

Monthly Report on Short-term Transactions of Electricity in India

March, 2018



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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
LANCO 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 Stage 3 Hydro Power Project

Introduction

A well-functioning electricity market requires an effective market monitoring process. As part of the market monitoring process, the monthly report on short-term transactions of electricity, is being prepared and posted on the website of CERC since August 2008. Here, “short-term transactions of electricity” refers to the contracts of less than one year period, for electricity transacted (inter-State & intra-State) through inter-State Trading Licensees and directly by the Distribution Licensees, Power Exchanges (Indian Energy Exchange Ltd (IEX) and Power Exchange India Ltd (PXIL), and Deviation Settlement Mechanism (DSM). The objectives of the report are: (i) to observe the trends in volume and price of the short-term transactions of electricity; (ii) to analyse competition among the market players; (iii) to analyse effect of congestion on volume of electricity transacted through power exchanges; (iv) to analyse bilateral contracts executed by traders; (v) to provide information on volume and price of Renewable Energy Certificates (RECs) transacted through power exchanges; and (vi) to disclose/disseminate all relevant market information. The details of the report for the month of **March, 2018** are as under:

I: Volume of Short-term Transactions of Electricity

During March 2018, total electricity generation excluding generation from renewable and captive power plants in India was 105162.02 MUs (Table-1).

Of the total electricity generation, 11653.04 MUs (11.08%) was transacted through short-term, comprising of 5945.66 MUs (5.65%) through bilateral (through traders and term-ahead contracts on power exchanges and directly between distribution companies), followed by 3979.22 MUs (3.78%) through day ahead collective transactions on power exchanges (IEX and PXIL) and 1728.16 MUs (1.64%) through DSM (Table-1 & Figure-2).

Of the total short-term transactions, bilateral constitutes 51.02% (33.71% through traders and term-ahead contracts on power exchanges and 17.31% directly between distribution companies) followed by 34.15% through day ahead collective transactions on power exchanges and 14.83% 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 March, 2018. In March, 2018, 23 trading licensees were engaged in short term trading. Top 5 trading licensees had a share of 77% in the total volume traded by all the licensees. These are PTC India Ltd., NTPC Vidyut Vyapar Nigam Ltd., GMR Energy Trading Ltd., Tata Power Trading Company (P) Ltd. and Manikaran Power 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 0.1698 for the month of March, 2018, which indicates moderate concentration of market power (Table-2).

The volume of electricity transacted through IEX and PXIL in the day ahead market was 3955.29 MUs and 23.93 MUs respectively. The volume of total buy bids and sell bids was 5338.18 MUs and 5393.90 MUs respectively in IEX while the same was 24.58 MUs and 76.51 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 138.19 MUs and 61.59 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 ₹2.85/kWh, ₹6.40/kWh and ₹3.59/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 ₹4.09/kWh, ₹5.25/kWh, and ₹4.58/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 ₹2.00/kWh, ₹8.20/kWh and ₹4.10/kWh respectively in IEX and ₹2.60/kWh, ₹5.12/kWh and ₹3.90/kWh respectively in PXIL. (Table-5).

The price of electricity transacted through IEX and PXIL in the term-ahead market was ₹4.27/kWh and ₹4.89/kWh respectively (Table-6 and Table-7).

(iii) *Price of electricity transacted through DSM:* The average deviation settlement price was ₹2.33/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 53.50% of the volume, and these were Sembcorp Gayatri Power Ltd., Punjab, Damodar Valley Corporation, Haryana and Delhi. Top 5 regional entities purchased 53.75% of the volume, and these were Telangana, Tamil Nadu, Chhattisgarh, Gujarat and Andhra Pradesh (Table-9 & 10).

Of the total power exchange transactions, top 5 regional entities sold 40.71% of the volume, and these were Madhya Pradesh, Telangana, Andhra Pradesh, Rajasthan and Damodar Valley Corporation. Top 5 regional entities purchased 66.78% of the volume, and these were Gujarat, Maharashtra, West Bengal, Bihar and Uttarakhand (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 27.09% of the volume, and these were NTPC Stations (Western region), Madhya Pradesh, NHPC Stations, Andhra Pradesh and Gujarat (Table-13). Top 5 regional entities overdrew 29.90% of the volume, and these were Odisha, Uttar Pradesh, Haryana, Rajasthan and Tamil Nadu (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 Madhya Pradesh, Sembcorp Gayatri Power Ltd., Punjab, Damador Valley Corporation and Delhi. Top 5 electricity purchasing regional entities were Gujarat, Tamil Nadu, Telangana, Maharashtra 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.

