



Monthly Report on Short-term Transactions of Electricity in India

November, 2017



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Abbreviations

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

NEEPCO	North Eastern Electric Power Corporation Limited
NHPC STATIONS	National Hydro Electric Power Corporation Ltd. Stations
NLC	Neyveli Lignite Corporation Limited
NTPC STATIONS	National Thermal Power Corporation Ltd. Stations
NJPC	Nathpa Jhakri Hydroelectric Power Station
NLDC	National Load Despatch Centre
NSPCL	NTPC - SAIL Power Company Private Limited
NVVN	NTPC Vidyut Vyapar Nigam Limited
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 November 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 **November, 2017** are as under:

I: Volume of Short-term Transactions of Electricity

During November 2017, total electricity generation excluding generation from renewable and captive power plants in India was 95122.18 MUs (Table-1).

Of the total electricity generation, 9950.73 MUs (10.46%) was transacted through short-term, comprising of 4650.44 MUs (4.89%) through bilateral (through traders and term-ahead contracts on power exchanges and directly between distribution companies), followed by 3551.73 MUs (3.73%) through day ahead collective transactions on power exchanges (IEX and PXIL) and 1748.57 MUs (1.84%) through DSM (Table-1 & Figure-2).

Of the total short-term transactions, bilateral constitutes 46.73% (34.04% through traders and term-ahead contracts on power exchanges and 12.69% directly between distribution companies) followed by 35.69% through day ahead collective transactions on power exchanges and 17.57% 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 November, 2017. In November, 2017, 24 trading licensees were engaged in short term trading. Top 5 trading licensees had a share of 77.97% 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 Mittal Processor (P) 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 0.2330 for the month of November, 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 3524.43 MUs and 27.30 MUs respectively. The volume of total buy bids and sell bids was 4524.90 MUs and 5587.41 MUs respectively in IEX while the same was 50.48 MUs and 44.86 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 317.37 MUs and 96.99 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 ₹2.84/kWh, ₹6.40/kWh and ₹3.55/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 ₹3.48/kWh, ₹5.54/kWh, and ₹3.77/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 ₹1.10/kWh, ₹9.75/kWh and ₹3.76/kWh respectively in IEX and ₹2.15/kWh, ₹7.69/kWh and ₹4.04/kWh respectively in PXIL (Table-5).

The price of electricity transacted through IEX and PXIL in the term-ahead market was ₹3.76/kWh and ₹3.96/kWh respectively (Table-6 and Table-7).

(iii) Price of electricity transacted through DSM: The average deviation settlement price was ₹2.37/kWh. The minimum and maximum deviation settlement prices were ₹0.00/kWh and ₹8.03/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 56.70% of the volume, and these were Haryana, Sembcorp Gayatri Power Ltd., Punjab, Delhi and Jaypee Nigrie Super Thermal Power Project. Top 5 regional entities purchased 63.39% of the volume, and these were Madhya Pradesh, Maharashtra, Tamil Nadu, Jammu & Kashmir and Karnataka (Table-9 & 10).

Of the total power exchange transactions, top 5 regional entities sold 34.11% of the volume, and these were Telangana, TEESTA STG3 Hydro Power Project, Punjab, Rajasthan and Gujarat. Top 5 regional entities purchased 57.96% of the volume, and these were Gujarat, Maharashtra, Andhra Pradesh, West Bengal and Karnataka (Table-11 & 12).

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

Of the total DSM transactions, top 5 regional entities underdrew 35.26% of the volume, and these were NTPC Stations (Western region), SKS Power Generation Chhatisgarh Ltd., Telangana, Uttar Pradesh and Sasan Ultra Mega Power Project (Table-13). Top 5 regional entities overdrew 30.94% of the volume, and these were Odisha, Rajasthan, Tamil Nadu, West Bengal and Damodar Valley Corporation (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 Punjab, Haryana, Delhi, Sembcorp Gayatri Power Ltd. and Jaypee Nigrie Super Thermal Power Project. Top 5 electricity purchasing regional entities were Madhya Pradesh, Maharashtra, Tamil Nadu, Gujarat and Jammu & Kashmir.

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 November, 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 November, 2017, this section covers an analysis of bilateral contracts executed in December, 2017.

(i) Duration of bilateral contracts: During December, 2017, a total of 60 bilateral contracts (excluding banking/swap contracts) have been executed by traders for the volume of 600.21 MUs. Figure-7 shows the percentage of contracts categorized according to the period of power supply. It can be observed from the figure that 60% of the bilateral contracts were executed for duration of up to one week, 40% 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, 22 banking/swapping bilateral contracts were also executed for the volume of 989.90 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 December, 2017 to 31st March, 2018 based on the bilateral contracts⁴ executed till December, 2017. Forward curves have been drawn for the contracts executed in November, 2017 and December, 2017 for the purpose of comparison. It is observed that forward contract prices are significantly higher (for the period from 5th December 2017 to 16th January 2018) for the contracts executed in December, 2017 compared to the contracts executed in November, 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 November, 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 November, 2017 are shown in Table-20. Market clearing volume of non-solar RECs transacted on IEX and PXIL were 1889982 and 317640 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 0.19 and 0.13 in IEX and PXIL respectively.

VII: Inferences:

- The percentage of short-term transactions of electricity to total electricity generation was 10.46%.
- Of the total short-term transactions, bilateral constitutes 46.73% (34.04% through traders and term-ahead contracts on power exchanges and 12.69% directly between distribution companies) followed by 35.69% through day ahead collective transactions on power exchanges and 17.57% through DSM (Table-1 & Figure-1).
- Top 5 trading licensees had a share of 77.97% 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 0.23, indicating moderate concentration of market power.
- The weighted average price of electricity transacted through trading licensees was ₹3.55/kWh. The weighted average prices of electricity transacted through IEX and PXIL were ₹3.76/kWh and ₹4.04/kWh respectively.
- The average price of electricity transacted through DSM was ₹2.37/kWh.
- Top 5 electricity selling regional entities were Punjab, Haryana, Delhi, Sembcorp Gayatri Power Ltd. and Jaypee Nigrie Super Thermal Power Project. Top 5 electricity purchasing regional entities were Madhya Pradesh, Maharashtra, Tamil Nadu, Gujarat and Jammu & Kashmir.
- No congestion was witnessed in IEX and PXIL during the month.
- In November, 2017, 60% of the bilateral contracts were executed for duration of up to one week, 40% 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 December, 2017 to 31st March, 2018 based on the bilateral contracts⁵ executed till December, 2017 shows

⁵Excluding Banking/Swapping contracts

that forward contract prices are significantly higher (for the period from 5th December 2017 to 16th January 2018) for the contracts executed in December, 2017 compared to the contracts executed in November, 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 1889982 and 317640 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), NOVEMBER 2017				
Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	4650.44	46.73	4.89
	(i) Through Traders and PXs	3387.64	34.04	3.56
	(ii) Direct	1262.80	12.69	1.33
2	Through Power Exchanges	3551.73	35.69	3.73
	(i) IEX	3524.43	35.42	3.71
	(ii) PXIL	27.30	0.27	0.029
3	Through DSM	1748.57	17.57	1.84
	Total	9950.73	-	10.46
	Total Generation	95122.18	-	-

