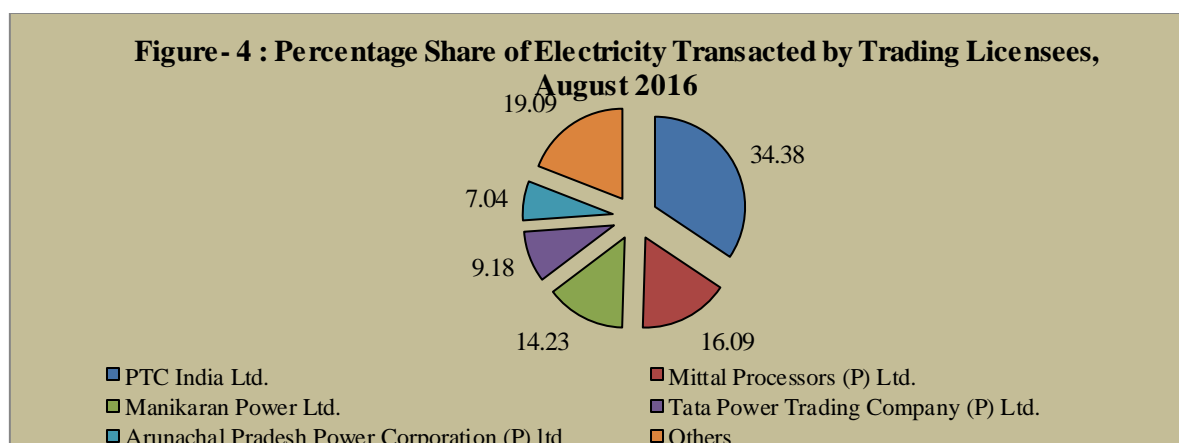


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, AUGUST 2016		
Sr.No	Item	Sale Price of Traders (₹/kWh)
1	Minimum	0.03
2	Maximum	5.59
3	Weighted Average	3.54

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), AUGUST 2016		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	3.80
2	PEAK	3.65
3	OFF PEAK	2.57

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, AUGUST 2016			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	1.76	1.66
2	Maximum	2.92	3.03
3	Weighted Average	2.19	2.14

Source: Information submitted by IEX and PXIL

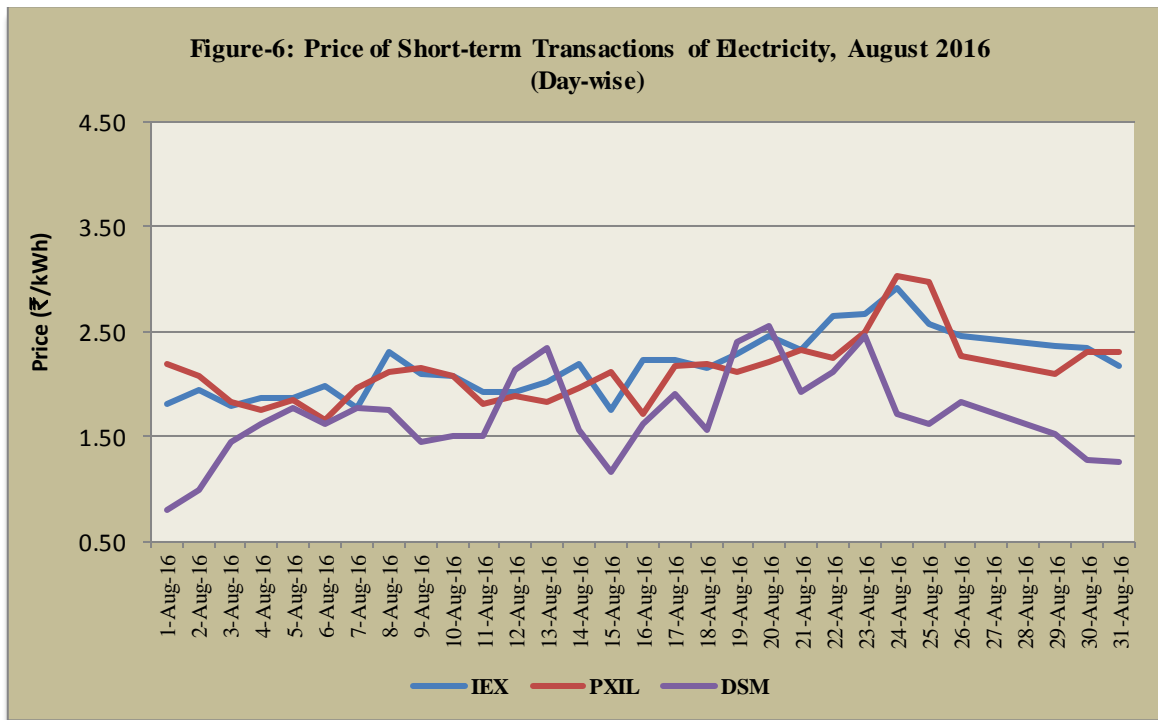
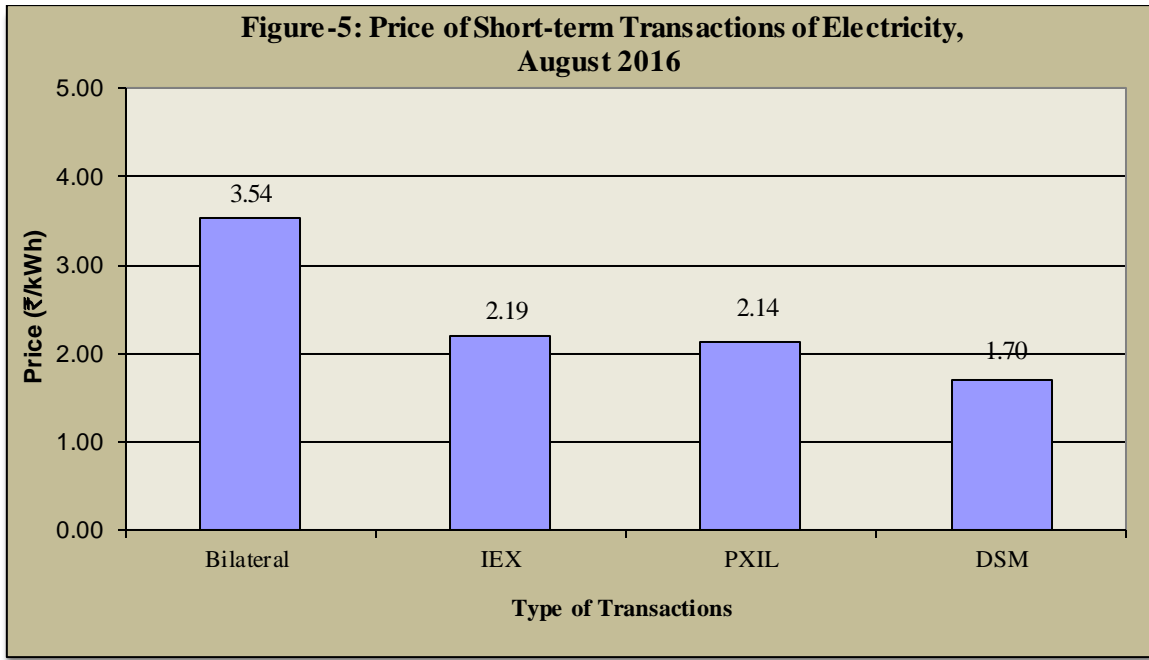
Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, AUGUST 2016			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	10.76	3.24
2	Day Ahead Contingency Contracts	10.02	2.99
3	Daily Contracts	14.40	3.50
	Total	35.18	3.28