In the month of March 2018, congestion occurred both in IEX as well as PXIL. The details of congestion are shown in Table-16. The volume of electricity that could not be cleared due to congestion and could not be transacted through power exchanges is the difference between unconstrained cleared volume (volume of electricity that would have been scheduled, had there been no congestion) and actual cleared volume.

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.

During the month, the volume of electricity that could not be cleared in IEX and PXIL due to congestion was 0.01% and 0.29% respectively of the unconstrained cleared volume. In terms of time, congestion occurred was 2.18% in IEX and 0.91% in PXIL (Table-16).

V: Bilateral Contracts executed by Traders

The above sections covered an analysis on short-term transactions of electricity in March, 2018. This section covers an analysis of bilateral contracts executed in April, 2018.

(i) Duration of bilateral contracts: During April 2018, a total of 108 bilateral contracts (excluding banking/swap contracts) have been executed by traders for the volume of 1829.07 MUs. Figure-7 shows the percentage of contracts categorized according to the period of power supply. It can be observed from the figure that 68.5% of the bilateral contracts were executed for duration of up to one week, 31.5% 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, 30 banking/swapping bilateral contracts were also executed for the volume of 739.73 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 2nd April, 2018 to 31st July, 2018 based on the bilateral contracts⁴ executed till April, 2018. Forward curves have been drawn for the contracts executed in March, 2018 and April, 2018 for the purpose of comparison. It is observed that forward contract prices are significantly higher (for the period from 2nd April 2018 to 2nd May 2018) for the contracts executed in April, 2018 compared to the contracts executed in March, 2018, after which, the prices of contracts in March, 2018 and April, 2018 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 March, 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 March, 2018 are shown in Table-20. Market clearing volume of non-solar RECs transacted on IEX and PXIL were 20.80 lacs and 6.90 lacs 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 1.08 and 1.05 in IEX and PXIL respectively.

VII: Inferences:

- The percentage of short-term transactions of electricity to total electricity generation was 11.08%.
- Of the total short-term transactions, bilateral constitutes 51.02% (33.71% through traders and term-ahead contracts on power exchanges and 17.31% directly between distribution companies) followed by 34.15% through day ahead collective transactions on power exchanges and 14.83% through DSM (Table-1 & Figure-1).
- Top 5 trading licensees had a share of 77 % 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 0.17, indicating moderate concentration of market power.
- The weighted average price of electricity transacted through trading licensees was ₹3.59/kWh. The weighted average prices of electricity transacted through IEX and PXIL was ₹4.10/kWh and ₹3.90/kWh respectively.
- The average price of electricity transacted through DSM was ₹2.33/kWh.
- Top 5 electricity selling regional entities were Madhya Pradesh, Sembcorp Gayatri Power Ltd., Punjab, Damador Valley Corporation and Delhi. Top 5 electricity purchasing regional entities were Gujarat, Tamil Nadu, Telangana, Maharashtra and Jammu & Kashmir.
- During the month, the volume of electricity that could not be cleared in IEX and PXIL due to congestion was 0.01% and 0.29% respectively of the unconstrained cleared volume. In terms of time, congestion occurred was 2.18% in IEX and 0.91% in PXIL.
- In April, 2018, 68.5% of the bilateral contracts were executed for duration of up to one week, 31.5% 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 2nd April, 2018 to 31st July, 2018 based on the bilateral contracts⁵ executed till April, 2018 shows that forward contract prices are significantly higher (for the period from 2nd April to 2nd May 2018) for the contracts executed in April, 2018 compared to the contracts executed in March, 2018, after which, the prices of contracts in March and April have been moving together.
- Market clearing volume of non-solar RECs transacted on IEX and PXIL were 20.80 lacs and 6.90 lacs 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), MARCH 2018				
Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	5945.66	51.02	5.65
	(i) Through Traders and PXs	3928.30	33.71	3.74
	(ii) Direct	2017.37	17.31	1.92
2	Through Power Exchanges	3979.22	34.15	3.78
	(i) IEX	3955.29	33.94	3.76
	(ii) PXIL	23.93	0.21	0.02
3	Through DSM	1728.16	14.83	1.64
	Total	11653.04	-	11.08
	Total Generation	105162.02	-	-

