

Monthly Report on Short-term Transactions of Electricity in India

October, 2017



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Contents

S.No.	Contents	Page No
	Contents	i
	List of Tables and Figures	ii
	Abbreviations	iii
	Introduction	1
I	Volume of Short-term Transactions of Electricity	1
II	Price of Short-term Transactions of Electricity	2
(i)	<i>Price of electricity transacted through Traders</i>	2
(ii)	<i>Price of electricity transacted through Power Exchanges</i>	3
(iii)	<i>Price of electricity transacted through DSM</i>	3
III	Volume of Short-term Transactions of Electricity (Regional Entity-wise)	3
IV	Congestion on Inter-State Transmission Corridor for Day-Ahead Market on Power Exchanges	4
V	Bilateral Contracts executed by Traders	5
(i)	<i>Duration of bilateral contracts</i>	5
(ii)	<i>Forward Curve based on Price of bilateral contracts</i>	5
VI	Volume and Price of Renewable Energy Certificates (RECs)	6
VII	Inferences	7

List of Tables and Figures

S.No.	List of Tables and Figures	Page No.
I List of Tables		
Table-1	Volume of Short-term Transactions of Electricity in India	9
Table-2	Percentage Share of Electricity Transacted by Trading Licensees	11
Table-3	Price of Electricity Transacted through Traders	12
Table-4	Price of Electricity Transacted through Traders (Time-wise)	12
Table-5	Price of Electricity Transacted through Power Exchanges	12
Table-6	Volume and Price of Electricity in Term Ahead Market of IEX	12
Table-7	Volume and Price of Electricity in Term Ahead Market of PXIL	12
Table-8	Price of Electricity Transacted through DSM	12
Table-9	Volume of Electricity Sold through Bilateral	14
Table-10	Volume of Electricity Purchased through Bilateral	15
Table-11	Volume of Electricity Sold through Power Exchanges	16
Table-12	Volume of Electricity Purchased through Power Exchanges	18
Table-13	Volume of Electricity Underdrawal through DSM	19
Table-14	Volume of Electricity Over drawal through DSM	21
Table-15	Total Volume of Net Short-term Transactions of Electricity (Regional Entity-wise)	23
Table-16	Details of Congestion in Power Exchanges	25
Table-17	Volume of Short-term Transactions of Electricity in India (Day-wise)	26
Table-18	Price of Electricity in Short-term Transactions (Day-wise)	27
Table-19	Volume of Short-term Transactions of Electricity (Regional Entity-wise)	28
Table-20	Volume and Price of Renewable Energy Certificates (RECs) Transacted through Power Exchanges	31
II List of Figures		
Figure-1	Volume of Short-term Transactions of Electricity	9
Figure-2	Volume of Various Kinds of Electricity Transactions in Total Electricity Generation	9
Figure-3	Volume of Short-term Transactions of Electricity (Day-wise)	10
Figure-4	Percentage Share of Electricity Transacted by Trading Licensees	11
Figure-5	Price of Electricity in Short-term Transactions	13
Figure-6	Price of Electricity in Short-term Transactions (Day-wise)	13
Figure-7	Bilateral Contracts Executed by Traders in November, 2017	30
Figure-8	Forward Curve based on Prices of Bilateral Contracts	30

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
NTECL Vallur	NTPC Tamilnadu Energy Company Limited Vallur
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
SKS Power	SKS Power Generation Chhatisgarh 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 October 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 **October, 2017** are as under:

I: Volume of Short-term Transactions of Electricity

During October 2017, total electricity generation excluding generation from renewable and captive power plants in India was 102708.64 MUs (Table-1).

Of the total electricity generation, 9803.77 MUs (9.55%) was transacted through short-term, comprising of 3543.45 MUs (3.45%) through bilateral (through traders and term-ahead contracts on power exchanges and directly between distribution companies), followed by 4360.37 MUs (4.25%) through day ahead collective transactions on power exchanges (IEX and PXIL) and 1899.95 MUs (1.85%) through DSM (Table-1 & Figure-2).

Of the total short-term transactions, day ahead collective transactions on power exchanges constitute 44.48%, followed by 36.14% through bilateral (29.22% through traders and term-ahead contracts on power exchanges and 6.92% directly between distribution companies) and 19.38% 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 October, 2017. In October, 2017, 23 trading licensees were engaged in short term trading. Top 5 trading licensees had a share of 78.94% in the total volume traded by all the licensees. These are PTC India Ltd., NTPC Vidyut Vyapar Nigam Ltd., Manikaran Power Ltd., Tata Power Trading Company Pvt. Ltd. and JSW Power Trading Company 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 0.2273 for the month of October, 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 4078.61 MUs and 281.76 MUs respectively. The volume of total buy bids and sell bids was 5535.22 MUs and 5247.88 MUs respectively in IEX while the same was 287.11 MUs and 291.31 MUs respectively in PXIL. The variation in the volume of buy bids and sell bids placed through power exchanges shows variation in the demand and supply position.

The volume of electricity transacted through IEX and PXIL in the term-ahead market was 289.74 MUs and 178.97 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 ₹2.32/kWh, ₹9.00/kWh and ₹4.00/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 ₹4.03/kWh, ₹4.20/kWh, and ₹3.93/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 ₹1.20/kWh, ₹11.55/kWh and ₹4.26/kWh respectively in IEX and ₹1.90/kWh, ₹8.80/kWh and ₹3.94/kWh respectively in PXIL (Table-5).

The price of electricity transacted through IEX and PXIL in the term-ahead market was ₹4.15/kWh and ₹4.08/kWh respectively (Table-6 and Table-7).

(iii) *Price of electricity transacted through DSM:* The average deviation settlement price was ₹2.30/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 46.95% of the volume, and these were Sembcorp Gayatri Power Ltd., Jaypee Nigrie Super Thermal Power Project, Punjab, West Bengal and Essar Power Ltd. Top 5 regional entities purchased 56.99% of the volume, and these were Maharashtra, Chhattisgarh, Tamil Nadu, Bihar and Andhra Pradesh (Table-9 & 10).

Of the total power exchange transactions, top 5 regional entities sold 40.51% of the volume, and these were Telangana, TEESTA STG3 Hydro Power Project, Infrastructure Leasing & Financial Services Limited, Gujarat and Sembcorp Gayatri Power Ltd. Top 5 regional entities purchased 60.25% of the volume, and these were Gujarat, West Bengal, Uttar Pradesh, Bihar and Tamil Nadu (Table-11 & 12).

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

Of the total DSM transactions, top 5 regional entities underdrew 28.37% of the volume, and these were NTPC Stations (Western region), SKS Power Generation Chhatisgarh Ltd., Tamil Nadu, NTPC Stations (Northern region) and Telangana (Table-13). Top 5 regional entities overdrew 28.34% of the volume, and these were Odisha, Rajasthan, West Bengal, Damodar Valley Corporation and Madhya Pradesh (Table-14).

Regional entity-wise total volume of net short-term transactions of electricity i.e. volume of net transactions through bilateral, power exchanges and DSM is shown in Table-15 & 19. Top 5 electricity selling regional entities were Sembcorp Gayatri Power Ltd., TEESTA STG3 Hydro Power Project, Jaypee Nigrie Super Thermal Power Project, Telangana and Infrastructure Leasing & Financial Services Limited. Top 5 electricity purchasing regional entities were Bihar, Tamil Nadu, Maharashtra, Uttar Pradesh and Gujarat.

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.

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. It is observed from Table-16 that there is no variation 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 and actual cleared volume; therefore, there is no congestion in October, 2017 in both IEX and PXIL (Table-16).

V: Bilateral Contracts executed by Traders

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

(i) Duration of bilateral contracts: During November, 2017, a total of 87 bilateral contracts (excluding banking/swap contracts) have been executed by traders for the volume of 1165.39 MUs. Figure-7 shows the percentage of contracts categorized according to the period of power supply. It can be observed from the figure that 81.6% of the bilateral contracts were executed for duration of up to one week, 18.4% of the contracts were executed for duration of more than a week and up to one month, while no contracts were executed for duration of more than one month.

During the month, 71 banking/swapping bilateral contracts were also executed for the volume of 2535.75 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 November, 2017 to 24th February, 2018 based on the bilateral contracts⁴ executed till November, 2017. Forward curves have been drawn for the contracts executed in October, 2017 and November, 2017 for the purpose of comparison. It is observed that forward contract prices are significantly higher (for the period from 1st November to 6th December 2017) for the contracts executed in November, 2017 compared to the contracts executed in October, 2017, after which, the prices of both the contracts have been moving together.

⁴Excluding Banking/Swapping contracts

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 October, 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 October, 2017 are shown in Table-20. Market clearing volume of non-solar RECs transacted on IEX and PXIL were 342121 and 144984 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 0.045 and 0.033 in IEX and PXIL respectively.