Source: IEX

Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, AUGUST 2016			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	21.35	2.89
2	Daily Contracts	1.20	3.48
	Total	22.55	2.92

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH DSM, AUGUST 2016		
Sr.No	Item	Price in All India Grid (₹/kWh)
1	Minimum	0.00
2	Maximum	6.36
3	Average	1.70



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

Name of the Entity	Volume of Sale (MUs)	% of Volume
HIMACHAL PRADESH	973.02	14.81
CHHATTISGARH	524.88	7.99
J & K	485.19	7.38
LANKO KONDAPALLI (SR)	437.18	6.65
JITPL (ER)	356.89	5.43
MP	296.17	4.51
RAJASTHAN	249.58	3.80
GUJARAT	245.47	3.74
ODISHA	234.44	3.57
DB POWER (WR)	214.66	3.27
WEST BENGAL	188.03	2.86
STERLITE (ER)	185.88	2.83
JAYPEE NIGRIE (WR)	183.15	2.79
SHREE CEMENT (NR)	152.64	2.32
UTTARAKHAND	148.17	2.25
ANDHRA PRADESH	139.33	2.12
SASAN UMPP (WR)	127.23	1.94
JINDAL POWER (WR)	122.65	1.87
ADHUNIK POWER LTD (ER)	120.06	1.83
MAHARASHTRA	111.97	1.70
KARCHAM WANGTOO (NR)	103.82	1.58
DAGACHU (ER)	90.28	1.37
GMR KAMALANGA (ER)	84.46	1.29
COASTGEN (SR)	82.24	1.25
UTTAR PRADESH	76.54	1.16
SIMHAPURI (SR)	74.07	1.13
AD HYDRO (NR)	72.32	1.10
MEGHALAYA	63.14	0.96
DVC	40.17	0.61
EMCO (WR)	36.29	0.55
THERMAL POWERTECH (SR)	34.93	0.53
ASSAM	33.63	0.51
BALCO (WR)	33.30	0.51
ACBIL (WR)	30.57	0.47
DHARIWAL POWER (WR)	29.49	0.45
MANIPUR	28.45	0.43
MEENAKSHI (SR)	28.17	0.43
TAMIL NADU	20.40	0.31
DELHI	18.13	0.28
JINDAL STAGE-II (WR)	15.77	0.24
TELANGANA	13.46	0.20
SPECTRUM (WR)	13.41	0.20
KARNATAKA	11.98	0.18
LANKO_AMK (WR)	9.90	0.15
HARYANA	8.50	0.13
GMR CHATTISGARH (WR)	7.78	0.12
GOA	6.20	0.09
MARUTI COAL (WR)	4.28	0.07
PUNJAB	2.21	0.03
NAGALAND	0.86	0.01
TOTAL	6571.37	100.00
Volume Sold by top 5 Regional Entities	2777.17	42.26

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

Name of the Entity	Volume of Purchase (MUs)	% of Volume
HARYANA	1361.90	21.19
PUNJAB	1125.17	17.51
TELANGANA	735.51	11.44
UTTAR PRADESH	627.78	9.77
DELHI	537.90	8.37
CHHATTISGARH	448.64	6.98
MAHARASHTRA	368.42	5.73
BIHAR	212.99	3.31
ANDHRA PRADESH	202.45	3.15
BANGLADESH (ER)	183.77	2.86
ESSAR STEEL (WR)	129.41	2.01
ODISHA	118.81	1.85
JHARKHAND	118.31	1.84
WEST BENGAL	77.73	1.21
UTTARAKHAND	61.80	0.96
NEPAL(NVVN) (ER)	37.19	0.58
MP	25.45	0.40
GUJARAT	14.00	0.22
HIMACHAL PRADESH	11.52	0.18
CHANDIGARH	11.16	0.17
ASSAM	8.76	0.14
DAMAN AND DIU	4.26	0.07
MEGHALAYA	3.25	0.05
KERALA	0.30	0.00
TOTAL	6426.50	100.00
Volume Purchased by top 5 Regional Entities	4388.26	68.28

Table-11: VOLUME OF ELECTRICITY SOLD THROUGH POWER EXCHANGES, AUGUST 2016		
Name of the Entity	Volume of Sale (MUs)	% of Volume
MP	503.85	14.55
JITPL (ER)	318.57	9.20
KARCHAM WANGTOO (NR)	298.71	8.63
HIMACHAL PRADESH	281.81	8.14
DELHI	186.00	5.37
JINDAL POWER (WR)	167.61	4.84
GUJARAT	145.04	4.19
J & K	115.88	3.35
MARUTI COAL (WR)	87.04	2.51
MEENAKSHI (SR)	83.07	2.40
JAYPEE NIGRIE (WR)	81.78	2.36
COASTGEN (SR)	74.46	2.15
HARYANA	74.20	2.14
AD HYDRO (NR)	73.12	2.11
CHUZACHEN HEP (ER)	72.14	2.08
JORETHANG (ER)	66.69	1.93
DB POWER (WR)	60.04	1.73
SIMHAPURI (SR)	55.20	1.59
TAMIL NADU	51.56	1.49
SIKKIM	48.81	1.41
NEEPCO STATIONS (NER)	48.22	1.39
MAHARASHTRA	38.89	1.12
TRIPURA	37.28	1.08
TELANGANA	37.11	1.07
CHHATTISGARH	33.26	0.96
UTTARAKHAND	31.32	0.90
ODISHA	30.63	0.88
MIZORAM	27.09	0.78
NJPC (NR)	26.63	0.77
NLC (SR)	24.39	0.70
KARNATAKA	24.32	0.70
ACBIL (WR)	23.85	0.69
DHARIWAL POWER (WR)	22.71	0.66
ASSAM	20.00	0.58
RAJASTHAN	14.87	0.43
STERLITE (ER)	13.16	0.38
SPECTRUM (WR)	12.90	0.37
DVC	12.24	0.35
MANIPUR	12.10	0.35
ANDHRA PRADESH	11.96	0.35
THERMAL POWERTECH (SR)	11.80	0.34
MALANA (NR)	8.71	0.25