Source: NLDC

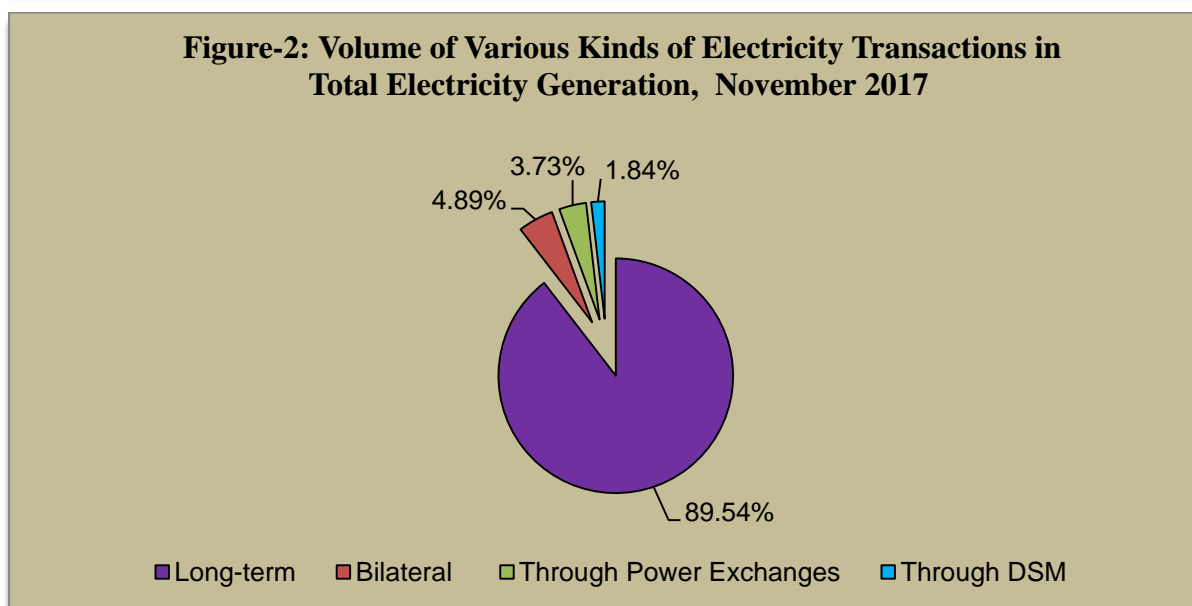
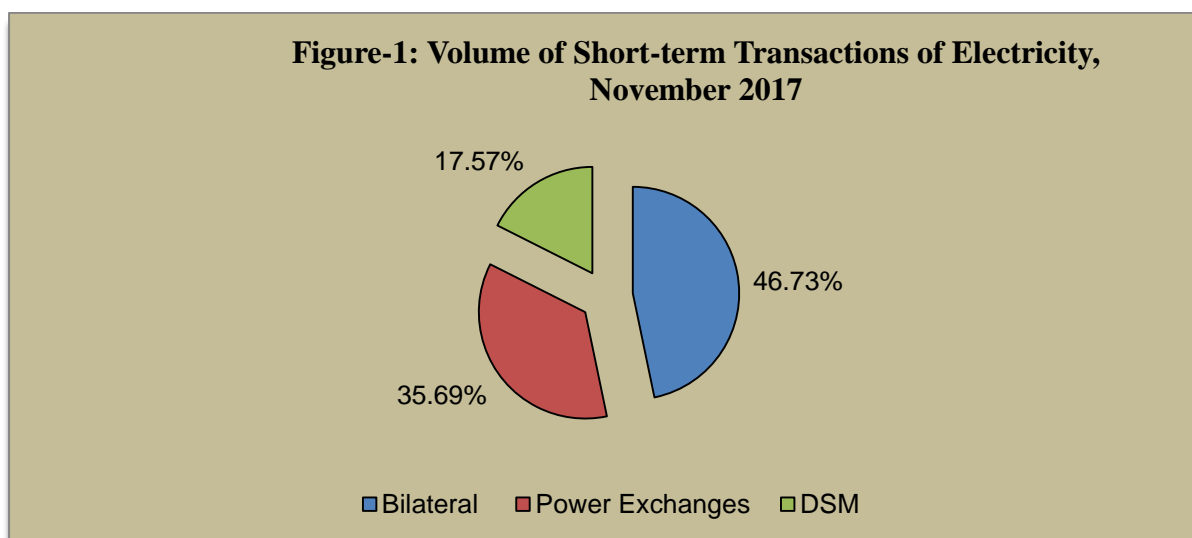


Figure-3: Volume of Short-term Transactions of Electricity, November 2017 (Day-wise)

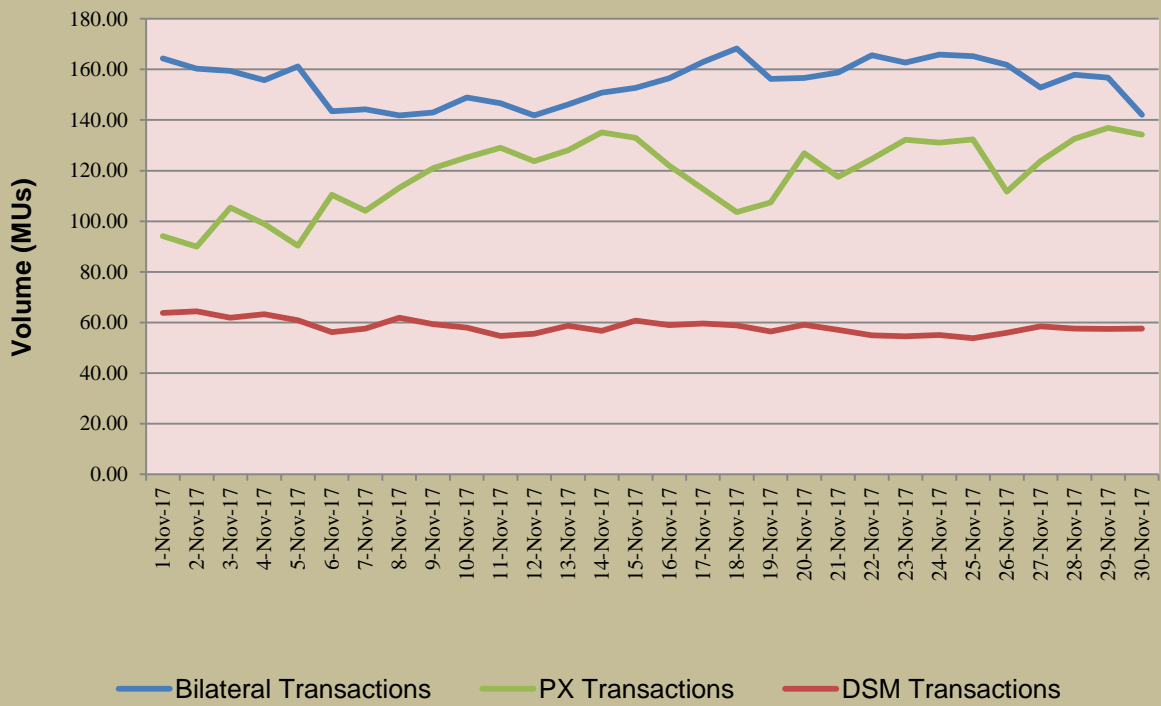


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, NOVEMBER 2017			
Sr.No	Name of the Trading Licensee	% Share in total Volume transacted by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd.	44.06	0.1941
2	NTPC Vidyut Vyapar Nigam Ltd.	13.26	0.0176
3	Manikaran Power Ltd.	7.66	0.0059
4	Tata Power Trading Company (P) Ltd.	6.54	0.0043
5	Mittal Processors (P) Ltd.	6.45	0.0042
6	GMR Energy Trading Ltd.	5.08	0.0026
7	JSW Power Trading Company Ltd	4.37	0.0019
8	Arunachal Pradesh Power Corporation (P) ltd	3.21	0.0010
9	Adani Enterprises Ltd.	2.94	0.0009
10	Knowledge Infrastructure Systems (P) Ltd	1.83	0.0003
11	National Energy Trading & Services Ltd.	0.96	0.0001
12	Jaiprakash Associates Ltd.	0.82	0.0001
13	RPG Power Trading Company Ltd.	0.53	0.0000
14	Jindal Poly Films Limited	0.53	0.0000
15	Statkraft Markets Pvt. Ltd.	0.45	0.0000
16	Customized Energy Solutions India (P) Ltd.	0.35	0.0000
17	Shree Cement Ltd.	0.32	0.0000
18	Instinct Infra & Power Ltd.	0.29	0.0000
19	Essar Electric Power Development Corp. Ltd.	0.19	0.0000
20	My Home Power Private Ltd.	0.13	0.0000
21	Gita Power & Infrastructure Private Limited	0.03	0.0000
22	Parshavanath Power Projects Private Limited	0.01	0.0000
23	Phillip Commodities India (P) Ltd.	0.01	0.0000
24	Atria Energy Services Pvt. Ltd.	0.00	0.0000
TOTAL		100.00%	0.2330
Top 5 trading licensees		77.97%	
<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>			