VII: Inferences:

- The percentage of short-term transactions of electricity to total electricity generation was 9.55%.
- Of the total short-term transactions, day ahead collective transactions on power exchanges constitute 44.48%, followed by 36.14% through bilateral (29.22% through traders and term-ahead contracts on power exchanges and 6.92% directly between distribution companies) and 19.38% through DSM (Table-1 & Figure-1).
- Top 5 trading licensees had a share of 78.94% 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 0.2273, indicating moderate concentration of market power.
- The weighted average price of electricity transacted through trading licensees was ₹4.00/kWh. The weighted average prices of electricity transacted through IEX and PXIL were ₹4.26/kWh and ₹3.94/kWh respectively.
- The average price of electricity transacted through DSM was ₹2.30/kWh.
- Top 5 electricity selling regional entities were Sembcorp Gayatri Power Ltd., TEESTA STG3 Hydro Power Project, Jaypee Nigrie Super Thermal Power Project, Telangana and Infrastructure Leasing & Financial Services Limited. Top 5 electricity purchasing regional entities were Bihar, Tamil Nadu, Maharashtra, Uttar Pradesh and Gujarat.
- No congestion was witnessed in IEX and PXIL during the month.
- In October, 2017, 81.6% of the bilateral contracts were executed for duration of up to one week, 18.4% of the contracts were executed for duration of more than a week and up to one month, while no contracts were executed for duration of more than one month.

- The forward curve of electricity sale prices for the period from 1st November, 2017 to 24th February, 2018 based on the bilateral contracts⁵ executed till November, 2017 shows that forward contract prices are significantly higher (for the period from 1st November to 6th December 2017) for the contracts executed in November, 2017 compared to the contracts executed in October, 2017, after which, the prices of both the contracts have been moving together.
- Market clearing volume of non-solar RECs transacted on IEX and PXIL were 342121 and 144984 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), OCTOBER 2017				
Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	3543.45	36.14	3.45
	(i) Through Traders and PXs	2865.02	29.22	2.79
	(ii) Direct	678.44	6.92	0.66
2	Through Power Exchanges	4360.37	44.48	4.25
	(i) IEX	4078.61	41.60	3.97
	(ii) PXIL	281.76	2.87	0.274
3	Through DSM	1899.95	19.38	1.85
	Total	9803.77	-	9.55
	Total Generation	102708.64	-	-

Source: NLDC

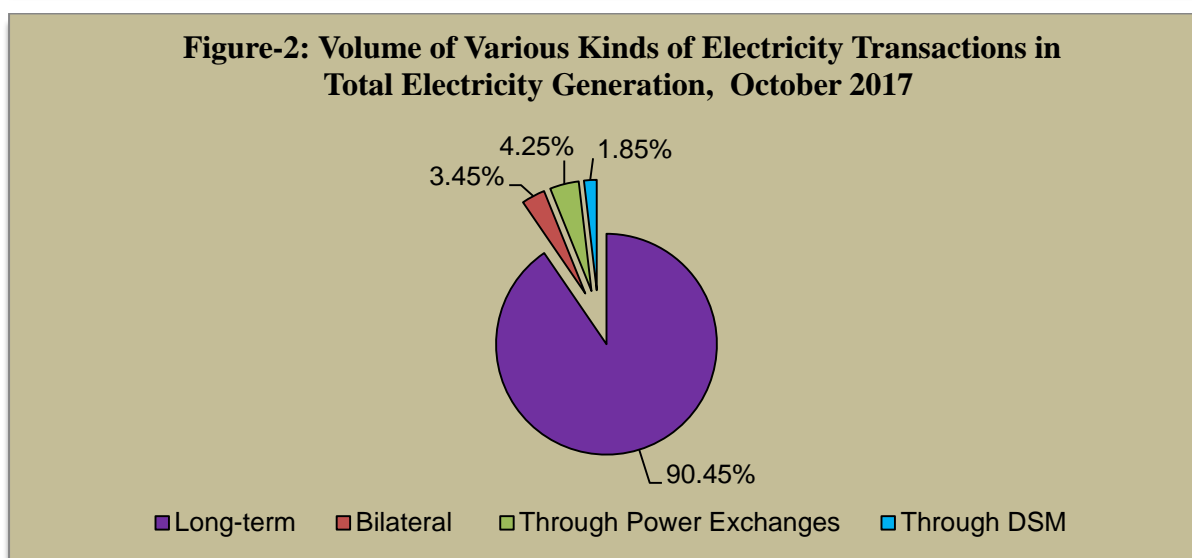
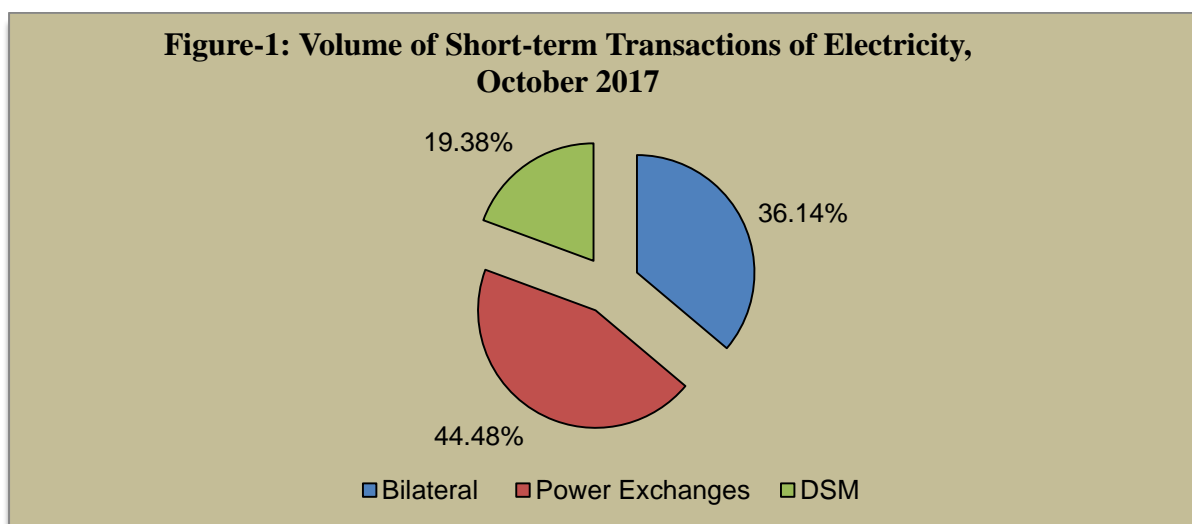


Figure-3: Volume of Short-term Transactions of Electricity, October 2017 (Day-wise)