WEST BENGAL	8.58	0.25
NSPCL (WR)	8.24	0.24
NTPC STATIONS (NR)	7.70	0.22
EMCO (WR)	7.34	0.21
CHANDIGARH	7.06	0.20
ARUNACHAL PRADESH	6.76	0.20
LANCO BUDHIL (NR)	6.22	0.18
KERALA	6.19	0.18
NAGALAND	5.95	0.17
SHREE CEMENT (NR)	5.79	0.17
DCPP(DONGA MAHUA CAPTIVE POWER PLANT)	5.47	0.16
GOA	5.07	0.15
BALCO (WR)	3.00	0.09
NHPC STATIONS (NR)	2.52	0.07
JINDAL STAGE-II (WR)	2.23	0.06
GMR KAMALANGA (ER)	1.60	0.05
LANKO KONDAPALLI (SR)	1.08	0.03
ILF&S (SR)	0.87	0.03
ADHUNIK POWER LTD (ER)	0.83	0.02
MEGHALAYA	0.70	0.02
GMR CHATTISGARH (WR)	0.38	0.01
NTPC STATIONS (SR)	0.21	0.01
Total	3462.81	100.00
Volume sold by top 5 Regional Entities	1588.95	45.89

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

Name of the Entity	Volume of Purchase (MUs)	% of Volume
GUJARAT	439.79	12.70
RAJASTHAN	415.72	12.01
TELANGANA	369.71	10.68
HARYANA	264.78	7.65
WEST BENGAL	249.01	7.19
DADRA & NAGAR HAVELI	232.57	6.72
KARNATAKA	221.36	6.39
ESSAR STEEL (WR)	195.90	5.66
ANDHRA PRADESH	170.28	4.92
CHHATTISGARH	125.00	3.61
PUNJAB	115.17	3.33
BIHAR	96.09	2.77
UTTAR PRADESH	79.28	2.29
ASSAM	73.80	2.13
MP	69.97	2.02
MAHARASHTRA	54.83	1.58
UTTARAKHAND	46.37	1.34
DAMAN AND DIU	43.36	1.25
KERALA	37.56	1.08
ODISHA	36.06	1.04
HIMACHAL PRADESH	33.90	0.98
DELHI	30.26	0.87
TAMIL NADU	19.31	0.56
GOA	13.60	0.39
MEGHALAYA	10.88	0.31
DVC	8.59	0.25
PONDICHERY	4.28	0.12
J & K	2.51	0.07
TRIPURA	2.00	0.06
MANIPUR	0.72	0.02
NAGALAND	0.12	0.00
CHANDIGARH	0.04	0.00
TOTAL	3462.81	100.00
Volume purchased by top 5 Regional Entities	1739.01	50.22

Table-13: VOLUME OF ELECTRICITY UNDER DRAWAL (EXPORTED) THROUGH DSM, AUGUST 2016		
Name of the Entity	Volume of Under drawal (MUs)	% of Volume
HARYANA	132.10	7.45
GUJARAT	127.46	7.18
MP	119.76	6.75
CHHATTISGARH	116.68	6.58
NTPC STATIONS (WR)	116.33	6.56
TAMIL NADU	115.17	6.49
MAHARASHTRA	103.90	5.86
UTTAR PRADESH	69.29	3.91
BIHAR	54.95	3.10
PUNJAB	54.24	3.06
NTPC STATIONS (NR)	48.35	2.73
SASAN UMPP (WR)	45.52	2.57
RAJASTHAN	42.93	2.42
NHPC STATIONS (NR)	42.11	2.37
KARNATAKA	41.44	2.34
JHARKHAND	38.70	2.18
NLC (SR)	38.31	2.16
DELHI	34.98	1.97
TELANGANA	30.69	1.73
ANDHRA PRADESH	30.45	1.72
ODISHA	26.52	1.50
DVC	21.09	1.19
NEEPCO STATIONS (NER)	20.71	1.17
UTTARAKHAND	19.78	1.11
ESSAR STEEL (WR)	19.54	1.10
NTPC STATIONS (ER)	18.00	1.01
JITPL (ER)	16.60	0.94
NTPC STATIONS (SR)	13.04	0.74
HIMACHAL PRADESH	12.68	0.71
DADRA & NAGAR HAVELI	10.05	0.57
WEST BENGAL	9.79	0.55
CGPL(COASTAL GUJARAT POWER LTD) (WR)	9.27	0.52
JAYPEE NIGRIE (WR)	9.14	0.52
PONDICHERRY	8.32	0.47
JINDAL POWER (WR)	8.13	0.46
SIKKIM	7.90	0.45
NSPCL (WR)	7.47	0.42
KARCHAM WANGTOO (NR)	7.34	0.41
MAITHON POWER LTD (ER)	6.93	0.39
MEGHALAYA	6.92	0.39
THERMAL POWERTECH (SR)	5.84	0.33
AD HYDRO (NR)	5.35	0.30
EMCO (WR)	5.23	0.30
ASSAM	5.05	0.28

KSK MAHANADI (WR)	5.03	0.28
JORETHANG (ER)	4.92	0.28
MANIPUR	4.89	0.28
NAGALAND	4.81	0.27
CHANDIGARH	4.46	0.25
TEESTA HEP (ER)	3.98	0.22
MB POWER (WR)	3.94	0.22
GMR KAMALANGA (ER)	3.93	0.22
ACBIL (WR)	3.83	0.22
KERALA	3.54	0.20
NJPC (NR)	3.40	0.19
CHUZACHEN HEP (ER)	3.08	0.17
URI-2 (NR)	2.98	0.17
DCPP(DONGA MAHUA CAPTIVE POWER PLANT)	2.92	0.16
RGPPL(DABHOL) (WR)	2.81	0.16
GOA	2.80	0.16
DB POWER (WR)	2.53	0.14
DAMAN AND DIU	2.46	0.14
COASTGEN (SR)	2.43	0.14
RANGIT HEP (ER)	2.04	0.12
ADHUNIK POWER LTD (ER)	1.97	0.11
GOA	1.83	0.10
SIMHAPURI (SR)	1.77	0.10
SHREE CEMENT (NR)	1.72	0.10
TRIPURA	1.66	0.09
DHARIWAL POWER (WR)	1.46	0.08
LANCO BUDHIL (NR)	1.17	0.07
ARUNACHAL PRADESH	1.04	0.06
ILF&S (SR)	0.94	0.05
MEENAKSHI (SR)	0.94	0.05
STERLITE (ER)	0.89	0.05
BALCO (WR)	0.84	0.05
LANKO_AMK (WR)	0.65	0.04
LANKO KONDAPALLI (SR)	0.51	0.03
MIZORAM	0.37	0.02
MALANA (NR)	0.37	0.02
GMR CHATTISGARH (WR)	0.34	0.02
NEPAL(NVVN) (ER)	0.34	0.02
ESSAR POWER (WR)	0.22	0.01
DAGACHU (ER)	0.16	0.01
VANDANA VIDYUT (WR)	0.04	0.00
Total	1774.05	100.00
Volume Exported by top 5 Regional Entities	612.33	34.52