Source: NLDC

Figure-1: Volume of Short-term Transactions of Electricity, March 2018

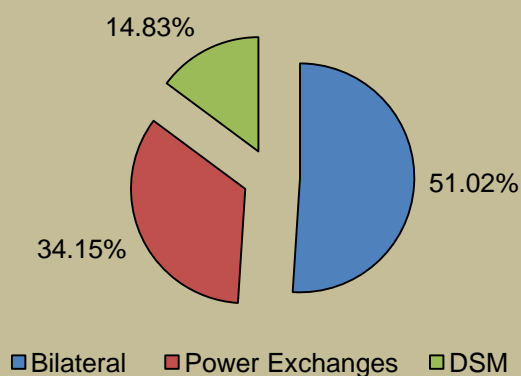
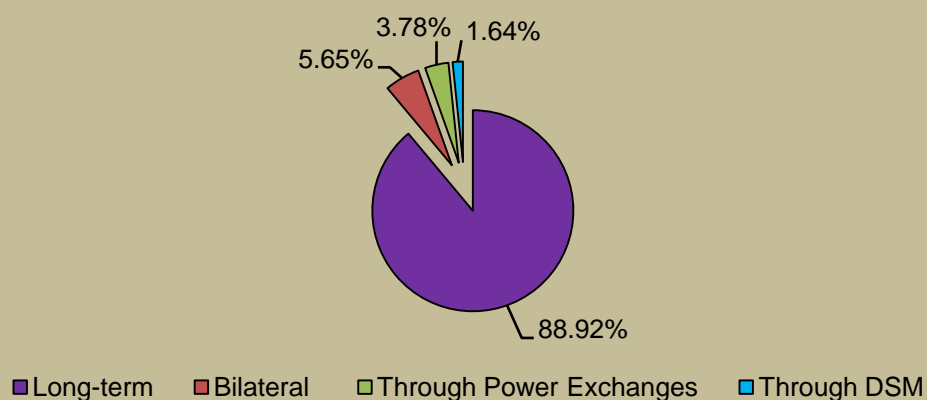


Figure-2: Volume of Various Kinds of Electricity Transactions in Total Electricity Generation, March 2018