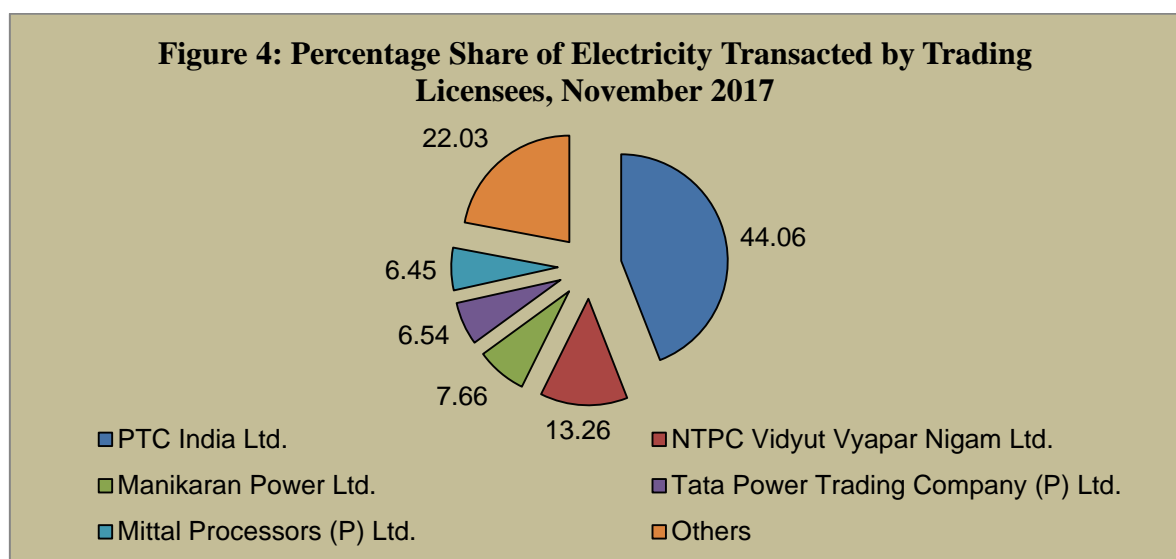


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, NOVEMBER 2017		
Sr.No	Item	Sale Price of Traders (₹/kWh)
1	Minimum	2.84
2	Maximum	6.40
3	Weighted Average	3.55

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), NOVEMBER 2017		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	3.48
2	PEAK	5.54
3	OFF PEAK	3.77

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, NOVEMBER 2017			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	1.10	2.15
2	Maximum	9.75	7.69
3	Weighted Average	3.76	4.04

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, NOVEMBER 2017			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	20.01	4.24
2	Day Ahead Contingency Contracts	297.36	3.73
	Total	317.37	3.76

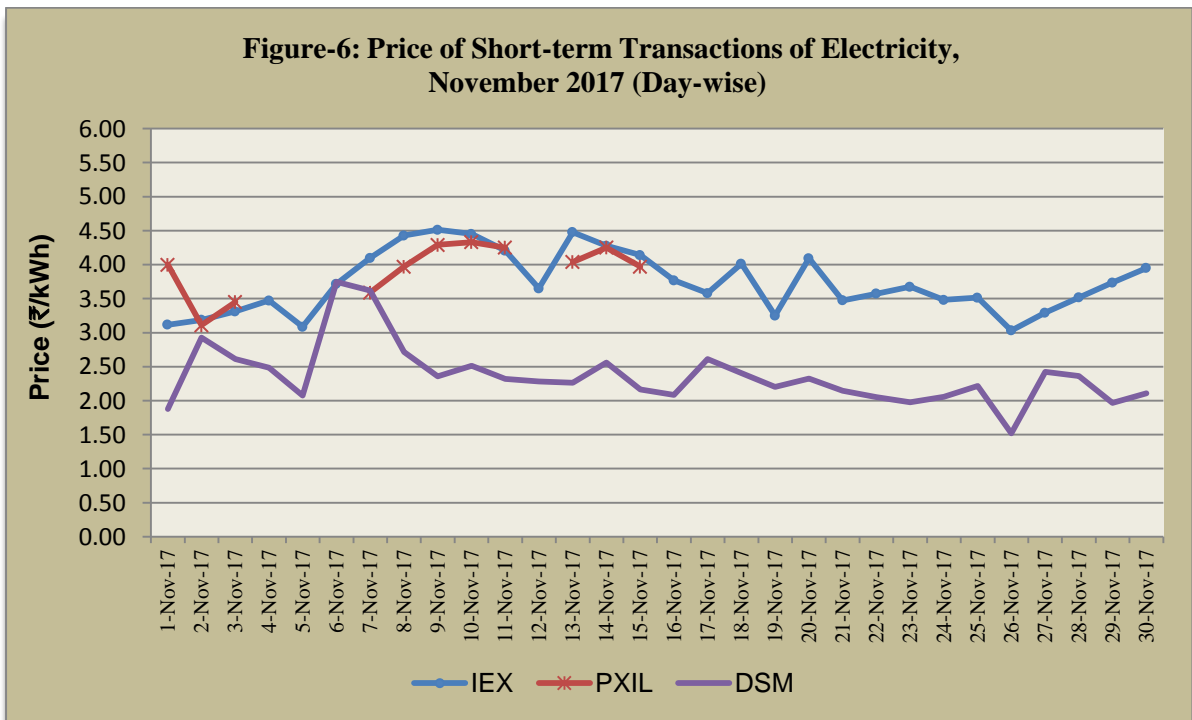
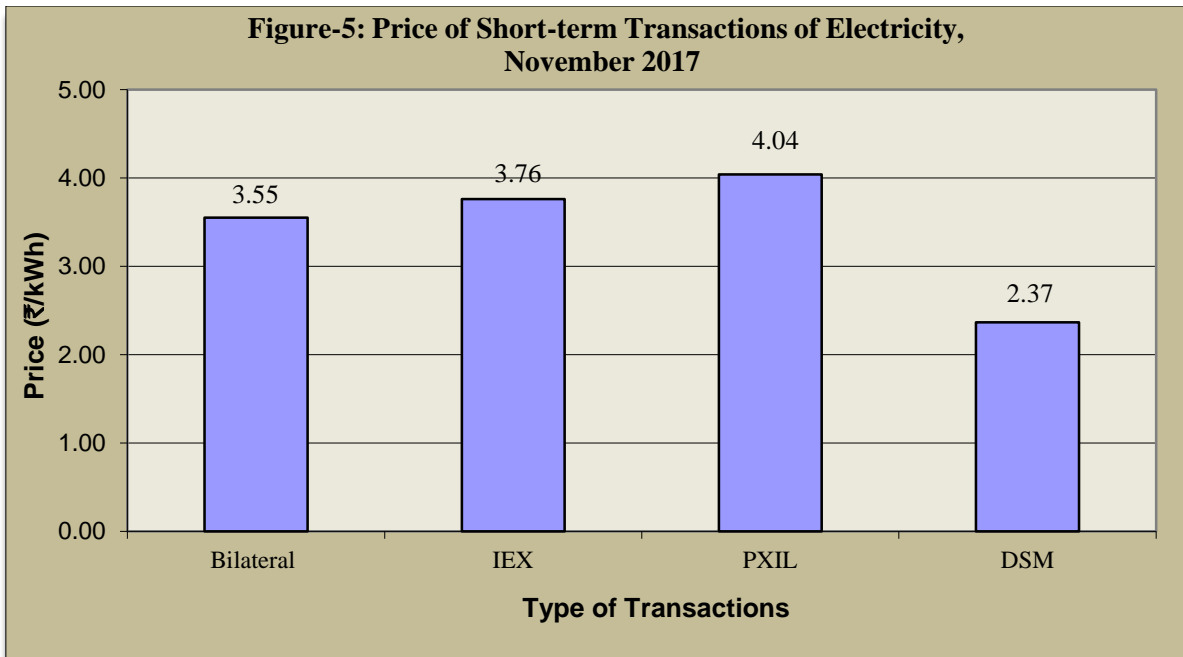
Source: IEX

Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, NOVEMBER 2017			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	53.31	3.93
2	Any Day(s) Contracts	36.12	4.04
3	Weekly Contracts	7.56	3.74
	Total	96.99	3.96

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH DSM, NOVEMBER 2017		
Sr.No	Item	Price in All India Grid (₹/kWh)
1	Minimum	0.00
2	Maximum	8.03
3	Average	2.37

Source: NLDC



Note: For PXIL, on 4th-6th, 12th and 16th-30th November 2017, there were no sellers in Day Ahead Product, hence, discontinuous price curve.