Table-14: VOLUME OF ELECTRICITY OVER DRAWAL (IMPORTED) THROUGH DSM, AUGUST 2016		
Name of the Entity	Volume of Over drawal (MUs)	% of Volume
NTPC STATIONS (NR)	130.73	6.76
UTTAR PRADESH	107.94	5.58
WEST BENGAL	102.93	5.32
KARNATAKA	101.29	5.23
NTPC STATIONS (ER)	81.91	4.23
ASSAM	74.71	3.86
NTPC STATIONS (WR)	67.85	3.51
RAJASTHAN	65.44	3.38
ANDHRA PRADESH	64.68	3.34
BIHAR	61.66	3.19
STERLITE (ER)	55.69	2.88
MAHARASHTRA	55.67	2.88
TAMIL NADU	49.41	2.55
PUNJAB	48.95	2.53
TELANGANA	43.41	2.24
BALCO (WR)	42.08	2.17
NTPC STATIONS (SR)	40.76	2.11
DELHI	39.88	2.06
HIMACHAL PRADESH	39.83	2.06
DVC	38.28	1.98
UTTARAKHAND	37.76	1.95
KERALA	33.25	1.72
CHHATTISGARH	32.48	1.68
ESSAR STEEL (WR)	31.83	1.64
ODISHA	30.75	1.59
TRIPURA	26.96	1.39
DAGACHU (ER)	25.87	1.34
GUJARAT	24.86	1.28
KARCHAM WANGTOO (NR)	23.85	1.23
GOA	22.81	1.18
CGPL(COASTAL GUJARAT POWER LTD)	19.54	1.01
JHARKHAND	19.13	0.99
HARYANA	18.82	0.97
EMCO (WR)	17.74	0.92
MEGHALAYA	15.85	0.82
MP	15.56	0.80
NLC (SR)	12.17	0.63
LANKO KONDAPALLI (SR)	12.16	0.63
ARUNACHAL PRADESH	10.35	0.54
ESSAR POWER (WR)	9.74	0.50
CHANDIGARH	9.44	0.49
DAMAN AND DIU	8.66	0.45
NHPC STATIONS (NR)	8.60	0.44
ACBIL (WR)	8.45	0.44

DCPP(DONGA MAHUA CAPTIVE POWER PLANT)	7.83	0.40
NJPC (NR)	7.32	0.38
SHREE CEMENT (NR)	6.72	0.35
DB POWER (WR)	6.69	0.35
MIZORAM	6.44	0.33
GMR KAMALANGA (ER)	6.04	0.31
JITPL (ER)	5.84	0.30
ILF&S (SR)	5.75	0.30
NEPAL(NVVN) (ER)	4.78	0.25
MANIPUR	4.64	0.24
MAITHON POWER LTD (ER)	4.51	0.23
SASAN UMPP (WR)	4.17	0.22
JINDAL POWER (WR)	4.10	0.21
JINDAL STAGE-II (WR)	4.10	0.21
GOA	4.03	0.21
NEEPCO STATIONS (NER)	4.01	0.21
NSPCL (WR)	3.78	0.20
NAGALAND	3.62	0.19
AD HYDRO (NR)	3.47	0.18
JORETHANG (ER)	3.34	0.17
COASTGEN (SR)	3.31	0.17
SIKKIM	3.23	0.17
GMR CHATTISGARH (WR)	3.19	0.16
MB POWER (WR)	3.17	0.16
RGPPL(DABHOL) (WR)	3.03	0.16
JAYPEE NIGRIE (WR)	3.01	0.16
KSK MAHANADI (WR)	2.92	0.15
LANKO_AMK (WR)	2.68	0.14
PONDICHERRY	2.55	0.13
DADRA & NAGAR HAVELI	2.21	0.11
JHABUA POWER_MP (WR)	2.18	0.11
THERMAL POWERTECH (SR)	2.16	0.11
ADHUNIK POWER LTD (ER)	2.07	0.11
KORBA WEST POWER (WR)	1.82	0.09
SPECTRUM (WR)	1.34	0.07
CHUZACHEN HEP (ER)	1.09	0.06
DGEN MEGA POWER (WR)	1.05	0.05
MALANA (NR)	0.92	0.05
SIMHAPURI (SR)	0.66	0.03
DHARIWAL POWER (WR)	0.53	0.03
LANCO BUDHIL (NR)	0.47	0.02
MEENAKSHI (SR)	0.19	0.01
TEESTA HEP (ER)	0.18	0.01
ADANI HVDC (NR)	0.10	0.01
RANGIT HEP (ER)	0.07	0.00
TOTAL	1935.03	100.00
Volume Imported by top 5 Regional Entities	524.80	27.12