**Figure-3: Volume of Short-term Transactions of Electricity,
March 2018 (Day-wise)**

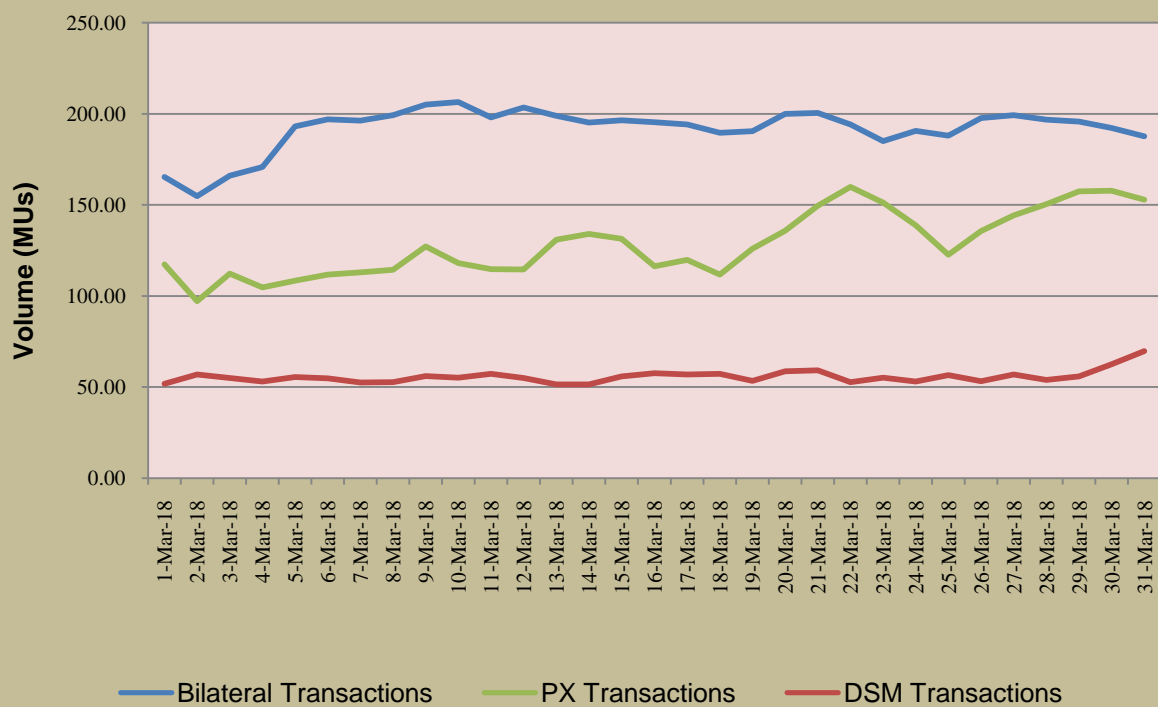


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, MARCH 2018			
Sr.No	Name of the Trading Licensee	% Share in total Volume transacted by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd.	30.89	0.0954
2	NTPC Vidyut Vyapar Nigam Ltd.	20.17	0.0407
3	GMR Energy Trading Ltd.	9.49	0.0090
4	Tata Power Trading Company (P) Ltd.	9.08	0.0083
5	Manikaran Power Ltd.	7.36	0.0054
6	Arunachal Pradesh Power Corporation (P) Ltd	7.29	0.0053
7	Mittal Processors (P) Ltd.	5.47	0.0030
8	JSW Power Trading Company Ltd	4.74	0.0022
9	Jaiprakash Associates Ltd.	1.72	0.0003
10	RPG Power Trading Company Ltd.	0.61	0.0000
11	National Energy Trading & Services Ltd.	0.55	0.0000
12	Knowledge Infrastructure Systems (P) Ltd	0.54	0.0000
13	Adani Enterprises Ltd.	0.50	0.0000
14	Essar Electric Power Development Corp. Ltd.	0.38	0.0000
15	Instinct Infra & Power Ltd.	0.27	0.0000
16	My Home Power Private Ltd.	0.22	0.0000
17	Statkraft Markets Pvt. Ltd.	0.21	0.0000
18	Customized Energy Solutions India (P) Ltd.	0.17	0.0000
19	Shree Cement Ltd.	0.17	0.0000
20	IPCL Power Trading Pvt. Ltd.	0.13	0.0000
21	Gita Power & Infrastructure Private Limited	0.02	0.0000
22	Phillip Commodities India (P) Ltd.	0.01	0.0000
23	Parshavanath Power Projects Private Limited	0.00	0.0000
TOTAL		100.00%	0.1698
Top 5 trading licensees		77.00%	
<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>			