Table-9: VOLUME OF ELECTRICITY SOLD THROUGH BILATERAL, NOVEMBER 2017		
Name of the Entity	Volume of Sale (MUs)	% of Volume
HARYANA	708.61	15.27
SEMBCORP	544.42	11.73
PUNJAB	542.74	11.70
DELHI	522.63	11.26
JAYPEE NIGRIE	312.06	6.73
JINDAL STAGE-II	230.16	4.96
UTTAR PRADESH	179.59	3.87
CHHATTISGARH	174.83	3.77
ESSAR POWER	158.23	3.41
WEST BENGAL	138.11	2.98
GUJARAT	134.54	2.90
JINDAL POWER	134.08	2.89
COASTGEN	133.59	2.88
ILF&S	85.10	1.83
ADHUNIK POWER LTD	75.40	1.63
THERMAL POWERTECH	49.97	1.08
ONGC PALATANA	46.80	1.01
RAJASTHAN	42.89	0.92
MB POWER	40.60	0.88
DB POWER	39.71	0.86
ANDHRA PRADESH	35.50	0.77
DVC	32.11	0.69
SHREE CEMENT	31.88	0.69
DAGACHU	31.27	0.67
JITPL	26.98	0.58
HIMACHAL PRADESH	25.96	0.56
TELANGANA	24.03	0.52
BALCO	21.97	0.47
J & K	18.55	0.40
DIKCHU HEP	14.55	0.31
MAHARASHTRA	13.05	0.28
KARNATAKA	12.34	0.27
MEGHALAYA	11.28	0.24
LANKO_AMK	9.54	0.21
ACBIL	8.10	0.17
MP	5.86	0.13
TAMIL NADU	5.35	0.12
SIKKIM	4.14	0.09
MARUTI COAL	3.68	0.08
TASHIDENG HEP	2.29	0.05
NAGALAND	2.08	0.04
GMR KAMALANGA	1.72	0.04
SPECTRUM	1.47	0.03
JHABUA POWER_MP	0.92	0.02
MEENAKSHI	0.53	0.01
ODISHA	0.36	0.01
TOTAL	4639.53	100.00
Volume Sold by top 5 Regional Entities	2630.45	56.70

Table-10: VOLUME OF ELECTRICITY PURCHASED THROUGH BILATERAL, NOVEMBER 2017		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
MP	1019.62	21.93
MAHARASHTRA	649.04	13.96
TAMIL NADU	597.60	12.85
J & K	390.01	8.39
KARNATAKA	291.47	6.27
CHHATTISGARH	288.25	6.20
HIMACHAL PRADESH	247.02	5.31
ANDHRA PRADESH	154.40	3.32
ESSAR STEEL	148.23	3.19
BANGLADESH	129.74	2.79
RAJASTHAN	106.12	2.28
UTTAR PRADESH	106.04	2.28
ASSAM	93.17	2.00
JHARKHAND	77.28	1.66
NEPAL(NVVN)	62.17	1.34
UTTARAKHAND	56.22	1.21
GOA	36.33	0.78
ODISHA	35.56	0.76
WEST BENGAL	32.36	0.70
KERALA	28.67	0.62
GUJARAT	28.34	0.61
HARYANA	20.36	0.44
TELANGANA	11.72	0.25
BIHAR	10.61	0.23
DELHI	10.02	0.22
DAMAN AND DIU	9.36	0.20
DVC	6.41	0.14
MEGHALAYA	2.26	0.05
MANIPUR	1.66	0.04
PUNJAB	0.40	0.01
TOTAL	4650.44	100.00
Volume Purchased by top 5 Regional Entities	2947.73	63.39

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

Name of the Entity	Volume of Sale (MUs)	% of Volume
TELANGANA	283.58	7.98
TEESTA STG3	264.44	7.45
PUNJAB	247.24	6.96
RAJASTHAN	219.83	6.19
GUJARAT	196.31	5.53
SKS POWER	127.12	3.58
KARNATAKA	123.09	3.47
ASSAM	117.10	3.30
DELHI	112.65	3.17
MAHARASHTRA	105.60	2.97
HIMACHAL PRADESH	99.47	2.80
MP	91.22	2.57
JINDAL STAGE-II	82.84	2.33
TRIPURA	80.88	2.28
ANDHRA PRADESH	79.12	2.23
KARCHAM WANGTOO	77.18	2.17
TRN ENERGY	77.02	2.17
NLC	75.39	2.12
DB POWER	61.33	1.73
SPECTRUM	59.35	1.67
THERMAL POWERTECH	57.61	1.62
CHHATTISGARH	55.65	1.57
WEST BENGAL	51.71	1.46
ACBIL	50.16	1.41
JITPL	48.28	1.36
SHREE CEMENT	45.85	1.29
MB POWER	41.36	1.16
SEMBCORP	40.52	1.14
HARYANA	36.11	1.02
DVC	33.37	0.94
J & K	33.13	0.93
JORETHANG	31.86	0.90
JINDAL POWER	27.10	0.76
TASHIDENG HEP	26.45	0.74
ODISHA	26.06	0.73
UTTAR PRADESH	26.06	0.73
SIKKIM	25.74	0.72
UTTARAKHAND	24.94	0.70
MEGHALAYA	23.11	0.65
MIZORAM	21.57	0.61
JAYPEE NIGRIE	20.11	0.57
AD HYDRO	18.92	0.53
BIHAR	18.63	0.52
CHUZACHEN HEP	18.52	0.52
SAINJ HEP	16.28	0.46
GMR KAMALANGA	15.97	0.45
NTPC STATIONS-ER	15.19	0.43
MANIPUR	14.87	0.42
TAMIL NADU	14.70	0.41
NTPC STATIONS-NER	13.46	0.38

MARUTI COAL	12.50	0.35
ESSAR POWER	10.85	0.31
CHANDIGARH	10.77	0.30
NTPC STATIONS-SR	6.46	0.18
NJPC	6.46	0.18
KERALA	4.66	0.13
ILF&S	3.88	0.11
DADRA & NAGAR HAVELI	3.79	0.11
DIKCHU HEP	3.57	0.10
NAGALAND	3.05	0.09
GOA	2.97	0.08
ONGC PALATANA	2.74	0.08
MALANA	1.27	0.04
COASTGEN	1.27	0.04
MAITHON POWER LTD	1.26	0.04
LANCO BUDHIL	1.01	0.03
MEENAKSHI	0.68	0.02
DHARIWAL POWER	0.42	0.01
NTPC STATIONS-NR	0.05	0.00
NTPC STATIONS-WR	0.02	0.00
EMCO	0.01	0.00
TOTAL	3551.73	100.00
Volume sold by top 5 Regional Entities	1211.40	34.11

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

Name of the Entity	Volume of Purchase (MUs)	% of Volume
GUJARAT	943.69	26.57
MAHARASHTRA	395.12	11.12
ANDHRA PRADESH	267.90	7.54
WEST BENGAL	226.56	6.38
KARNATAKA	225.36	6.35
TELANGANA	199.21	5.61
BIHAR	195.60	5.51
ESSAR STEEL	155.22	4.37
RAJASTHAN	137.84	3.88
TAMIL NADU	131.23	3.69
MP	122.74	3.46
J & K	118.64	3.34
ODISHA	99.94	2.81
UTTARAKHAND	94.83	2.67
ASSAM	47.74	1.34
HARYANA	33.71	0.95
HIMACHAL PRADESH	23.04	0.65
GOA	22.07	0.62
DAMAN AND DIU	21.61	0.61
DVC	17.33	0.49
DELHI	16.97	0.48
MEGHALAYA	15.76	0.44
KERALA	15.62	0.44
CHHATTISGARH	12.34	0.35
DADRA & NAGAR HAVELI	5.66	0.16
PONDICHERRY	2.71	0.08
CHANDIGARH	2.51	0.07
MANIPUR	0.62	0.02
PUNJAB	0.13	0.00
TOTAL	3551.73	100.00
Volume purchased by top 5 Regional Entities	2058.63	57.96