Table-15: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY-WISE), AUGUST 2016		
Sr.No.	Name of the Entity	Total volume of net short-term transactions of electricity*
1	HARYANA	1430.70
2	PUNJAB	1232.84
3	TELANGANA	1067.36
4	UTTAR PRADESH	669.17
5	DELHI	368.93
6	ESSAR STEEL (WR)	337.60
7	BIHAR	315.78
8	ANDHRA PRADESH	255.68
9	KARNATAKA	244.91
10	DADRA & NAGAR HAVELI	224.72
11	MAHARASHTRA	224.16
12	WEST BENGAL	223.27
13	BANGLADESH (ER)	183.77
14	RAJASTHAN	173.77
15	JHARKHAND	98.74
16	ASSAM	98.59
17	NTPC STATIONS (NR)	74.67
18	NTPC STATIONS (ER)	63.91
19	KERALA	61.38
20	DAMAN AND DIU	53.82
21	NEPAL(NVVN) (ER)	41.64
22	NTPC STATIONS (SR)	27.50
23	GOA	22.34
24	CGPL(COASTAL GUJARAT POWER LTD) (WR)	10.28
25	ESSAR POWER (WR)	9.53
26	CHANDIGARH	9.12
27	BALCO (WR)	4.94
28	ILF&S (SR)	3.94
29	ARUNACHAL PRADESH	2.55
30	GOA	2.20
31	JHABUA POWER_MP (WR)	2.18
32	KORBA WEST POWER (WR)	1.82
33	DGEN MEGA POWER (WR)	1.05
34	RGPPPL(DABHOL) (WR)	0.22
35	ADANI HVDC (NR)	0.10
36	VANDANA VIDYUT (WR)	-0.04
37	DCPP(DONGA MAHUA CAPTIVE POWER PLANT)	-0.57
38	MB POWER (WR)	-0.77
39	PONDICHERRY	-1.49
40	RANGIT HEP (ER)	-1.98
41	KSK MAHANADI (WR)	-2.11
42	MAITHON POWER LTD (ER)	-2.42
43	URI-2 (NR)	-2.98
44	TEESTA HEP (ER)	-3.79
45	GMR CHATTISGARH (WR)	-5.31

46	LANCO BUDHIL (NR)	-6.92
47	LANKO_AMK (WR)	-7.87
48	NAGALAND	-7.88
49	MALANA (NR)	-8.16
50	TRIPURA	-9.98
51	NSPCL (WR)	-11.94
52	JINDAL STAGE-II (WR)	-13.90
53	MIZORAM	-21.02
54	NJPC (NR)	-22.71
55	SPECTRUM (WR)	-24.96
56	DVC	-26.63
57	EMCO (WR)	-31.12
58	NHPC STATIONS (NR)	-36.03
59	GUJARAT	-39.32
60	MANIPUR	-40.09
61	MEGHALAYA	-40.79
62	NTPC STATIONS (WR)	-48.49
63	ACBIL (WR)	-49.80
64	THERMAL POWERTECH (SR)	-50.40
65	DHARIWAL POWER (WR)	-53.13
66	UTTARAKHAND	-53.33
67	SIKKIM	-53.48
68	DAGACHU (ER)	-64.56
69	NEEPCO STATIONS (NER)	-64.93
70	JORETHANG (ER)	-68.27
71	CHHATTISGARH	-68.69
72	CHUZACHEN HEP (ER)	-74.13
73	GMR KAMALANGA (ER)	-83.95
74	MARUTI COAL (WR)	-91.32
75	ODISHA	-105.96
76	MEENAKSHI (SR)	-111.98
77	TAMIL NADU	-118.41
78	ADHUNIK POWER LTD (ER)	-120.78
79	SIMHAPURI (SR)	-130.38
80	STERLITE (ER)	-144.23
81	AD HYDRO (NR)	-147.32
82	SHREE CEMENT (NR)	-153.43
83	COASTGEN (SR)	-155.82
84	DB POWER (WR)	-270.54
85	JAYPEE NIGRIE (WR)	-271.07
86	JINDAL POWER (WR)	-294.30
87	KARCHAM WANGTOO (NR)	-386.03
88	LANKO KONDAPALLI (SR)	-426.61
89	J & K	-598.56
90	JITPL (ER)	-686.23
91	MP	-808.81
92	HIMACHAL PRADESH	-1182.26
* 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 2016			
	Details of Congestion	IEX	PXIL
A	Unconstrained Cleared Volume* (MUs)	3563.13	17.78
B	Actual Cleared Volume and hence scheduled (MUs)	3445.12	17.69
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	118.01	0.09
D	Volume of electricity that could not be cleared as % to Unconstrained Cleared Volume	3.31%	0.51%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	50.64%	4.81%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	13.47%	0.00%
	6.00 - 12.00 hours	37.69%	20.28%
	12.00 - 18.00 hours	33.18%	41.96%
	18.00 - 24.00 hours	15.66%	37.76%
<i>* This power would have been scheduled had there been no congestion.</i>			
Source: IEX & PXIL & NLDC			

Table-17: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA (DAY-WISE) (MUs), AUGUST 2016

Date	Bilateral		Power Exchange (Area Clearing Volume# of Day Ahead Market)		Deviation Settlement (Over Drawl+Under Generation)	Total Electricity Generation (MU) as given at CEA Website*
	Through Traders & PXs**	Direct	IEX	PXIL		
1-Aug-16	134.96	57.66	97.29	0.33	68.71	2876.98
2-Aug-16	131.29	58.42	97.95	0.38	71.67	2875.06
3-Aug-16	135.19	63.68	96.51	0.23	61.68	2928.25
4-Aug-16	134.17	62.71	101.75	0.23	56.46	3007.92
5-Aug-16	124.42	65.12	99.61	0.54	60.36	3066.36
6-Aug-16	134.94	69.09	96.70	0.54	65.25	2991.94
7-Aug-16	128.83	65.06	88.39	0.52	60.20	2908.58
8-Aug-16	130.62	64.71	94.55	0.52	61.11	3047.23
9-Aug-16	137.77	66.63	97.50	0.55	62.55	3062.25
10-Aug-16	137.64	69.71	92.40	0.55	60.49	3030.58
11-Aug-16	132.45	71.31	95.38	1.27	61.89	3016.98
12-Aug-16	132.00	74.44	89.52	0.56	60.87	3041.41
13-Aug-16	147.37	68.34	92.97	0.54	62.39	3039.73
14-Aug-16	118.61	57.99	106.74	0.53	62.46	2941.77
15-Aug-16	115.86	59.20	103.87	0.47	67.67	2832.87
16-Aug-16	141.35	64.38	102.85	0.49	62.67	2991.00
17-Aug-16	144.31	63.93	102.18	0.54	60.10	3066.53
18-Aug-16	150.14	65.76	103.67	0.58	70.54	3051.23
19-Aug-16	149.25	65.68	118.49	0.35	68.05	3160.00
20-Aug-16	151.24	60.06	127.20	0.54	66.40	3207.00
21-Aug-16	147.12	61.16	126.75	0.51	62.40	3160.43
22-Aug-16	143.60	72.77	121.17	0.61	61.77	3239.18
23-Aug-16	145.38	73.58	127.61	0.64	59.89	3274.21
24-Aug-16	145.02	79.07	129.00	1.20	65.31	3232.46
25-Aug-16	146.18	81.90	131.57	1.20	61.83	3206.18
26-Aug-16	144.54	80.27	143.43	0.47	59.70	3212.73
27-Aug-16	140.05	76.81	134.50	0.61	60.14	3204.00
28-Aug-16	128.91	80.12	133.88	0.15	59.64	3089.63
29-Aug-16	147.59	75.14	134.83	0.68	61.24	3187.30
30-Aug-16	147.76	76.55	135.94	0.68	60.09	3197.37
31-Aug-16	150.86	75.85	120.96	0.68	61.60	3128.77
Total	4299.41	2127.09	3445.12	17.69	1945.12	95275.93