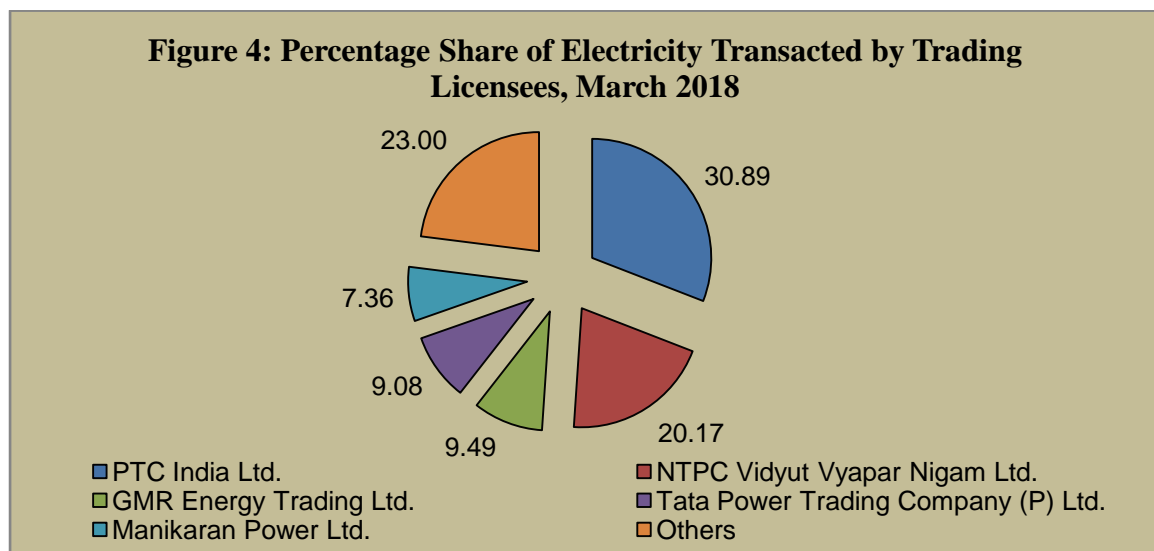


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, MARCH 2018		
Sr.No	Item	Sale Price of Traders (₹/kWh)
1	Minimum	2.85
2	Maximum	6.40
3	Weighted Average	3.59

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), MARCH 2018		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	4.09
2	PEAK	5.25
3	OFF PEAK	4.58

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, MARCH 2018			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	2.00	2.60
2	Maximum	8.20	5.12
3	Weighted Average	4.10	3.90

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, MARCH 2018			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	37.97	4.84
2	Day Ahead Contingency Contracts	42.77	4.13
3	Daily Contracts	57.46	4.00
	Total	138.19	4.27