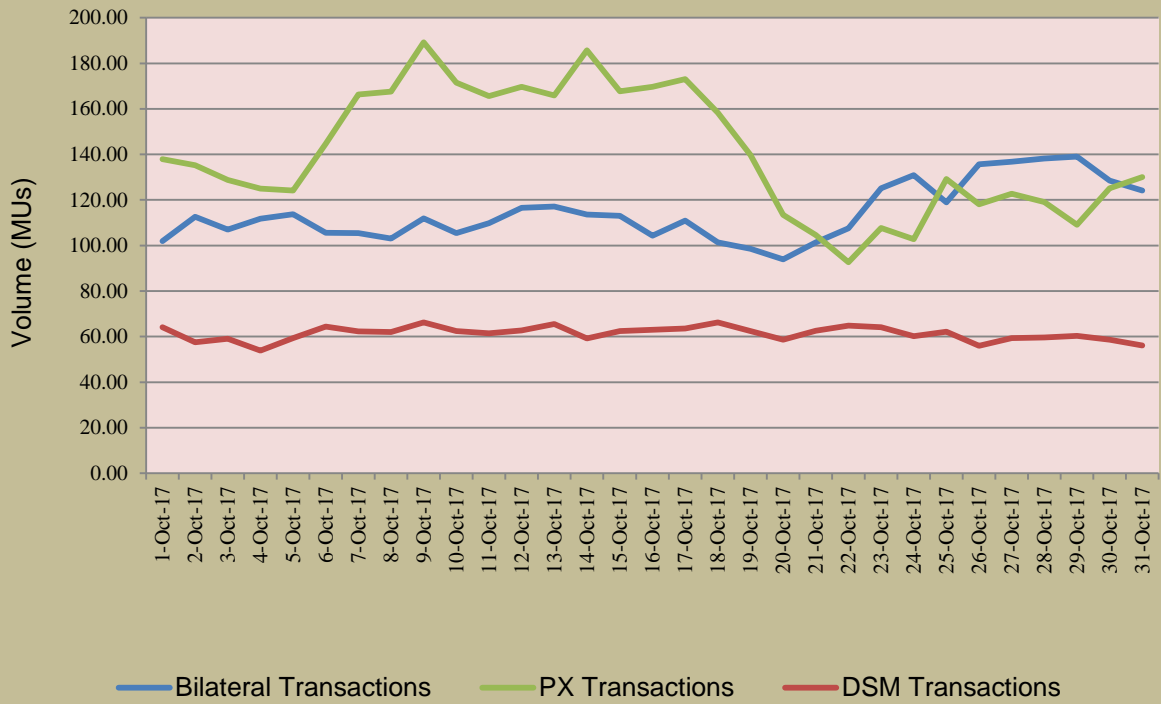


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, OCTOBER 2017			
Sr.No	Name of the Trading Licensee	% Share in total Volume transacted by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd.	43.56	0.1898
2	NTPC Vidyut Vyapar Nigam Ltd.	9.40	0.0088
3	Manikaran Power Ltd.	8.83	0.0078
4	Tata Power Trading Company (P) Ltd.	8.79	0.0077
5	JSW Power Trading Company Ltd	8.36	0.0070
6	Mittal Processors (P) Ltd.	4.78	0.0023
7	Adani Enterprises Ltd.	3.71	0.0014
8	GMR Energy Trading Ltd.	3.15	0.0010
9	Arunachal Pradesh Power Corporation (P) Ltd.	3.01	0.0009
10	Knowledge Infrastructure Systems (P) Ltd	1.37	0.0002
11	National Energy Trading & Services Ltd.	1.23	0.0002
12	Jaiprakash Associates Ltd.	0.96	0.0001
13	Statkraft Markets Pvt. Ltd.	0.77	0.0001
14	RPG Power Trading Company Ltd.	0.67	0.0000
15	Gita Power & Infrastructure Private Limited	0.37	0.0000
16	Shree Cement Ltd.	0.29	0.0000
17	Instinct Infra & Power Ltd.	0.24	0.0000
18	Customized Energy Solutions India (P) Ltd.	0.21	0.0000
19	Essar Electric Power Development Corp. Ltd.	0.17	0.0000
20	My Home Power Private Ltd.	0.07	0.0000
21	Parshavanath Power Projects Private Limited	0.03	0.0000
22	Ambitious Power Trading Company Ltd.	0.01	0.0000
23	Phillip Commodities India (P) Ltd.	0.01	0.0000
TOTAL		100.00%	0.2273
Top 5 trading licensees		78.94%	
<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>			

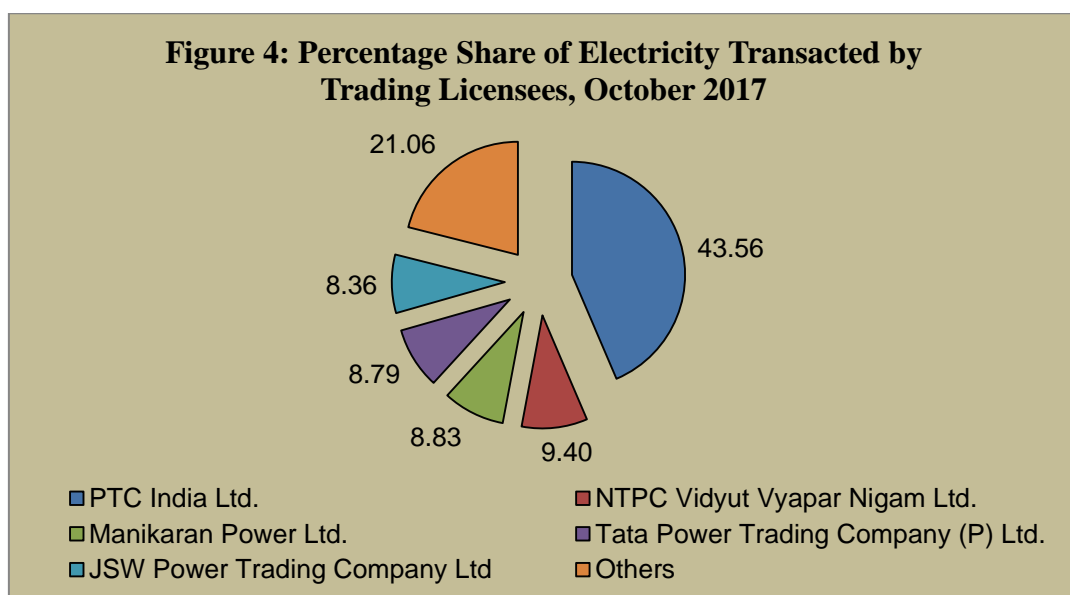


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, OCTOBER 2017		
Sr.No	Item	Sale Price of Traders (₹/kWh)
1	Minimum	2.32
2	Maximum	9.00
3	Weighted Average	4.00

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), OCTOBER 2017		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	4.03
2	PEAK	4.20
3	OFF PEAK	3.93

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, OCTOBER 2017			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	1.20	1.90
2	Maximum	11.55	8.80
3	Weighted Average	4.26	3.94

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, OCTOBER 2017			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	31.89	4.87
2	Day Ahead Contingency Contracts	207.45	3.96
3	Daily Contracts	50.40	4.50
	Total	289.74	4.15

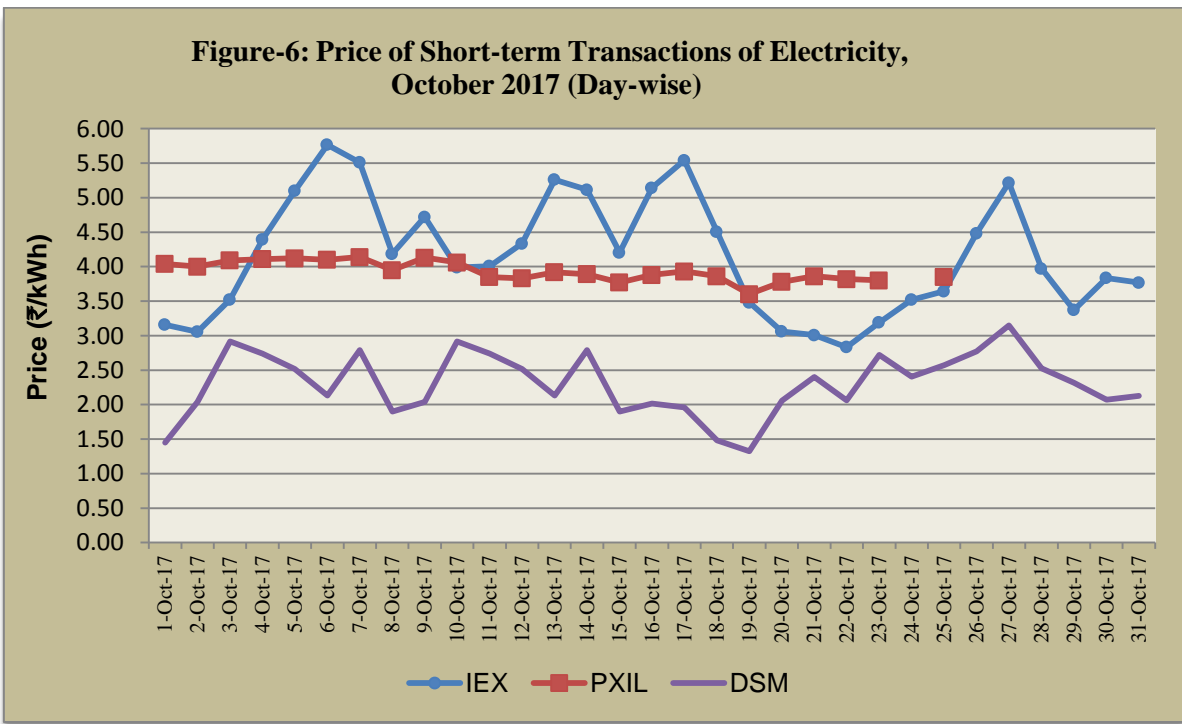
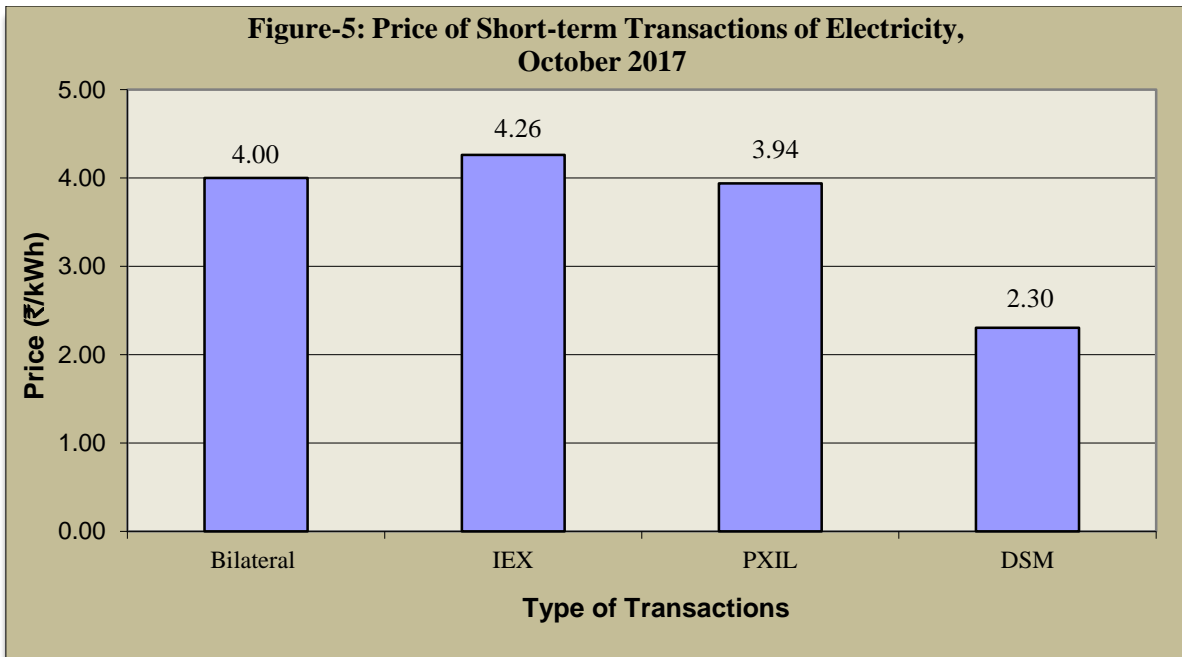
Source: IEX

Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, OCTOBER 2017			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	21.28	5.39
2	Any Day(s) Contracts	157.69	3.90
	Total	178.97	4.08

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH DSM, OCTOBER 2017		
Sr.No	Item	Price in All India Grid (₹/kWh)
1	Minimum	0.00
2	Maximum	6.36
3	Average	2.30

Source: NLDC



Note: For PXIL, on 24th and 26th-31st October 2017, there were no sellers in Day Ahead Product, hence, discontinuous price curve.

Table-9: VOLUME OF ELECTRICITY SOLD THROUGH BILATERAL, OCTOBER 2017		
Name of the Entity	Volume of Sale (MUs)	% of Volume
SEMBCORP	608.37	16.92
JAYPEE NIGRIE	417.22	11.60
PUNJAB	267.84	7.45
WEST BENGAL	203.46	5.66
ESSAR POWER	191.44	5.32
JINDAL STAGE-II	152.10	4.23
JINDAL POWER	139.93	3.89
RAJASTHAN	134.01	3.73
ANDHRA PRADESH	128.97	3.59
GUJARAT	125.83	3.50
DELHI	122.86	3.42
ILF&S	98.35	2.73
TEESTA STG3	96.62	2.69
GMR CHATTISGARH	82.30	2.29
ADHUNIK POWER LTD	77.49	2.15
SHREE CEMENT	75.36	2.10
MEENAKSHI	66.97	1.86
DAGACHU	62.00	1.72
TELANGANA	57.05	1.59
DVC	55.41	1.54
ONGC PALATANA	48.36	1.34
HIMACHAL PRADESH	46.21	1.28
J & K	33.08	0.92
DB POWER	28.87	0.80
HARYANA	27.97	0.78
JITPL	27.65	0.77
TRN ENERGY	26.44	0.74
MEGHALAYA	21.53	0.60
MAHARASHTRA	21.13	0.59
MANIPUR	16.89	0.47
TASHIDENG HEP	16.24	0.45
DIKCHU HEP	15.49	0.43
THERMAL POWERTECH	14.65	0.41
KARNATAKA	12.34	0.34
MB POWER	11.30	0.31
MP	10.09	0.28
LANKO_AMK	9.89	0.28
JORETHANG	9.30	0.26
ACBIL	8.88	0.25
BALCO	5.40	0.15
TAMIL NADU	4.86	0.14
TRIPURA	4.07	0.11
MARUTI COAL	3.71	0.10
DCPP	1.84	0.05
CHUZACHEN HEP	1.75	0.05
GMR KAMALANGA	1.09	0.03
MIZORAM	0.79	0.02
ODISHA	0.58	0.02
KARCHAM WANGTOO	0.57	0.02
SIKKIM	0.54	0.02
DADRA & NAGAR HAVELI	0.39	0.01
JHABUA POWER_MP	0.33	0.01
UTTARAKHAND	0.20	0.01
TOTAL	3596.23	100.00
Volume Sold by top 5 Regional Entities	1688.32	46.95

Table-10: VOLUME OF ELECTRICITY PURCHASED THROUGH BILATERAL, OCTOBER 2017		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
MAHARASHTRA	536.64	15.14
CHHATTISGARH	462.20	13.04
TAMIL NADU	370.93	10.47
BIHAR	348.12	9.82
ANDHRA PRADESH	301.41	8.51
ESSAR STEEL	194.12	5.48
TELANGANA	191.29	5.40
BANGLADESH	180.68	5.10
MP	140.47	3.96
WEST BENGAL	106.08	2.99
J & K	100.80	2.84
ASSAM	97.47	2.75
ODISHA	90.40	2.55
UTTAR PRADESH	86.20	2.43
JHARKHAND	77.49	2.19
HARYANA	45.11	1.27
NEPAL(NVVN)	42.95	1.21
HIMACHAL PRADESH	37.37	1.05
DELHI	28.12	0.79
GOA	23.88	0.67
UTTARAKHAND	20.59	0.58
GUJARAT	17.53	0.49
KERALA	11.92	0.34
PUNJAB	9.60	0.27
DVC	9.23	0.26
DADRA & NAGAR HAVELI	5.79	0.16
RAJASTHAN	5.18	0.15
MIZORAM	0.78	0.02
TRIPURA	0.77	0.02
KARNATAKA	0.36	0.01
TOTAL	3543.45	100.00
Volume Purchased by top 5 Regional Entities	2019.30	56.99

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

Name of the Entity	Volume of Sale (MUs)	% of Volume
TELANGANA	546.60	12.54
TEESTA STG3	438.94	10.07
ILF&S	300.15	6.88
GUJARAT	243.24	5.58
SEMBCORP	237.49	5.45
KARNATAKA	233.04	5.34
HIMACHAL PRADESH	232.23	5.33
KARCHAM WANGTOO	121.58	2.79
MEGHALAYA	99.46	2.28
DELHI	98.95	2.27
SKS POWER	92.36	2.12
PUNJAB	88.02	2.02
ANDHRA PRADESH	86.05	1.97
NLC	86.01	1.97
RAJASTHAN	72.16	1.65
JITPL	65.72	1.51
SIKKIM	64.80	1.49
DB POWER	60.87	1.40
THERMAL POWERTECH	58.95	1.35
UTTARAKHAND	57.98	1.33
JINDAL STAGE-II	57.12	1.31
MP	56.73	1.30
MAHARASHTRA	56.13	1.29
JORETHANG	51.80	1.19
JAYPEE NIGRIE	49.25	1.13
UTTAR PRADESH	48.02	1.10
ACBIL	47.98	1.10
CHUZACHEN HEP	45.22	1.04
MEENAKSHI	44.57	1.02
WEST BENGAL	44.49	1.02
TRIPURA	41.47	0.95
TRN ENERGY	39.94	0.92
ASSAM	36.89	0.85
SPECTRUM	36.43	0.84
GMR CHATTISGARH	35.98	0.83
ODISHA	34.93	0.80
AD HYDRO	33.84	0.78
SHREE CEMENT	30.81	0.71
SAINJ HEP	30.67	0.70
DIKCHU HEP	29.68	0.68
CHHATTISGARH	28.11	0.64
KERALA	22.02	0.50
TAMIL NADU	21.77	0.50
JINDAL POWER	20.49	0.47

MIZORAM	17.41	0.40
MANIPUR	13.79	0.32
MARUTI COAL	12.90	0.30
NJPC	11.32	0.26
MB POWER	11.09	0.25
J & K	10.73	0.25
HARYANA	9.02	0.21
CHANDIGARH	8.11	0.19
ONGC PALATANA	6.89	0.16
NTPC STATIONS-NER	4.95	0.11
NAGALAND	4.84	0.11
ESSAR POWER	4.13	0.09
NTPC STATIONS-ER	3.74	0.09
GOA	2.92	0.07
MALANA	2.57	0.06
DADRA & NAGAR HAVELI	2.15	0.05
LANCO BUDHIL	2.04	0.05
DHARIWAL POWER	1.30	0.03
GMR KAMALANGA	1.26	0.03
DVC	0.24	0.01
NTPC STATIONS-NR	0.01	0.00
TOTAL	4360.37	100.00
Volume sold by top 5 Regional Entities	1766.43	40.51