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 2016									
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-16	1.00	4.90	1.81	2.00	2.35	2.19	0.00	2.41	0.81
2-Aug-16	1.10	5.05	1.95	1.70	2.45	2.09	0.00	2.41	1.00
3-Aug-16	1.00	3.11	1.80	1.84	1.84	1.84	0.00	3.45	1.46
4-Aug-16	1.10	3.30	1.87	1.75	1.75	1.75	0.00	3.45	1.62
5-Aug-16	1.00	3.35	1.86	1.80	2.08	1.86	0.00	3.45	1.78
6-Aug-16	1.56	3.30	1.99	1.65	2.02	1.66	0.00	3.45	1.62
7-Aug-16	0.70	3.45	1.78	1.95	2.10	1.96	0.00	3.45	1.78
8-Aug-16	1.75	4.00	2.30	2.05	2.30	2.11	0.00	4.91	1.76
9-Aug-16	1.56	3.50	2.09	2.10	4.00	2.15	0.00	3.45	1.44
10-Aug-16	1.00	4.40	2.08	2.03	4.00	2.09	0.00	3.45	1.50
11-Aug-16	1.64	2.70	1.93	1.82	2.25	1.82	0.00	3.24	1.51
12-Aug-16	1.30	3.30	1.92	1.89	1.89	1.89	0.00	6.36	2.14
13-Aug-16	1.68	3.45	2.03	1.84	1.84	1.84	0.00	6.16	2.35
14-Aug-16	1.49	3.20	2.19	1.97	1.97	1.97	0.00	3.45	1.57
15-Aug-16	0.90	3.20	1.76	2.11	2.11	2.11	0.00	3.24	1.16
16-Aug-16	1.30	3.70	2.24	1.70	2.35	1.71	0.00	5.11	1.62
17-Aug-16	1.77	3.55	2.23	2.18	2.59	2.18	0.00	3.45	1.91
18-Aug-16	1.75	3.20	2.15	2.19	2.19	2.19	0.00	5.11	1.57
19-Aug-16	1.69	3.75	2.28	2.11	2.11	2.11	0.00	5.74	2.40
20-Aug-16	1.82	4.19	2.46	2.21	2.21	2.21	0.00	5.95	2.56
21-Aug-16	1.80	4.10	2.33	2.33	2.33	2.33	0.00	5.95	1.93
22-Aug-16	1.71	4.60	2.65	2.22	3.00	2.26	0.00	5.11	2.13
23-Aug-16	1.69	4.70	2.66	2.45	3.40	2.50	0.00	5.32	2.47
24-Aug-16	1.90	5.20	2.92	1.10	3.10	3.03	0.00	5.95	1.72
25-Aug-16	1.47	4.90	2.58	1.53	3.10	2.97	0.00	3.24	1.63
26-Aug-16	1.68	5.10	2.47	2.28	2.28	2.28	0.00	5.95	1.82
27-Aug-16	1.79	4.40	2.44	2.24	2.24	2.24	0.00	3.45	1.69
28-Aug-16	1.74	3.25	2.22	2.35	2.35	2.35	0.00	3.24	1.65
29-Aug-16	1.82	3.79	2.36	2.10	2.10	2.10	0.00	3.24	1.53
30-Aug-16	1.82	3.50	2.34	2.30	2.30	2.30	0.00	3.24	1.29
31-Aug-16	1.83	3.15	2.18	2.30	2.30	2.30	0.00	3.45	1.27
	1.76#	2.925#	2.19	1.66#	3.034#	2.14	0.00#	6.36#	1.70

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 DSMRate +40% additional DSM charge.

Maximum/Minimum in the month

**Table-19:
VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY*-WISE) (MUs),
AUGUST 2016**

Name of the State	Through Bilateral			Through Power Exchange			Through UI with Regional Grid			Total Net
	Sale	Purchase	Net	Sale	Purchase	Net	Import	Export	Net	
PUNJAB	2.21	1125.17	1122.96	0.00	115.17	115.17	48.95	54.24	-5.30	1232.84
HARYANA	8.50	1361.90	1353.40	74.20	264.78	190.58	18.82	132.10	-113.28	1430.70
RAJASTHAN	249.58	0.00	-249.58	14.87	415.72	400.85	65.44	42.93	22.50	173.77
DELHI	18.13	537.90	519.76	186.00	30.26	-155.74	39.88	34.98	4.91	368.93
UTTAR PRADESH	76.54	627.78	551.24	0.00	79.28	79.28	107.94	69.29	38.65	669.17
UTTARAKHAND	148.17	61.80	-86.36	31.32	46.37	15.05	37.76	19.78	17.99	-53.33
HIMACHAL PRADESH	973.02	11.52	-961.49	281.81	33.90	-247.92	39.83	12.68	27.15	-1182.26
J & K	485.19	0.00	-485.19	115.88	2.51	-113.37	0.00	0.00	0.00	-598.56
CHANDIGARH	0.00	11.16	11.16	7.06	0.04	-7.03	9.44	4.46	4.98	9.12
MP	296.17	25.45	-270.72	503.85	69.97	-433.88	15.56	119.76	-104.20	-808.81
MAHARASHTRA	111.97	368.42	256.45	38.89	54.83	15.94	55.67	103.90	-48.23	224.16
GUJARAT	245.47	14.00	-231.47	145.04	439.79	294.75	24.86	127.46	-102.60	-39.32
CHHATTISGARH	524.88	448.64	-76.24	33.26	125.00	91.74	32.48	116.68	-84.19	-68.69
GOA	6.20	0.00	-6.20	5.07	13.60	8.53	26.85	4.64	22.21	24.54
DAMAN AND DIU	0.00	4.26	4.26	0.00	43.36	43.36	8.66	2.46	6.20	53.82
DADRA & NAGAR HAVELI	0.00	0.00	0.00	0.00	232.57	232.57	2.21	10.05	-7.85	224.72
ANDHRA PRADESH	139.33	202.45	63.12	11.96	170.28	158.32	64.68	30.45	34.23	255.68
KARNATAKA	11.98	0.00	-11.98	24.32	221.36	197.04	101.29	41.44	59.85	244.91
KERALA	0.00	0.30	0.30	6.19	37.56	31.38	33.25	3.54	29.71	61.38
TAMIL NADU	20.40	0.00	-20.40	51.56	19.31	-32.25	49.41	115.17	-65.76	-118.41
PONDICHERY	0.00	0.00	0.00	0.00	4.28	4.28	2.55	8.32	-5.77	-1.49
TELANGANA	13.46	735.51	722.05	37.11	369.71	332.59	43.41	30.69	12.72	1067.36
WEST BENGAL	188.03	77.73	-110.30	8.58	249.01	240.42	102.93	9.79	93.14	223.27
ODISHA	234.44	118.81	-115.63	30.63	36.06	5.43	30.75	26.52	4.23	-105.96
BIHAR	0.00	212.99	212.99	0.00	96.09	96.09	61.66	54.95	6.71	315.78
JHARKHAND	0.00	118.31	118.31	0.00	0.00	0.00	19.13	38.70	-19.56	98.74
SIKKIM	0.00	0.00	0.00	48.81	0.00	-48.81	3.23	7.90	-4.67	-53.48
DVC	40.17	0.00	-40.17	12.24	8.59	-3.64	38.28	21.09	17.19	-26.63
ARUNACHAL PRADESH	0.00	0.00	0.00	6.76	0.00	-6.76	10.35	1.04	9.31	2.55
ASSAM	33.63	8.76	-24.87	20.00	73.80	53.80	74.71	5.05	69.66	98.59