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

Name of the Entity	Volume of Underdrawal (MUs)	% of Volume
NTPC STATIONS-WR	147.12	9.30
SKS POWER	118.98	7.52
TELANGANA	107.93	6.83
UTTAR PRADESH	99.05	6.26
SASAN UMPP	84.48	5.34
NTPC STATIONS-NR	64.80	4.10
GUJARAT	54.28	3.43
MAHARASHTRA	53.69	3.40
ANDHRA PRADESH	50.02	3.16
MP	42.52	2.69
CHHATTISGARH	41.47	2.62
KARNATAKA	38.97	2.46
PUNJAB	38.26	2.42
UTTARAKHAND	35.26	2.23
TAMIL NADU	34.78	2.20
RAJASTHAN	33.09	2.09
NLC	32.62	2.06
J & K	25.97	1.64
BIHAR	24.70	1.56
NTPC STATIONS-ER	24.39	1.54
ESSAR STEEL	23.49	1.49
NTPC STATIONS-SR	23.09	1.46
HARYANA	22.50	1.42
DELHI	20.37	1.29
EMCO	19.49	1.23
JINDAL STAGE-II	18.54	1.17
JAYPEE NIGRIE	18.35	1.16
DVC	16.18	1.02
GMR KAMALANGA	16.04	1.01
NEPAL(NVVN)	13.27	0.84
PONDICHERRY	13.00	0.82
GOA	10.22	0.65
HIMACHAL PRADESH	9.24	0.58
LANKO_AMK	8.77	0.55
JHARKHAND	8.53	0.54
ASSAM	8.38	0.53
NJPC	8.03	0.51
TEESTA HEP	7.68	0.49
TRIPURA	7.65	0.48
JINDAL POWER	6.97	0.44
JITPL	6.88	0.44
TRN ENERGY	6.58	0.42
CGPL	6.50	0.41
NSPCL	6.24	0.39
TEESTA STG3	6.21	0.39
MB POWER	5.90	0.37
NEEPCO STATIONS	5.64	0.36
KARCHAM WANGTOO	5.49	0.35
WEST BENGAL	5.40	0.34
BANGLADESH	5.38	0.34

MEGHALAYA	5.04	0.32
BALCO	4.92	0.31
MANIPUR	4.74	0.30
CHANDIGARH	4.69	0.30
ACBIL	4.04	0.26
NAGALAND	3.86	0.24
DCPP	3.80	0.24
THERMAL POWERTECH	3.74	0.24
KSK MAHANADI	3.36	0.21
ESSAR POWER	3.26	0.21
DB POWER	3.21	0.20
MIZORAM	2.90	0.18
URI-2	2.60	0.16
MAITHON POWER LTD	2.42	0.15
RKM POWER	2.35	0.15
ODISHA	2.34	0.15
DADRA & NAGAR HAVELI	2.23	0.14
KERALA	2.23	0.14
ADHUNIK POWER LTD	1.97	0.12
RANGANADI HEP	1.94	0.12
COASTGEN	1.93	0.12
SIKKIM	1.85	0.12
RANGIT HEP	1.63	0.10
ILF&S	1.60	0.10
AD HYDRO	1.49	0.09
JHABUA POWER_MP	1.45	0.09
JORETHANG	1.45	0.09
CHUZACHEN HEP	1.45	0.09
SHREE CEMENT	1.39	0.09
RGPPL (DABHOL)	1.39	0.09
ARUNACHAL PRADESH	1.33	0.08
SEMBCORP	1.26	0.08
TASHIDENG HEP	1.03	0.06
DOYANG HEP	0.76	0.05
LOKTAK	0.68	0.04
NETCL VALLUR	0.67	0.04
DIKCHU HEP	0.46	0.03
LANCO BUDHIL	0.46	0.03
DHARIWAL POWER	0.38	0.02
DAMAN AND DIU	0.22	0.01
MALANA	0.20	0.01
DAGACHU	0.05	0.00
MEENAKSHI	0.02	0.00
TOTAL	1581.18	100.00
Volume Exported by top 5 Regional Entities	557.55	35.26

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

Name of the Entity	Volume of Over drawal (MUs)	% of Volume
ODISHA	162.15	9.87
RAJASTHAN	105.15	6.40
TAMIL NADU	84.95	5.17
WEST BENGAL	83.28	5.07
DVC	72.99	4.44
MAHARASHTRA	72.15	4.39
HARYANA	64.99	3.95
GUJARAT	62.13	3.78
KARNATAKA	61.32	3.73
MP	60.45	3.68
NEPAL(NVVN)	54.89	3.34
BIHAR	53.99	3.28
NTPC STATIONS-ER	42.02	2.56
UTTAR PRADESH	39.08	2.38
KERALA	38.69	2.35
HIMACHAL PRADESH	38.14	2.32
NTPC STATIONS-SR	35.96	2.19
JHARKHAND	32.90	2.00
PUNJAB	30.10	1.83
ANDHRA PRADESH	27.26	1.66
NETCL VALLUR	26.42	1.61
J & K	26.03	1.58
ASSAM	24.46	1.49
DAMAN AND DIU	22.01	1.34
CHHATTISGARH	20.11	1.22
ESSAR STEEL	19.57	1.19
NLC	18.67	1.14
DELHI	18.02	1.10
SEMBCORP	17.95	1.09
DADRA & NAGAR HAVELI	17.81	1.08
CGPL	13.48	0.82
ARUNACHAL PRADESH	12.94	0.79
UTTARAKHAND	11.21	0.68
TELANGANA	9.62	0.59
THERMAL POWERTECH	8.58	0.52
NTPC STATIONS-NR	8.49	0.52
JORETHANG	8.46	0.51
GOA	8.44	0.51
CHANDIGARH	7.99	0.49
SIKKIM	7.89	0.48
ILF&S	7.29	0.44
JITPL	6.51	0.40
BALCO	6.26	0.38
MB POWER	5.08	0.31
TRIPURA	4.75	0.29
JHABUA POWER_MP	4.70	0.29
JINDAL STAGE-II	4.51	0.27

MIZORAM	4.48	0.27
TASHIDENG HEP	4.37	0.27
GMR KAMALANGA	3.50	0.21
NJPC	3.21	0.20
BANGLADESH	2.83	0.17
NAGALAND	2.65	0.16
RGPPL (DABHOL)	2.56	0.16
DB POWER	2.56	0.16
MEGHALAYA	2.53	0.15
ACBIL	2.43	0.15
DAGACHU	2.40	0.15
KARCHAM WANGTOO	2.22	0.14
MAITHON POWER LTD	2.10	0.13
SHREE CEMENT	1.96	0.12
JINDAL POWER	1.83	0.11
SIMHAPURI	1.82	0.11
MANIPUR	1.82	0.11
DHARIWAL POWER	1.56	0.10
GMR CHATTISGARH	1.54	0.09
RKM POWER	1.52	0.09
NSPCL	1.44	0.09
TRN ENERGY	1.44	0.09
COASTGEN	1.37	0.08
DIKCHU HEP	1.31	0.08
KSK MAHANADI	1.28	0.08
JAYPEE NIGRIE	1.14	0.07
PONDICHERRY	1.12	0.07
RANGANADI HEP	1.10	0.07
ESSAR POWER	1.04	0.06
ADHUNIK POWER LTD	0.97	0.06
CHUZACHEN HEP	0.93	0.06
TEESTA STG3	0.92	0.06
LANKO_AMK	0.87	0.05
SKS POWER	0.85	0.05
NEEPCO STATIONS	0.84	0.05
EMCO	0.77	0.05
MALANA	0.76	0.05
MEENAKSHI	0.75	0.05
AD HYDRO	0.75	0.05
LANCO BUDHIL	0.72	0.04
LANKO KONDAPALLI	0.67	0.04
SASAN UMPP	0.59	0.04
DCPP	0.50	0.03
URI-2	0.50	0.03
RANGIT HEP	0.46	0.03
KORBA WEST POWER	0.40	0.02
DOYANG HEP	0.17	0.01
LOKTAK	0.14	0.01
TEESTA HEP	0.05	0.00
TOTAL	1643.54	100.00
Volume Imported by top 5 Regional Entities	508.51	30.94