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

Name of the Entity	Volume of Purchase (MUs)	% of Volume
GUJARAT	844.08	19.36
WEST BENGAL	523.71	12.01
UTTAR PRADESH	475.37	10.90
BIHAR	408.15	9.36
TAMIL NADU	375.68	8.62
MP	254.67	5.84
ODISHA	229.78	5.27
MAHARASHTRA	186.31	4.27
ANDHRA PRADESH	152.37	3.49
J & K	150.46	3.45
KARNATAKA	142.18	3.26
RAJASTHAN	118.50	2.72
ASSAM	97.97	2.25
TELANGANA	80.70	1.85
ESSAR STEEL	55.32	1.27
DELHI	34.85	0.80
DAMAN AND DIU	33.06	0.76
GOA	32.93	0.76
DVC	28.08	0.64
KERALA	26.84	0.62
BALCO	26.06	0.60
UTTARAKHAND	25.23	0.58
HARYANA	12.90	0.30
HIMACHAL PRADESH	12.59	0.29
MEGHALAYA	10.30	0.24
DADRA & NAGAR HAVELI	8.84	0.20
CHANDIGARH	7.75	0.18
CHHATTISGARH	3.67	0.08
TRIPURA	1.03	0.02
PONDICHERRY	0.92	0.02
NAGALAND	0.05	0.00
PUNJAB	0.04	0.00
TOTAL	4360.37	100.00
Volume purchased by top 5 Regional Entities	2626.99	60.25

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

Name of the Entity	Volume of Underdrawal (MUs)	% of Volume
NTPC STATIONS-WR	138.49	8.24
SKS POWER	86.89	5.17
TAMIL NADU	86.28	5.14
NTPC STATIONS-NR	83.75	4.99
TELANGANA	81.11	4.83
MAHARASHTRA	81.10	4.83
SASAN UMPP	73.42	4.37
NHPC STATIONS	58.29	3.47
UTTAR PRADESH	55.59	3.31
NEPAL(NVVN)	53.48	3.18
KARNATAKA	48.47	2.89
ANDHRA PRADESH	46.41	2.76
NLC	45.23	2.69
GUJARAT	44.94	2.68
NTPC STATIONS-ER	42.31	2.52
RAJASTHAN	38.12	2.27
CHHATTISGARH	38.12	2.27
DELHI	34.77	2.07
MP	33.01	1.96
BIHAR	32.25	1.92
UTTARAKHAND	26.84	1.60
PUNJAB	25.37	1.51
J & K	24.69	1.47
NTPC STATIONS-SR	24.68	1.47
ESSAR STEEL	21.69	1.29
HARYANA	19.69	1.17
NEEPCO STATIONS	17.43	1.04
ASSAM	16.40	0.98
JHARKHAND	13.53	0.81
JINDAL STAGE-II	13.18	0.78
BANGLADESH	12.35	0.74
WEST BENGAL	11.63	0.69
TEESTA STG3	11.24	0.67
TEESTA HEP	10.82	0.64
GOA	10.79	0.64
TRIPURA	10.46	0.62
CHANDIGARH	10.29	0.61
JAYPEE NIGRIE	9.68	0.58
MEGHALAYA	9.12	0.54
NJPC	8.13	0.48
PONDICHERRY	8.05	0.48
ARUNACHAL PRADESH	8.04	0.48
GMR KAMALANGA	7.39	0.44
LANKO_AMK	6.98	0.42
DVC	6.85	0.41
MANIPUR	6.68	0.40
ACBIL	6.29	0.37
BALCO	5.84	0.35
MIZORAM	5.62	0.33
NAGALAND	5.55	0.33

KARCHAM WANGTOO	5.54	0.33
JITPL	5.39	0.32
THERMAL POWERTECH	5.32	0.32
CGPL	5.09	0.30
ESSAR POWER	4.96	0.30
HIMACHAL PRADESH	4.31	0.26
DB POWER	4.20	0.25
MAITHON POWER LTD	4.06	0.24
KSK MAHANADI	3.91	0.23
SIKKIM	3.72	0.22
EMCO	3.72	0.22
RANGANADI HEP	3.57	0.21
ODISHA	3.27	0.19
JINDAL POWER	3.26	0.19
GMR CHATTISGARH	3.04	0.18
RGPPL (DABHOL)	2.88	0.17
URI-2	2.86	0.17
TRN ENERGY	2.73	0.16
AD HYDRO	2.72	0.16
CHUZACHEN HEP	2.72	0.16
NSPCL	2.25	0.13
MEENAKSHI	2.20	0.13
COASTGEN	1.86	0.11
KERALA	1.75	0.10
LANCO BUDHIL	1.74	0.10
RKM POWER	1.62	0.10
DADRA & NAGAR HAVELI	1.53	0.09
JORETHANG	1.42	0.08
ILF&S	1.38	0.08
RANGIT HEP	1.33	0.08
MB POWER	1.21	0.07
SEMBCORP	1.10	0.07
DHARIWAL POWER	0.73	0.04
SHREE CEMENT	0.73	0.04
NETCL VALLUR	0.71	0.04
LOKTAK	0.62	0.04
ADHUNIK POWER LTD	0.60	0.04
DAGACHU	0.59	0.03
DCPP	0.56	0.03
DOYANG HEP	0.45	0.03
JHABUA POWER_MP	0.37	0.02
MALANA	0.33	0.02
DAMAN AND DIU	0.13	0.01
TOTAL	1679.80	100.00
Volume Exported by top 5 Regional Entities	476.52	28.37

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

Name of the Entity	Volume of Over drawal (MUs)	% of Volume
ODISHA	159.10	8.10
RAJASTHAN	100.42	5.11
WEST BENGAL	100.25	5.10
DVC	100.25	5.10
MP	96.85	4.93
UTTAR PRADESH	88.10	4.48
HARYANA	87.74	4.46
GUJARAT	82.16	4.18
MAHARASHTRA	76.53	3.89
NTPC STATIONS-NR	59.04	3.00
NTPC STATIONS-ER	53.44	2.72
BIHAR	51.89	2.64
PUNJAB	51.58	2.62
NTPC STATIONS-WR	50.06	2.55
TAMIL NADU	47.86	2.44
HIMACHAL PRADESH	47.50	2.42
NTPC STATIONS-SR	43.13	2.19
KARNATAKA	42.45	2.16
KERALA	40.08	2.04
ANDHRA PRADESH	37.77	1.92
ASSAM	33.77	1.72
JHARKHAND	32.98	1.68
NEPAL(NVVN)	29.67	1.51
DAMAN AND DIU	29.42	1.50
DADRA & NAGAR HAVELI	28.73	1.46
J & K	24.76	1.26
NETCL VALLUR	22.77	1.16
ESSAR STEEL	20.09	1.02
CHHATTISGARH	16.81	0.86
SEMBCORP	16.78	0.85
BALCO	16.28	0.83
TELANGANA	15.41	0.78
UTTARAKHAND	15.38	0.78
CGPL	14.86	0.76
NLC	13.48	0.69
THERMAL POWERTECH	13.13	0.67
DELHI	10.71	0.55
TRIPURA	9.86	0.50
MEENAKSHI	9.78	0.50
JORETHANG	9.23	0.47
GOA	9.00	0.46
ILF&S	8.94	0.45
GMR CHATTISGARH	8.75	0.45
MEGHALAYA	7.96	0.40
MB POWER	7.65	0.39
DAGACHU	7.50	0.38
DB POWER	6.49	0.33
JINDAL STAGE-II	5.95	0.30
NHPC STATIONS	5.66	0.29
KARCHAM WANGTOO	5.52	0.28

JHABUA POWER_MP	5.40	0.27
SIKKIM	5.38	0.27
NJPC	4.52	0.23
GMR KAMALANGA	4.35	0.22
TEESTA STG3	4.24	0.22
CHANDIGARH	4.19	0.21
ACBIL	3.84	0.20
JITPL	3.77	0.19
ARUNACHAL PRADESH	3.56	0.18
MAITHON POWER LTD	3.43	0.17
LANCO BUDHIL	3.01	0.15
NAGALAND	2.97	0.15
JAYPEE NIGRIE	2.83	0.14
PONDICHERRY	2.59	0.13
ADHUNIK POWER LTD	2.51	0.13
RKM POWER	2.27	0.12
TRN ENERGY	2.21	0.11
NSPCL	2.05	0.10
MANIPUR	1.96	0.10
SHREE CEMENT	1.88	0.10
MIZORAM	1.80	0.09
RGPPL (DABHOL)	1.75	0.09
SKS POWER	1.62	0.08
JINDAL POWER	1.61	0.08
COASTGEN	1.50	0.08
NEEPCO STATIONS	1.47	0.07
CHUZACHEN HEP	1.46	0.07
AD HYDRO	1.37	0.07
BANGLADESH	1.30	0.07
DGEN MEGA POWER	1.04	0.05
EMCO	1.02	0.05
MALANA	0.96	0.05
ESSAR POWER	0.84	0.04
DCPP	0.81	0.04
LANKO KONDAPALLI	0.75	0.04
URI-2	0.73	0.04
DHARIWAL POWER	0.72	0.04
RANGANADI HEP	0.69	0.04
SASAN UMPP	0.66	0.03
SIMHAPURI	0.58	0.03
KORBA WEST POWER	0.53	0.03
RANGIT HEP	0.47	0.02
DOYANG HEP	0.30	0.02
LOKTAK	0.27	0.01
LANKO_AMK	0.19	0.01
TEESTA HEP	0.07	0.00
KSK MAHANADI	0.05	0.00
TOTAL	1965.06	100.00
Volume Imported by top 5 Regional Entities	556.87	28.34