MANIPUR	28.45	0.00	-28.45	12.10	0.72	-11.38	4.64	4.89	-0.25	-40.09
MEGHALAYA	63.14	3.25	-59.90	0.70	10.88	10.18	15.85	6.92	8.93	-40.79
MIZORAM	0.00	0.00	0.00	27.09	0.00	-27.09	6.44	0.37	6.07	-21.02
NAGALAND	0.86	0.00	-0.86	5.95	0.12	-5.83	3.62	4.81	-1.19	-7.88
TRIPURA	0.00	0.00	0.00	37.28	2.00	-35.28	26.96	1.66	25.30	-9.98
NTPC STATIONS (NR)	0.00	0.00	0.00	7.70	0.00	-7.70	130.73	48.35	82.38	74.67
NHPC STATIONS (NR)	0.00	0.00	0.00	2.52	0.00	-2.52	8.60	42.11	-33.51	-36.03
NJPC (NR)	0.00	0.00	0.00	26.63	0.00	-26.63	7.32	3.40	3.92	-22.71
AD HYDRO (NR)	72.32	0.00	-72.32	73.12	0.00	-73.12	3.47	5.35	-1.88	-147.32
KARCHAM WANGTOO	103.82	0.00	-103.82	298.71	0.00	-298.71	23.85	7.34	16.51	-386.03
SHREE CEMENT	152.64	0.00	-152.64	5.79	0.00	-5.79	6.72	1.72	5.00	-153.43
LANCO BUDHIL (NR)	0.00	0.00	0.00	6.22	0.00	-6.22	0.47	1.17	-0.71	-6.92
MALANA (NR)	0.00	0.00	0.00	8.71	0.00	-8.71	0.92	0.37	0.55	-8.16
URI-2 (NR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.98	-2.98	-2.98
NTPC STATIONS (WR)	0.00	0.00	0.00	0.00	0.00	0.00	67.85	116.33	-48.49	-48.49
JINDAL POWER (WR)	122.65	0.00	-122.65	167.61	0.00	-167.61	4.10	8.13	-4.04	-294.30
LANKO_AMK	9.90	0.00	-9.90	0.00	0.00	0.00	2.68	0.65	2.03	-7.87
NSPCL (WR)	0.00	0.00	0.00	8.24	0.00	-8.24	3.78	7.47	-3.70	-11.94
ACBIL	30.57	0.00	-30.57	23.85	0.00	-23.85	8.45	3.83	4.62	-49.80
BALCO	33.30	0.00	-33.30	3.00	0.00	-3.00	42.08	0.84	41.24	4.94
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	19.54	9.27	10.28	10.28
DCPP	0.00	0.00	0.00	5.47	0.00	-5.47	7.83	2.92	4.91	-0.57
EMCO	36.29	0.00	-36.29	7.34	0.00	-7.34	17.74	5.23	12.51	-31.12
ESSAR STEEL (WR)	0.00	129.41	129.41	0.00	195.90	195.90	31.83	19.54	12.29	337.60
ESSAR POWER (WR)	0.00	0.00	0.00	0.00	0.00	0.00	9.74	0.22	9.53	9.53
JINDAL STAGE-II (WR)	15.77	0.00	-15.77	2.23	0.00	-2.23	4.10	0.00	4.10	-13.90
DB POWER (WR)	214.66	0.00	-214.66	60.04	0.00	-60.04	6.69	2.53	4.16	-270.54
DHARIWAL POWER	29.49	0.00	-29.49	22.71	0.00	-22.71	0.53	1.46	-0.93	-53.13
JAYPEE NIGRIE	183.15	0.00	-183.15	81.78	0.00	-81.78	3.01	9.14	-6.13	-271.07
GMR CHATTISGARH	7.78	0.00	-7.78	0.38	0.00	-0.38	3.19	0.34	2.85	-5.31
MARUTI COAL (WR)	4.28	0.00	-4.28	87.04	0.00	-87.04	0.00	0.00	0.00	-91.32
SPECTRUM (WR)	13.41	0.00	-13.41	12.90	0.00	-12.90	1.34	0.00	1.34	-24.96
SASAN UMPP (WR)	127.23	0.00	127.23	0.00	0.00	0.00	4.17	45.52	-41.35	85.88
NTPC STATIONS (SR)	0.00	0.00	0.00	0.21	0.00	-0.21	40.76	13.04	27.71	27.50
LANKO KONDAPALLI	437.18	0.00	-437.18	1.08	0.00	-1.08	12.16	0.51	11.65	-426.61