Table-15: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY-WISE), NOVEMBER 2017		
Sr.No.	Name of the Entity	Total volume of net short-term transactions of electricity*
1	MP	1063.21
2	MAHARASHTRA	943.97
3	TAMIL NADU	758.95
4	GUJARAT	649.03
5	J & K	457.04
6	KARNATAKA	403.75
7	ESSAR STEEL	299.52
8	ANDHRA PRADESH	284.92
9	ODISHA	268.89
10	BIHAR	216.87
11	HIMACHAL PRADESH	173.54
12	WEST BENGAL	146.98
13	BANGLADESH	127.19
14	NEPAL(NV/VN)	103.79
15	UTTARAKHAND	102.06
16	JHARKHAND	101.65
17	KERALA	76.08
18	GOA	53.65
19	RAJASTHAN	53.29
20	DAMAN AND DIU	52.77
21	CHHATTISGARH	48.76
22	ASSAM	39.88
23	NETCL VALLUR	25.75
24	DADRA & NAGAR HAVELI	17.45
25	DVC	15.07
26	ARUNACHAL PRADESH	11.61
27	CGPL	6.97
28	NTPC STATIONS-SR	6.41
29	NTPC STATIONS-ER	2.45
30	JHABUA POWER_MP	2.33
31	SIMHAPURI	1.82
32	GMR CHATTISGARH	1.54
33	RGPPL (DABHOL)	1.17
34	DHARIWAL POWER	0.77
35	MALANA	-0.72
36	LANCO BUDHIL	-0.75
37	RKM POWER	-0.83
38	RANGANADI HEP	-0.84
39	RANGIT HEP	-1.16
40	MAITHON POWER LTD	-1.58
41	KSK MAHANADI	-2.08
42	URI-2	-2.10
43	DCPP	-3.30
44	NEEPCO STATIONS	-4.80
45	NSPCL	-4.80
46	CHANDIGARH	-4.95
47	NAGALAND	-6.34
48	TEESTA HEP	-7.63
49	PONDICHERY	-9.17
50	NJPC	-11.27

51	NTPC STATIONS-NER	-13.46
52	MANIPUR	-15.51
53	MARUTI COAL	-16.18
54	SAINJ HEP	-16.28
55	DIKCHU HEP	-17.27
56	LANKO_AMK	-17.43
57	EMCO	-18.73
58	MEGHALAYA	-18.88
59	CHUZACHEN HEP	-19.04
60	AD HYDRO	-19.66
61	MIZORAM	-19.99
62	BALCO	-20.63
63	SIKKIM	-23.85
64	JORETHANG	-24.85
65	TASHIDENG HEP	-25.40
66	DAGACHU	-28.91
67	GMR KAMALANGA	-30.23
68	ONGC PALATANA	-49.54
69	NTPC STATIONS-NR	-56.37
70	ACBIL	-59.87
71	SPECTRUM	-60.82
72	JITPL	-75.63
73	ADHUNIK POWER LTD	-76.40
74	SHREE CEMENT	-77.16
75	KARCHAM WANGTOO	-80.46
76	TRN ENERGY	-82.16
77	MB POWER	-82.79
78	ILF&S	-83.29
79	TRIPURA	-83.78
80	SASAN UMPP	-83.89
81	NLC	-89.34
82	DB POWER	-101.68
83	THERMAL POWERTECH	-102.74
84	COASTGEN	-135.41
85	NTPC STATIONS-WR	-147.14
86	UTTAR PRADESH	-159.58
87	JINDAL POWER	-166.32
88	ESSAR POWER	-171.29
89	TELANGANA	-194.99
90	SKS POWER	-245.25
91	TEESTA STG3	-269.73
92	JINDAL STAGE-II	-327.03
93	JAYPEE NIGRIE	-349.38
94	SEMBCORP	-568.25
95	DELHI	-610.63
96	HARYANA	-648.15
97	PUNJAB	-797.62
* 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, NOVEMBER 2017			
	Details of Congestion	IEX	PXIL
A	Unconstrained Cleared Volume* (MUs)	3527.08	27.30
B	Actual Cleared Volume and hence scheduled (MUs)	3527.08	27.30
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), NOVEMBER 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-Nov-17	129.09	35.21	92.68	1.50	63.83	
2-Nov-17	125.30	35.02	88.42	1.50	64.44	
3-Nov-17	124.07	35.35	103.94	1.50	61.81	
4-Nov-17	120.20	35.51	98.94	0.00	63.28	
5-Nov-17	126.10	35.13	90.33	0.00	60.84	
6-Nov-17	107.86	35.57	110.42	0.00	56.24	
7-Nov-17	108.77	35.44	102.97	1.20	57.64	
8-Nov-17	99.28	42.51	110.79	2.40	61.86	
9-Nov-17	99.37	43.61	117.41	3.60	59.32	
10-Nov-17	104.65	44.20	121.66	3.60	57.95	
11-Nov-17	103.41	43.20	125.45	3.60	54.71	
12-Nov-17	99.90	41.88	123.76	0.00	55.58	
13-Nov-17	106.21	39.94	124.42	3.60	58.69	
14-Nov-17	111.39	39.40	132.79	2.40	56.68	
15-Nov-17	106.67	46.07	130.54	2.40	60.70	
16-Nov-17	109.10	47.42	121.95	0.00	58.97	
17-Nov-17	111.53	51.38	112.75	0.00	59.57	
18-Nov-17	118.43	49.78	103.66	0.00	58.81	
19-Nov-17	109.93	46.29	107.46	0.00	56.45	
20-Nov-17	107.99	48.60	126.92	0.00	59.10	
21-Nov-17	109.84	49.00	117.53	0.00	57.03	
22-Nov-17	116.66	48.97	124.68	0.00	54.87	
23-Nov-17	120.25	42.44	132.21	0.00	54.50	
24-Nov-17	123.41	42.48	131.12	0.00	55.08	
25-Nov-17	122.79	42.42	132.36	0.00	53.77	
26-Nov-17	120.93	40.90	111.76	0.00	55.89	
27-Nov-17	111.79	41.01	123.74	0.00	58.42	
28-Nov-17	116.23	41.67	132.59	0.00	57.60	
29-Nov-17	114.28	42.46	136.96	0.00	57.41	
30-Nov-17	102.19	39.93	134.24	0.00	57.53	
Total	3387.64	1262.80	3524.43	27.30	1748.57	95122.18

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.

Note: The data on total electricity generation (day-wise) could not be accessed from CEA website.

Table-18: PRICE OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (DAY-WISE)(₹/kWh), NOVEMBER, 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-Nov-17	1.96	4.66	3.12	4.00	4.00	4.00	0.00	3.45	1.88
2-Nov-17	1.50	4.50	3.19	2.49	4.42	3.11	0.36	5.95	2.93
3-Nov-17	2.00	4.82	3.31	2.85	4.72	3.45	0.00	5.95	2.61
4-Nov-17	2.50	5.10	3.47	0.00	0.00	0.00	0.00	5.11	2.48
5-Nov-17	2.00	4.29	3.09	0.00	0.00	0.00	0.00	3.45	2.08
6-Nov-17	2.20	5.55	3.72	0.00	0.00	0.00	1.78	6.36	3.75
7-Nov-17	2.80	6.55	4.10	2.94	4.52	3.59	1.42	8.03	3.62
8-Nov-17	3.33	7.65	4.43	2.84	6.05	3.97	0.00	5.11	2.72
9-Nov-17	2.85	9.75	4.51	3.14	6.36	4.29	0.00	5.95	2.36
10-Nov-17	2.60	9.00	4.45	3.15	6.36	4.33	0.00	5.95	2.51
11-Nov-17	2.60	9.00	4.21	2.67	7.69	4.25	0.00	4.91	2.32
12-Nov-17	2.25	4.50	3.65	0.00	0.00	0.00	0.00	5.11	2.28
13-Nov-17	2.53	9.00	4.48	2.89	6.11	4.04	0.00	5.74	2.26
14-Nov-17	2.25	7.75	4.28	2.54	7.25	4.25	0.00	5.32	2.56
15-Nov-17	2.20	8.10	4.14	2.15	7.07	3.97	0.00	5.32	2.16
16-Nov-17	1.70	6.30	3.77	0.00	0.00	0.00	0.00	5.32	2.08
17-Nov-17	1.35	5.10	3.58	0.00	0.00	0.00	0.71	5.11	2.61
18-Nov-17	2.00	7.50	4.01	0.00	0.00	0.00	0.00	5.11	2.41
19-Nov-17	2.00	4.20	3.25	0.00	0.00	0.00	0.00	5.32	2.20
20-Nov-17	1.75	7.54	4.09	0.00	0.00	0.00	0.00	5.32	2.33
21-Nov-17	1.75	5.00	3.47	0.00	0.00	0.00	0.00	3.45	2.15
22-Nov-17	1.75	6.10	3.57	0.00	0.00	0.00	0.00	3.45	2.05
23-Nov-17	1.10	6.50	3.67	0.00	0.00	0.00	0.00	4.91	1.98
24-Nov-17	1.75	5.10	3.48	0.00	0.00	0.00	0.00	4.91	2.06
25-Nov-17	2.00	5.49	3.51	0.00	0.00	0.00	0.00	5.32	2.21
26-Nov-17	1.75	4.25	3.03	0.00	0.00	0.00	0.00	3.45	1.52
27-Nov-17	1.75	5.00	3.29	0.00	0.00	0.00	0.00	5.74	2.42
28-Nov-17	1.75	5.80	3.52	0.00	0.00	0.00	0.00	5.74	2.36
29-Nov-17	2.00	6.00	3.74	0.00	0.00	0.00	0.00	4.91	1.97
30-Nov-17	1.91	6.80	3.95	0.00	0.00	0.00	0.00	5.11	2.11
	1.10#	9.75#	3.76	2.15#	7.69#	4.04	0.00#	8.03#	2.37