Table-15: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY-WISE), OCTOBER 2017		
Sr.No.	Name of the Entity	Total volume of net short-term transactions of electricity*
1	BIHAR	775.90
2	TAMIL NADU	681.57
3	MAHARASHTRA	641.13
4	UTTAR PRADESH	546.05
5	GUJARAT	529.76
6	WEST BENGAL	470.47
7	ODISHA	440.50
8	CHHATTISGARH	416.45
9	MP	392.16
10	ESSAR STEEL	247.83
11	ANDHRA PRADESH	230.12
12	J & K	207.51
13	ASSAM	175.92
14	BANGLADESH	169.62
15	JHARKHAND	96.94
16	HARYANA	89.08
17	DVC	75.06
18	DAMAN AND DIU	62.35
19	KERALA	55.08
20	GOA	52.00
21	DADRA & NAGAR HAVELI	39.30
22	BALCO	31.10
23	NETCL VALLUR	22.06
24	NEPAL(NVVN)	19.15
25	NTPC STATIONS-SR	18.45
26	CGPL	9.77
27	NTPC STATIONS-ER	7.40
28	JHABUA POWER_MP	4.70
29	DGEN MEGA POWER	1.04
30	LANKO KONDAPALLI	0.75
31	LANCO BUDHIL	-0.77
32	RANGIT HEP	-0.87
33	RGPPL (DABHOL)	-1.13
34	DHARIWAL POWER	-1.32
35	DCPP	-1.59
36	MALANA	-1.94
37	URI-2	-2.13
38	EMCO	-2.69
39	RANGANADI HEP	-2.88
40	KSK MAHANADI	-3.86
41	ARUNACHAL PRADESH	-4.48
42	PONDICHERRY	-4.54
43	NTPC STATIONS-NER	-4.95
44	GMR KAMALANGA	-5.39
45	CHANDIGARH	-6.46
46	NAGALAND	-7.52
47	TEESTA HEP	-10.75
48	NJPC	-14.93
49	MB POWER	-15.94
50	NEEPCO STATIONS	-15.95

51	TASHIDENG HEP	-16.24
52	MARUTI COAL	-16.60
53	LANKO_AMK	-16.68
54	RAJASTHAN	-20.20
55	MIZORAM	-21.25
56	UTTARAKHAND	-23.83
57	NTPC STATIONS-NR	-24.72
58	SAINJ HEP	-30.67
59	AD HYDRO	-35.19
60	MANIPUR	-35.41
61	SPECTRUM	-36.43
62	TRIPURA	-44.33
63	DIKCHU HEP	-45.17
64	CHUZACHEN HEP	-48.23
65	NHPC STATIONS	-52.63
66	JORETHANG	-53.29
67	DAGACHU	-55.08
68	ONGC PALATANA	-55.25
69	ACBIL	-59.31
70	SIKKIM	-63.69
71	THERMAL POWERTECH	-65.79
72	TRN ENERGY	-66.90
73	SASAN UMPP	-72.76
74	ADHUNIK POWER LTD	-75.59
75	DB POWER	-87.45
76	NTPC STATIONS-WR	-88.43
77	JITPL	-94.99
78	MEENAKSHI	-103.96
79	SHREE CEMENT	-105.02
80	KARNATAKA	-108.86
81	MEGHALAYA	-111.85
82	GMR CHATTISGARH	-112.57
83	NLC	-117.75
84	KARCHAM WANGTOO	-122.17
85	JINDAL POWER	-162.07
86	SKS POWER	-177.64
87	DELHI	-182.90
88	HIMACHAL PRADESH	-185.28
89	ESSAR POWER	-199.69
90	JINDAL STAGE-II	-216.45
91	PUNJAB	-320.01
92	ILF&S	-390.94
93	TELANGANA	-397.36
94	JAYPEE NIGRIE	-473.33
95	TEESTA STG3	-542.56
96	SEMBCORP	-830.18
* 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, OCTOBER 2017			
	Details of Congestion	IEX	PXIL
A	Unconstrained Cleared Volume* (MUs)	4082.90	281.76
B	Actual Cleared Volume and hence scheduled (MUs)	4082.90	281.76
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	0.00	0.00
<i>* This power would have been scheduled had there been no congestion.</i>			
<i>Source: IEX & PXIL & NLDC</i>			

**Table-17: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA
(DAY-WISE) (MUs), OCTOBER 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-Oct-17	75.97	25.92	125.88	12.00	64.06	3177.05
2-Oct-17	85.23	27.33	123.30	12.00	57.55	3237.88
3-Oct-17	80.23	26.79	116.77	12.00	59.10	3407.84
4-Oct-17	87.49	24.24	112.98	12.00	53.89	3464.45
5-Oct-17	89.53	24.25	112.19	12.00	59.36	3510.91
6-Oct-17	82.48	23.14	132.73	12.00	64.37	3489.25
7-Oct-17	83.84	21.64	154.26	12.00	62.28	3488.31
8-Oct-17	84.85	18.14	155.57	12.00	61.95	3346.74
9-Oct-17	91.40	20.48	177.27	12.00	66.24	3399.04
10-Oct-17	84.46	20.95	159.52	12.00	62.49	3441.50
11-Oct-17	89.15	20.64	146.43	19.20	61.41	3452.37
12-Oct-17	95.30	21.27	157.75	12.00	62.72	3463.18
13-Oct-17	94.87	22.26	153.85	12.00	65.55	3449.01
14-Oct-17	90.57	23.06	173.68	12.00	59.13	3401.67
15-Oct-17	91.71	21.29	155.68	12.00	62.39	3245.33
16-Oct-17	82.28	21.98	157.70	12.00	62.92	3279.40
17-Oct-17	89.14	21.74	161.10	12.00	63.54	3387.40
18-Oct-17	80.98	20.34	149.85	8.40	66.20	3387.40
19-Oct-17	80.82	17.78	129.50	10.20	62.49	3106.87
20-Oct-17	76.05	17.83	103.32	10.20	58.60	3005.03
21-Oct-17	84.52	16.78	94.45	10.20	62.58	3015.79
22-Oct-17	91.00	16.56	82.40	10.20	64.87	3012.23
23-Oct-17	104.60	20.50	97.43	10.20	64.12	3212.84
24-Oct-17	107.97	22.92	102.71	0.00	60.17	3342.71
25-Oct-17	94.82	24.07	118.10	11.16	62.15	3364.15
26-Oct-17	111.92	23.69	118.11	0.00	55.99	3323.29
27-Oct-17	114.34	22.51	122.72	0.00	59.27	3320.42
28-Oct-17	116.15	22.06	119.12	0.00	59.55	3306.00
29-Oct-17	116.77	22.34	109.16	0.00	60.27	3204.00
30-Oct-17	105.70	22.76	125.06	0.00	58.68	3224.58
31-Oct-17	100.87	23.22	130.01	0.00	56.05	3242.00
Total	2865.02	678.44	4078.61	281.76	1899.95	102708.64