SIMHAPURI (SR)	74.07	0.00	-74.07	55.20	0.00	-55.20	0.66	1.77	-1.10	-130.38
MEENAKSHI (SR)	28.17	0.00	-28.17	83.07	0.00	-83.07	0.19	0.94	-0.74	-111.98
COASTGEN (SR)	82.24	0.00	-82.24	74.46	0.00	-74.46	3.31	2.43	0.88	-155.82
THERMAL POWERTECH	34.93	0.00	-34.93	11.80	0.00	-11.80	2.16	5.84	-3.67	-50.40
ILF&S (SR)	0.00	0.00	0.00	0.87	0.00	-0.87	5.75	0.94	4.81	3.94
NLC (SR)	0.00	0.00	0.00	24.39	0.00	24.39	12.17	38.31	-26.14	-1.75
NTPC STATIONS (ER)	0.00	0.00	0.00	0.00	0.00	0.00	81.91	18.00	63.91	63.91
STERLITE (ER)	185.88	0.00	-185.88	13.16	0.00	-13.16	55.69	0.89	54.80	-144.23
MAITHON POWER LTD	0.00	0.00	0.00	0.00	0.00	0.00	4.51	6.93	-2.42	-2.42
ADHUNIK POWER LTD	120.06	0.00	-120.06	0.83	0.00	-0.83	2.07	1.97	0.10	-120.78
CHUZACHEN HEP	0.00	0.00	0.00	72.14	0.00	-72.14	1.09	3.08	-2.00	-74.13
RANGIT HEP (ER)	0.00	0.00	0.00	0.00	0.00	0.00	0.07	2.04	-1.98	-1.98
GMR KAMALANGA	84.46	0.00	-84.46	1.60	0.00	-1.60	6.04	3.93	2.11	-83.95
JITPL (ER)	356.89	0.00	-356.89	318.57	0.00	-318.57	5.84	16.60	-10.76	-686.23
TEESTA HEP (ER)	0.00	0.00	0.00	0.00	0.00	0.00	0.18	3.98	-3.79	-3.79
DAGACHU (ER)	90.28	0.00	-90.28	0.00	0.00	0.00	25.87	0.16	25.72	-64.56
JORETHANG (ER)	0.00	0.00	0.00	66.69	0.00	-66.69	3.34	4.92	-1.58	-68.27
NEPAL(NWN) (ER)	0.00	37.19	37.19	0.00	0.00	0.00	4.78	0.34	4.44	41.64
BANGLADESH (ER)	0.00	183.77	183.77	0.00	0.00	0.00	0.00	0.00	0.00	183.77
NEEPCO STATIONS	0.00	0.00	0.00	48.22	0.00	-48.22	4.01	20.71	-16.70	-64.93
TOTAL	6571.37	6426.50	109.59	3462.81	3462.81	48.77	1920.76	1762.23	158.53	316.89

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, 2016

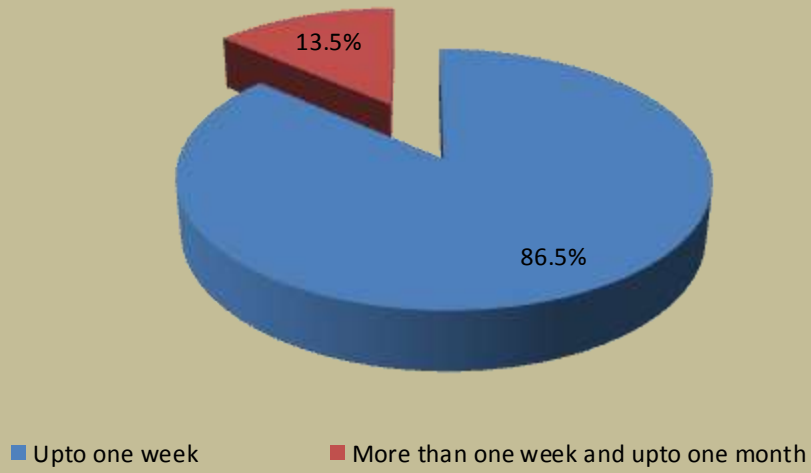


Figure-8: Forward Curve based on Prices of Bilateral Contracts

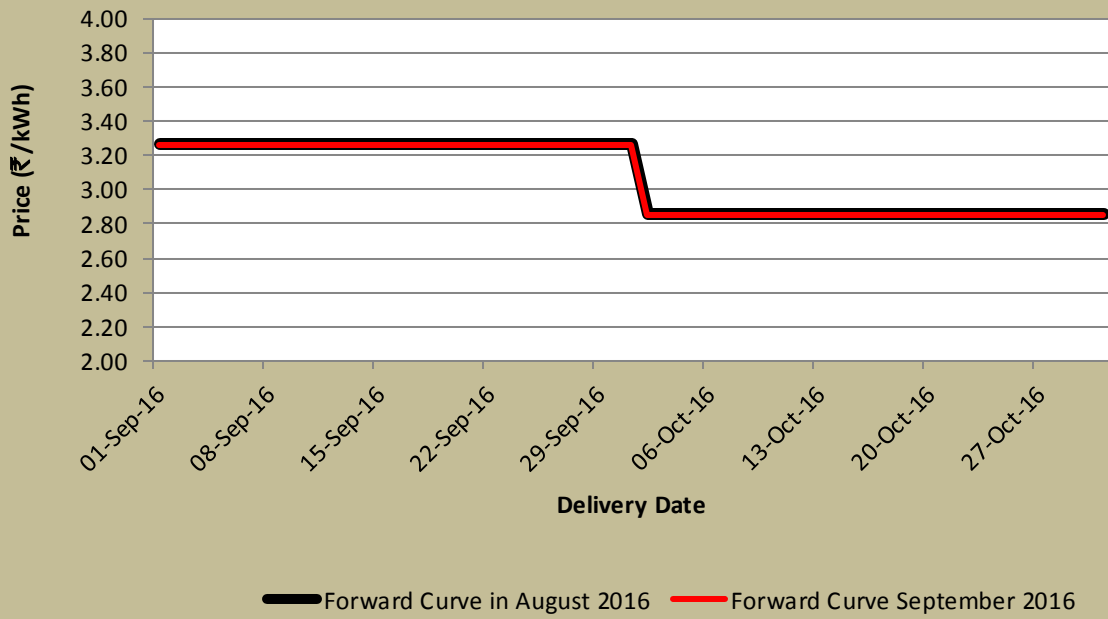


Table-20 : VOLUME AND PRICE OF RENEWABLE ENERGY CERTIFICATES (RECs) TRANSACTED THROUGH POWER EXCHANGES, AUGUST 2016					
Sr.No.	Details of REC Transactions	IEX		PXIL	
		Solar	Non-Solar	Solar	Non Solar
A	Volume of Buy Bid	21937	136352	18041	122539
B	Volume of Sell Bid	2192565	7336837	1290791	5407315
C	Ratio of Buy Bid to Sell Bid Volume	0.010	0.019	0.014	0.023
D	Market Clearing Volume (MWh)	21937	136352	18041	122539
E	Market Clearing Price (₹/MWh)	3500	1500	3500	1500

Source: IEX and PXIL

Note 1: 1 REC = 1 MWh

Note 2:

Forbearance and Floor Price w.e.f 1st March 2015		
Type of REC	Floor Price (₹/MWh)	Forbearance Price (₹/MWh)
Solar	3500.00	5800.00
Non-Solar	1500.00	3300.00