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), NOVEMBER 2017

Name of the Entity	Through Bilateral			Through Power Exchange			Through DSM with Regional Grid			Total Net***
	Sale	Purchase	Net**	Sale	Purchase	Net**	Import (Over Drawl)	Export (Under Drawl)	Net**	
PUNJAB	542.7	0.4	-542.3	247.2	0.1	-247.1	30.1	38.2	-8.1	-797.6
HARYANA	708.6	20.3	-688.2	36.1	33.7	-2.3	64.9	22.5	42.4	-648.1
RAJASTHAN	42.8	106.1	63.2	219.8	137.8	-82.0	105.1	33.0	72.0	53.2
DELHI	522.6	10.0	-512.6	112.6	16.9	-95.6	18.0	20.3	-2.3	-610.6
UP	179.5	106.0	-73.5	26.0	0.0	-26.0	39.0	99.0	-59.9	-159.5
UTTARAKHAND	0.0	56.2	56.2	24.9	94.8	69.8	11.2	35.2	-24.0	102.0
HP	25.9	247.0	221.0	99.4	23.0	-76.4	38.1	9.2	28.9	173.5
J & K	18.5	390.0	371.4	33.1	118.6	85.5	26.0	25.9	0.0	457.0
CHANDIGARH	0.0	0.0	0.0	10.7	2.5	-8.2	7.9	4.6	3.3	-4.9
MP	5.8	1019.6	1013.7	91.2	122.7	31.5	60.4	42.5	17.9	1063.2
MAHARASHTRA	13.0	649.0	635.9	105.6	395.1	289.5	72.1	53.6	18.4	943.9
GUJARAT	134.5	28.3	-106.2	196.3	943.6	747.3	62.1	54.2	7.8	649.0
CHHATTISGARH	174.8	288.2	113.4	55.6	12.3	-43.3	20.1	41.4	-21.3	48.7
GOA	0.0	36.3	36.3	2.9	22.0	19.1	8.4	10.2	-1.7	53.6
DAMAN & DIU	0.0	9.3	9.3	0.0	21.6	21.6	22.0	0.2	21.7	52.7
D&N HAVELI	0.0	0.0	0.0	3.7	5.6	1.8	17.8	2.2	15.5	17.4
ANDHRA PRA	35.5	154.4	118.9	79.1	267.9	188.7	27.2	50.0	-22.7	284.9
KARNATAKA	12.3	291.4	279.1	123.0	225.3	102.2	61.3	38.9	22.3	403.7
KERALA	0.0	28.6	28.6	4.6	15.6	10.9	38.6	2.2	36.4	76.0
TAMIL NADU	5.3	597.6	592.2	14.7	131.2	116.5	84.9	34.7	50.1	758.9
PONDICHERRY	0.0	0.0	0.0	0.0	2.7	2.7	1.1	13.0	-11.8	-9.1
TELANGANA	24.0	11.7	-12.3	283.5	199.2	-84.3	9.6	107.9	-98.3	-194.9
WEST BENGAL	138.1	32.3	-105.7	51.7	226.5	174.8	83.2	5.4	77.8	146.9
ODISHA	0.3	35.5	35.2	26.0	99.9	73.8	162.1	2.3	159.8	268.8
BIHAR	0.0	10.6	10.6	18.6	195.6	176.9	53.9	24.7	29.2	216.8
JHARKHAND	0.0	77.2	77.2	0.0	0.0	0.0	32.9	8.5	24.3	101.6
SIKKIM	4.1	0.0	-4.1	25.7	0.0	-25.7	7.8	1.8	6.0	-23.8
DVC	32.1	6.4	-25.7	33.3	17.3	-16.0	72.9	16.1	56.8	15.0
ARUNACHAL P	0.0	0.0	0.0	0.0	0.0	0.0	12.9	1.3	11.6	11.6
ASSAM	0.0	93.1	93.1	117.1	47.7	-69.3	24.4	8.3	16.0	39.8
MANIPUR	0.0	1.6	1.6	14.8	0.6	-14.2	1.8	4.7	-2.9	-15.5
MEGHALAYA	11.2	2.2	-9.0	23.1	15.7	-7.3	2.5	5.0	-2.5	-18.8
MIZORAM	0.0	0.0	0.0	21.5	0.0	-21.5	4.4	2.9	1.5	-19.9
NAGALAND	2.0	0.0	-2.0	3.0	0.0	-3.0	2.6	3.8	-1.2	-6.3
TRIPURA	0.0	0.0	0.0	80.8	0.0	-80.8	4.7	7.6	-2.9	-83.7
NTPC -NR	0.0	0.0	0.0	0.0	0.0	-0.0	8.4	64.8	-56.3	-56.3
NJPC	0.0	0.0	0.0	6.4	0.0	-6.4	3.2	8.0	-4.8	-11.2
AD HYDRO	0.0	0.0	0.0	18.9	0.0	-18.9	0.7	1.4	-0.7	-19.6
KARCHAM WA	0.0	0.0	0.0	77.1	0.0	-77.1	2.2	5.4	-3.2	-80.4
SHREE CEMEN	31.8	0.0	-31.8	45.8	0.0	-45.8	1.9	1.3	0.5	-77.1
URI-2	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.6	-2.1	-2.1
SAINJ HEP	0.0	0.0	0.0	16.2	0.0	-16.2	0.0	0.0	0.0	-16.2
NTPC -WR	0.0	0.0	0.0	0.0	0.0	-0.0	0.0	147.1	-147.1	-147.1
JINDAL POWER	134.0	0.0	-134.0	27.1	0.0	-27.1	1.8	6.9	-5.1	-166.3
LANKO_AMK	9.5	0.0	-9.5	0.0	0.0	0.0	0.8	8.7	-7.8	-17.4