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), OCTOBER, 2017

Market Segment	Day ahead market of IEX			Day ahead market of PXIL			Under Drawl/Over Drawl from the Grid (DSM)		
	Minimum ACP	Maximum ACP	Weighted Average Price*	Minimum ACP	Maximum ACP	Weighted Average Price*	All India Grid		
Date	Minimum ACP	Maximum ACP	Weighted Average Price*	Minimum ACP	Maximum ACP	Weighted Average Price*	Minimum Price	Maximum Price	Average Price**
1-Oct-17	1.65	4.82	3.16	3.32	5.60	4.04	0.00	3.45	1.45
2-Oct-17	1.67	4.18	3.06	3.19	5.72	4.00	0.00	3.45	2.04
3-Oct-17	1.20	5.01	3.52	2.99	5.19	4.09	0.71	6.16	2.92
4-Oct-17	2.79	7.80	4.39	1.90	5.71	4.11	0.00	5.32	2.74
5-Oct-17	3.49	8.40	5.10	2.66	7.67	4.12	0.00	3.45	2.52
6-Oct-17	4.00	9.23	5.77	1.90	5.71	4.10	0.00	5.32	2.13
7-Oct-17	4.00	6.25	5.51	2.66	7.67	4.14	0.00	5.74	2.79
8-Oct-17	3.51	6.25	4.19	2.21	7.78	3.95	0.00	3.45	1.90
9-Oct-17	3.48	6.25	4.72	2.66	7.67	4.13	0.00	3.45	2.04
10-Oct-17	2.79	5.29	3.99	2.88	5.75	4.06	0.71	6.16	2.92
11-Oct-17	3.32	5.59	4.01	2.71	5.21	3.85	0.00	5.32	2.74
12-Oct-17	3.49	6.00	4.33	2.71	5.21	3.83	0.00	3.45	2.52
13-Oct-17	4.25	7.50	5.26	2.81	5.31	3.92	0.00	5.32	2.13
14-Oct-17	3.97	7.91	5.11	3.30	5.21	3.89	0.00	5.74	2.79
15-Oct-17	3.00	5.75	4.20	3.18	5.09	3.77	0.00	3.45	1.90
16-Oct-17	3.75	10.00	5.14	3.88	3.88	3.88	0.00	5.32	2.01
17-Oct-17	3.28	10.80	5.54	2.60	8.80	3.93	0.00	4.91	1.96
18-Oct-17	2.56	11.55	4.51	2.85	5.30	3.86	0.00	3.45	1.48
19-Oct-17	2.25	6.50	3.48	2.59	5.04	3.60	0.00	3.45	1.33
20-Oct-17	1.72	4.21	3.06	2.77	5.22	3.78	0.00	5.74	2.06
21-Oct-17	2.10	3.92	3.01	2.85	5.30	3.86	0.36	3.45	2.40
22-Oct-17	1.37	3.75	2.83	3.21	4.45	3.82	0.36	3.45	2.06
23-Oct-17	2.25	4.18	3.19	3.23	4.45	3.80	0.36	5.11	2.72
24-Oct-17	2.34	5.00	3.52	0.00	0.00	0.00	0.36	3.45	2.40
25-Oct-17	2.27	6.07	3.64	2.71	5.21	3.85	0.00	5.74	2.57
26-Oct-17	3.08	8.07	4.48	0.00	0.00	0.00	1.07	5.32	2.77
27-Oct-17	3.47	11.14	5.21	0.00	0.00	0.00	0.71	6.36	3.15
28-Oct-17	3.03	5.80	3.97	0.00	0.00	0.00	0.00	6.36	2.53
29-Oct-17	2.67	3.92	3.37	0.00	0.00	0.00	0.36	5.32	2.32
30-Oct-17	2.40	5.50	3.83	0.00	0.00	0.00	0.00	4.91	2.07
31-Oct-17	2.25	5.00	3.77	0.00	0.00	0.00	0.00	5.11	2.13
	1.20#	11.55#	4.26	1.90#	8.80#	3.94	0.00#	6.36#	2.30

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), OCTOBER 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 Draw)	Export (Under Draw)	Net**	
PUNJAB	267.84	9.60	-258.24	88.02	0.04	-87.98	51.58	25.37	26.21	-320.01
HARYANA	27.97	45.11	17.14	9.02	12.90	3.88	87.74	19.69	68.05	89.08
RAJASTHAN	134.01	5.18	-128.84	72.16	118.50	46.34	100.42	38.12	62.30	-20.20
DELHI	122.86	28.12	-94.74	98.95	34.85	-64.11	10.71	34.77	-24.06	-182.90
UP	0.00	86.20	86.20	48.02	475.37	427.35	88.10	55.59	32.51	546.05
UTTARAKHAND	0.20	20.59	20.39	57.98	25.23	-32.76	15.38	26.84	-11.46	-23.83
HP	46.21	37.37	-8.84	232.23	12.59	-219.63	47.50	4.31	43.19	-185.28
J & K	33.08	100.80	67.72	10.73	150.46	139.72	24.76	24.69	0.07	207.51
CHANDIGARH	0.00	0.00	0.00	8.11	7.75	-0.36	4.19	10.29	-6.09	-6.46
MP	10.09	140.47	130.38	56.73	254.67	197.94	96.85	33.01	63.84	392.16
MAHARASHTRA	21.13	536.64	515.51	56.13	186.31	130.18	76.53	81.10	-4.56	641.13
GUJARAT	125.83	17.53	-108.30	243.24	844.08	600.84	82.16	44.94	37.22	529.76
CHHATTISGARH	0.00	462.20	462.20	28.11	3.67	-24.44	16.81	38.12	-21.31	416.45
GOA	0.10	23.88	23.78	2.92	32.93	30.01	9.00	10.79	-1.79	52.00
DAMAN DIU	0.00	0.00	0.00	0.00	33.06	33.06	29.42	0.13	29.29	62.35
D & N HAVELI	0.39	5.79	5.40	2.15	8.84	6.69	28.73	1.53	27.21	39.30
ANDHRA PR	128.97	301.41	172.44	86.05	152.37	66.32	37.77	46.41	-8.64	230.12
KARNATAKA	12.34	0.36	-11.98	233.04	142.18	-90.86	42.45	48.47	-6.01	-108.86
KERALA	0.00	11.92	11.92	22.02	26.84	4.82	40.08	1.75	38.33	55.08
TAMIL NADU	4.86	370.93	366.07	21.77	375.68	353.91	47.86	86.28	-38.42	681.57
PONDICHERRY	0.00	0.00	0.00	0.00	0.92	0.92	2.59	8.05	-5.46	-4.54
TELANGANA	57.05	191.29	134.24	546.60	80.70	-465.90	15.41	81.11	-65.70	-397.36
WEST BENGAL	203.46	106.08	-97.38	44.49	523.71	479.22	100.25	11.63	88.62	470.47
ODISHA	0.58	90.40	89.83	34.93	229.78	194.85	159.10	3.27	155.83	440.50
BIHAR	0.00	348.12	348.12	0.00	408.15	408.15	51.89	32.25	19.63	775.90
JHARKHAND	0.00	77.49	77.49	0.00	0.00	0.00	32.98	13.53	19.46	96.94
SIKKIM	0.54	0.00	-0.54	64.80	0.00	-64.80	5.38	3.72	1.65	-63.69
DVC	55.41	9.23	-46.19	0.24	28.08	27.84	100.25	6.85	93.40	75.06
ARUNACHAL P	0.00	0.00	0.00	0.00	0.00	0.00	3.56	8.04	-4.48	-4.48
ASSAM	0.00	97.47	97.47	36.89	97.97	61.08	33.77	16.40	17.37	175.92
MANIPUR	16.89	0.00	-16.89	13.79	0.00	-13.79	1.96	6.68	-4.72	-35.41
MEGHALAYA	21.53	0.00	-21.53	99.46	10.30	-89.16	7.96	9.12	-1.16	-111.85
MIZORAM	0.79	0.78	-0.02	17.41	0.00	-17.41	1.80	5.62	-3.82	-21.25
NAGALAND	0.14	0.00	-0.14	4.84	0.05	-4.80	2.97	5.55	-2.58	-7.52
TRIPURA	4.07	0.77	-3.30	41.47	1.03	-40.44	9.86	10.46	-0.59	-44.33
NTPC -NR	0.00	0.00	0.00	0.01	0.00	-0.01	59.04	83.75	-24.71	-24.72
NHPC STN	0.00	0.00	0.00	0.00	0.00	0.00	5.66	58.29	-52.63	-52.63
NJPC	0.00	0.00	0.00	11.32	0.00	-11.32	4.52	8.13	-3.61	-14.93
AD HYDRO	0.00	0.00	0.00	33.84	0.00	-33.84	1.37	2.72	-1.35	-35.19
KARCHAM WAH	0.57	0.00	-0.57	121.58	0.00	-121.58	5.52	5.54	-0.02	-122.17
SHREE CEMEN	75.36	0.00	-75.36	30.81	0.00	-30.81	1.88	0.73	1.15	-105.02
MALANA	0.00	0.00	0.00	2.57	0.00	-2.57	0.96	0.33	0.63	-1.94
URI-2	0.00	0.00	0.00	0.00	0.00	0.00	0.73	2.86	-2.13	-2.13
SAINJ HEP	0.00	0.00	0.00	30.67	0.00	-30.67	0.00	0.00	0.00	-30.67
NTPC -WR	0.00	0.00	0.00	0.00	0.00	0.00	50.06	138.49	-88.43	-88.43
JINDAL POWER	139.93	0.00	-139.93	20.49	0.00	-20.49	1.61	3.26	-1.65	-162.07
LANKO_AMK	9.89	0.00	-9.89	0.00	0.00	0.00	0.19	6.98	-6.79	-16.68
NSPCL	0.00	0.00	0.00	0.00	0.00	0.00	2.05	2.25	-0.20	-0.20
ACBIL	8.88	0.00	-8.88	47.98	0.00	-47.98	3.84	6.29	-2.45	-59.31
BALCO	5.40	0.00	-5.40	0.00	26.06	26.06	16.28	5.84	10.45	31.10
RGPPL	0.00	0.00	0.00	0.00	0.00	0.00	1.75	2.88	-1.13	-1.13
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	14.86	5.09	9.77	9.77

DCPP	1.84	0.00	-1.84	0.00	0.00	0.00	0.81	0.56	0.25	-1.59
EMCO	0.00	0.00	0.00	0.00	0.00	0.00	1.02	3.72	-2.69	-2.69
ESSAR STEEL	0.00	194.12	194.12	0.00	55.32	55.32	20.09	21.69	-1.60	247.83
KSK MAHANAD	0.00	0.00	0.00	0.00	0.00	0.00	0.05	3.91	-3.86	-3.86
ESSAR POWE	191.44	0.00	-191.44	4.13	0.00	-4.13	0.84	4.96	-4.12	-199.69
JINDAL STG-II	152.10	0.00	-152.10	57.12	0.00	-57.12	5.95	13.18	-7.23	-216.45
DB POWER	28.87	0.00	-28.87	60.87	0.00	-60.87	6.49	4.20	2.29	-87.45
DHARIWAL PO	0.00	0.00	0.00	1.30	0.00	-1.30	0.72	0.73	-0.01	-1.32
JAYPEE NIGRI	417.22	0.00	-417.22	49.25	0.00	-49.25	2.83	9.68	-6.85	-473.33
DGEN MEGA P	0.00	0.00	0.00	0.00	0.00	0.00	1.04	0.00	1.04	1.04
GMR CHATTIS	82.30	0.00	-82.30	35.98	0.00	-35.98	8.75	3.04	5.71	-112.57
MB POWER	11.30	0.00	-11.30	11.09	0.00	-11.09	7.65	1.21	6.44	-15.94
MARUTI COAL	3.71	0.00	-3.71	12.90	0.00	-12.90	0.00	0.00	0.00	-16.60
SPECTRUM	0.00	0.00	0.00	36.43	0.00	-36.43	0.00	0.00	0.00	-36.43
JHABUA_MP	0.33	0.00	-0.33	0.00	0.00	0.00	5.40	0.37	5.03	4.70
SASAN UMPP	0.00	0.00	0.00	0.00	0.00	0.00	0.66	73.42	-72.76	-72.76
TRN ENERGY	26.44	0.00	-26.44	39.94	0.00	-39.94	2.21	2.73	-0.52	-66.90
RKM POWER	0.00	0.00	0.00	0.00	0.00	0.00	2.27	1.62	0.66	0.66
SKS POWER	0.00	0.00	0.00	92.36	0.00	-92.36	1.62	86.89	-85.27	-177.64
NTPC-SR	0.00	0.00	0.00	0.00	0.00	0.00	43.13	24.68	18.45	18.45
MEENAKSHI	66.97	0.00	-66.97	44.57	0.00	-44.57	9.78	2.20	7.58	-103.96
THERMAL POW	14.65	0.00	-14.65	58.95	0.00	-58.95	13.13	5.32	7.81	-65.79
ILF&S	98.35	0.00	-98.35	300.15	0.00	-300.15	8.94	1.38	7.56	-390.94
NLC	0.00	0.00	0.00	86.01	0.00	-86.01	13.48	45.23	-31.75	-117.75
SEMBCORP	608.37	0.00	-608.37	237.49	0.00	-237.49	16.78	1.10	15.68	-830.18
NETCL VALLU	0.00	0.00	0.00	0.00	0.00	0.00	22.77	0.71	22.06	22.06
NTPC -ER	0.00	0.00	0.00	3.74	0.00	-3.74	53.44	42.31	11.14	7.40
ADHUNIK POW	77.49	0.00	-77.49	0.00	0.00	0.00	2.51	0.60	1.90	-75.59
CHUZACHEN H	1.75	0.00	-1.75	45.22	0.00	-45.22	1.46	2.72	-1.26	-48.23
RANGIT HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.47	1.33	-0.87	-0.87
GMR KAMALAN	1.09	0.00	-1.09	1.26	0.00	-1.26	4.35	7.39	-3.04	-5.39
JITPL	27.65	0.00	-27.65	65.72	0.00	-65.72	3.77	5.39	-1.62	-94.99
TEESTA HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.07	10.82	-10.75	-10.75
DAGACHU	62.00	0.00	-62.00	0.00	0.00	0.00	7.50	0.59	6.92	-55.08
JORETHANG	9.30	0.00	-9.30	51.80	0.00	-51.80	9.23	1.42	7.81	-53.29
NEPAL(NVVN)	0.00	42.95	42.95	0.00	0.00	0.00	29.67	53.48	-23.81	19.15
BANGLADESH	0.00	180.68	180.68	0.00	0.00	0.00	1.30	12.35	-11.06	169.62
TEESTA STG3	96.62	0.00	-96.62	438.94	0.00	-438.94	4.24	11.24	-7.00	-542.56
DIKCHU HEP	15.49	0.00	-15.49	29.68	0.00	-29.68	0.00	0.00	0.00	-45.17
TASHIDENG HE	16.24	0.00	-16.24	0.00	0.00	0.00	0.00	0.00	0.00	-16.24
NTPC -NER	0.00	0.00	0.00	4.95	0.00	-4.95	0.00	0.00	0.00	-4.95
NEEPCO STN	0.00	0.00	0.00	0.00	0.00	0.00	1.47	17.43	-15.95	-15.95
RANGANADI HE	0.00	0.00	0.00	0.00	0.00	0.00	0.69	3.57	-2.88	-2.88
ONGC PALATA	48.36	0.00	-48.36	6.89	0.00	-6.89	0.00	0.00	0.00	-55.25
TOTAL	3596.23	3543.45	-52.78	4358.33	4360.37	2.04	1954.71	1671.07	283.63	232.89

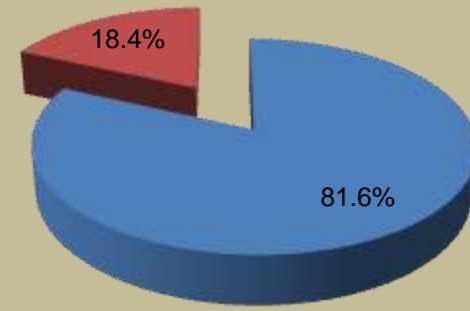
Source: NLDC

* 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,

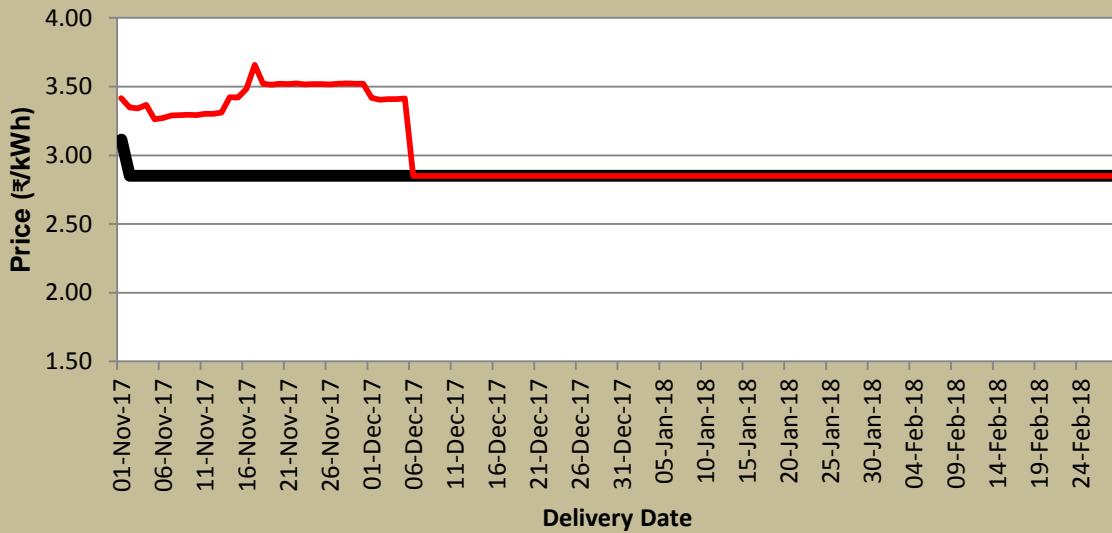
*** Total net includes net of transactions through bilateral, power exchange and DSM

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



■ Upto one week
■ More than one week and upto one month

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



— Forward Curve in October 2017 — Forward Curve in November 2017

Table-20 : VOLUME AND PRICE OF RENEWABLE ENERGY CERTIFICATES (RECs) TRANSACTED THROUGH POWER EXCHANGES, OCTOBER 2017			
Sr.No.	Details of REC Transactions	IEX	PXIL
		Non-Solar	Non Solar
A	Volume of Buy Bid	342121	144984
B	Volume of Sell Bid	7611747	4401298
C	Ratio of Buy Bid to Sell Bid Volume	0.045	0.033
D	Market Clearing Volume (MWh)	342121	144984
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>