NSPCL	0.0	0.0	0.0	0.0	0.0	0.0	1.4	6.2	-4.8	-4.8
ACBIL	8.1	0.0	-8.1	50.1	0.0	-50.1	2.4	4.0	-1.6	-59.8
BALCO	21.9	0.0	-21.9	0.0	0.0	0.0	6.2	4.9	1.3	-20.6
RGPPL	0.0	0.0	0.0	0.0	0.0	0.0	2.5	1.3	1.1	1.1
CGPL	0.0	0.0	0.0	0.0	0.0	0.0	13.4	6.5	6.9	6.9
DCPP	0.0	0.0	0.0	0.0	0.0	0.0	0.5	3.8	-3.3	-3.3
EMCO	0.0	0.0	0.0	0.0	0.0	-0.0	0.7	19.4	-18.7	-18.7
ESSAR STEEL	0.0	148.2	148.2	0.0	155.2	155.2	19.5	23.4	-3.9	299.5
KSK MAHANAD	0.0	0.0	0.0	0.0	0.0	0.0	1.2	3.3	-2.0	-2.0
ESSAR POWER	158.2	0.0	-158.2	10.8	0.0	-10.8	1.0	3.2	-2.2	-171.2
JINDAL STG-II	230.1	0.0	-230.1	82.8	0.0	-82.8	4.5	18.5	-14.0	-327.0
DB POWER	39.7	0.0	-39.7	61.3	0.0	-61.3	2.5	3.2	-0.6	-101.6
JAYPEE NIGRIE	312.0	0.0	-312.0	20.1	0.0	-20.1	1.1	18.3	-17.2	-349.3
GMR CHATTIS	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	1.5	1.5
MB POWER	40.6	0.0	-40.6	41.3	0.0	-41.3	5.0	5.9	-0.8	-82.7
MARUTI COAL	3.6	0.0	-3.6	12.5	0.0	-12.5	0.0	0.0	0.0	-16.1
SPECTRUM	1.4	0.0	-1.4	59.3	0.0	-59.3	0.0	0.0	0.0	-60.8
JHABUA_MP	0.9	0.0	-0.9	0.0	0.0	0.0	4.7	1.4	3.2	2.3
SASAN UMPP	0.0	0.0	0.0	0.0	0.0	0.0	0.5	84.4	-83.8	-83.8
TRN ENERGY	0.0	0.0	0.0	77.0	0.0	-77.0	1.4	6.5	-5.1	-82.1
SKS POWER	0.0	0.0	0.0	127.1	0.0	-127.1	0.8	118.9	-118.1	-245.2
NTPC -SR	0.0	0.0	0.0	6.4	0.0	-6.4	35.9	23.0	12.8	6.4
COASTGEN	133.5	0.0	-133.5	1.2	0.0	-1.2	1.3	1.9	-0.5	-135.4
THERMAL POW	49.9	0.0	-49.9	57.6	0.0	-57.6	8.5	3.7	4.8	-102.7
ILF&S	85.1	0.0	-85.1	3.8	0.0	-3.8	7.2	1.6	5.6	-83.2
NLC	0.0	0.0	0.0	75.3	0.0	-75.3	18.6	32.6	-13.9	-89.3
SEMBICORP	544.4	0.0	-544.4	40.5	0.0	-40.5	17.9	1.2	16.6	-568.2
NETCL VALLUF	0.0	0.0	0.0	0.0	0.0	0.0	26.4	0.6	25.7	25.7
NTPC -ER	0.0	0.0	0.0	15.1	0.0	-15.1	42.0	24.3	17.6	2.4
ADHUNIK POW	75.4	0.0	-75.4	0.0	0.0	0.0	0.9	1.9	-1.0	-76.4
CHUZACHEN H	0.0	0.0	0.0	18.5	0.0	-18.5	0.9	1.4	-0.5	-19.0
RANGIT HEP	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.6	-1.1	-1.1
GMR KAMALAN	1.7	0.0	-1.7	15.9	0.0	-15.9	3.5	16.0	-12.5	-30.2
JITPL	26.9	0.0	-26.9	48.2	0.0	-48.2	6.5	6.8	-0.3	-75.6
TEESTA HEP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.6	-7.6	-7.6
DAGACHU	31.2	0.0	-31.2	0.0	0.0	0.0	2.4	0.0	2.3	-28.9
JORETHANG	0.0	0.0	0.0	31.8	0.0	-31.8	8.4	1.4	7.0	-24.8
NEPAL(NVVN)	0.0	62.1	62.1	0.0	0.0	0.0	54.8	13.2	41.6	103.7
BANGLADESH	0.0	129.7	129.7	0.0	0.0	0.0	2.8	5.3	-2.5	127.1
TEESTA STG3	0.0	0.0	0.0	264.4	0.0	-264.4	0.9	6.2	-5.2	-269.7
DIKCHU HEP	14.5	0.0	-14.5	3.5	0.0	-3.5	1.3	0.4	0.8	-17.2
TASHIDENG HE	2.2	0.0	-2.2	26.4	0.0	-26.4	4.3	1.0	3.3	-25.4
NTPC STATIONS-NEF	0.0	0.0	0.0	13.4	0.0	-13.4	0.0	0.0	0.0	-13.4
NEEPCO STN	0.0	0.0	0.0	0.0	0.0	0.0	0.8	5.6	-4.8	-4.8
ONGC PALATA	46.8	0.0	-46.8	2.7	0.0	-2.7	0.0	0.0	0.0	-49.5

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 December, 2017

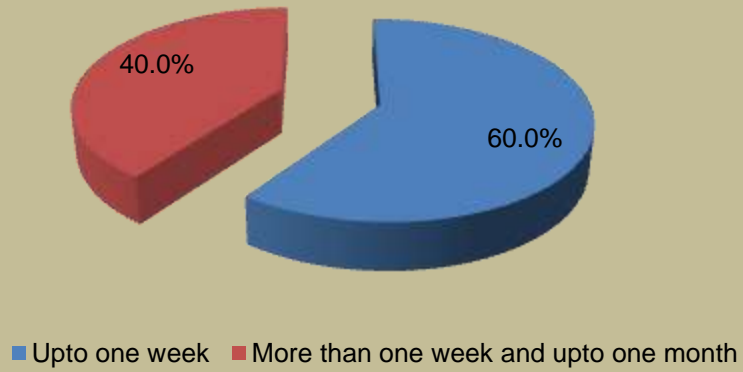


Figure-8: Forward Curve based on Prices of Bilateral Contracts

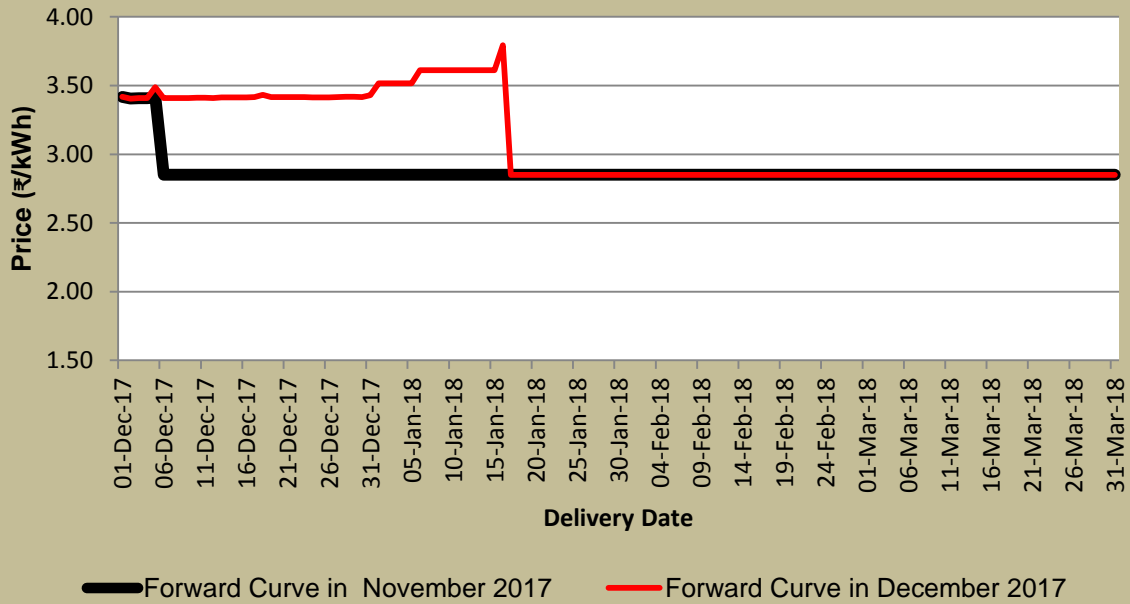


Table-20 : VOLUME AND PRICE OF RENEWABLE ENERGY CERTIFICATES (RECs) TRANSACTED THROUGH POWER EXCHANGES, NOVEMBER 2017			
Sr.No.	Details of REC Transactions	IEX	PXIL
		Non-Solar	Non Solar
A	Volume of Buy Bid	1889982	317640
B	Volume of Sell Bid	9766199	2397026
C	Ratio of Buy Bid to Sell Bid Volume	0.19	0.13
D	Market Clearing Volume (MWh)	1889982	317640
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>