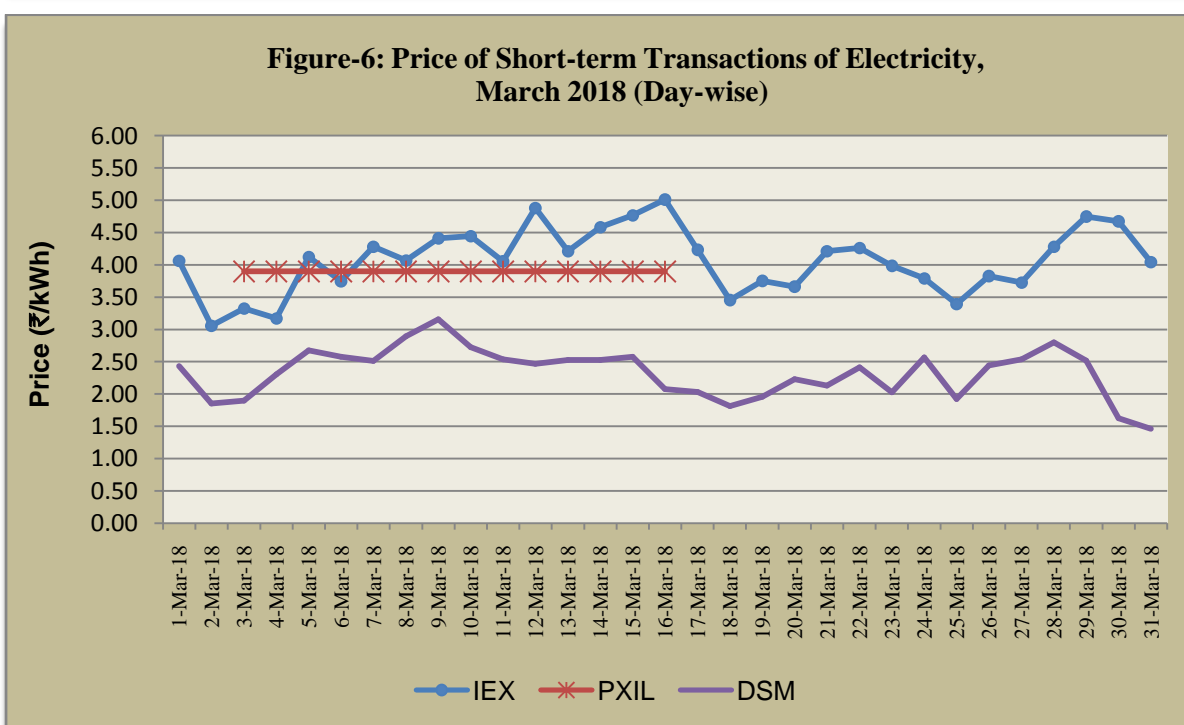
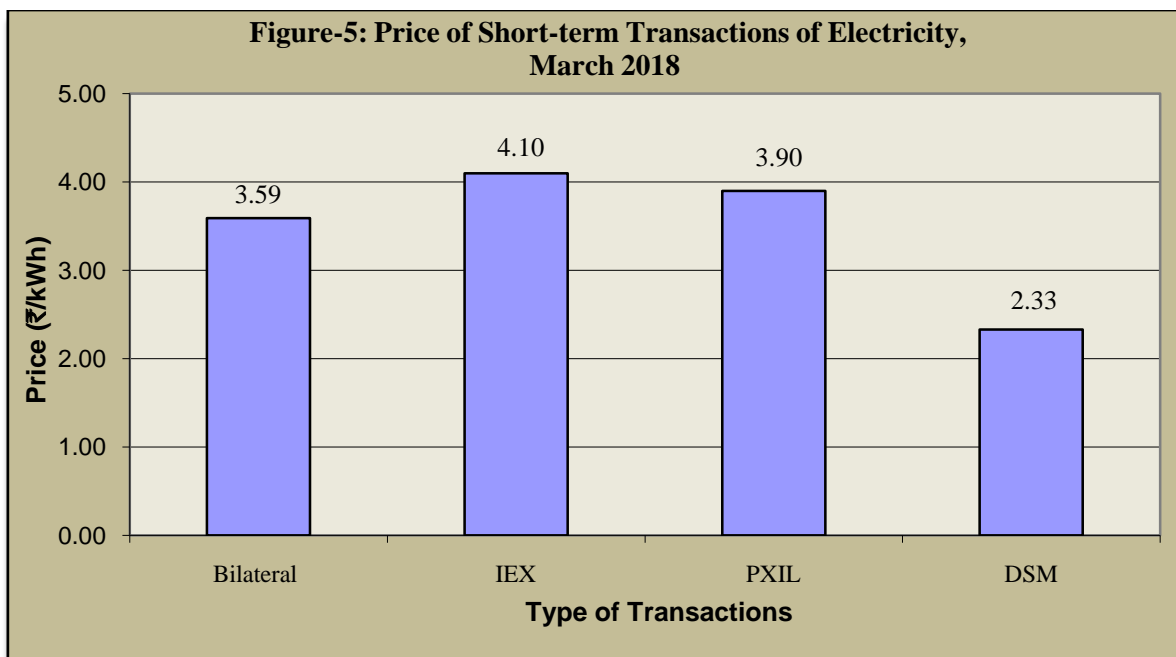
Source: IEX

Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, MARCH 2018			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	14.79	5.04
2	Any Day(s) Contracts	46.80	4.84
	Total	61.59	4.89

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH DSM, MARCH 2018		
Sr.No	Item	Price in All India Grid (₹/kWh)
1	Minimum	0.00
2	Maximum	6.36
3	Average	2.33

Source: NLDC



Note: During the month, there were no transactions in PXIL on 1st, 2nd and after 16th March, 2018.

Table-9: VOLUME OF ELECTRICITY SOLD THROUGH BILATERAL, MARCH 2018		
Name of the Entity	Volume of Sale (MUs)	% of Volume
SEMBCORP	865.39	14.59
PUNJAB	854.82	14.41
DVC	568.90	9.59
HARYANA	456.33	7.69
DELHI	428.59	7.22
ILF&S	345.20	5.82
MP	286.35	4.83
GMR CHATTISGARH	229.93	3.88
WEST BENGAL	213.35	3.60
ESSAR POWER	184.33	3.11
DB POWER	167.03	2.82
JITPL	147.76	2.49
JINDAL POWER	144.41	2.43
SHREE CEMENT	111.16	1.87
SKS POWER	95.10	1.60
ADHUNIK POWER LTD	94.33	1.59
JINDAL STAGE-II	87.76	1.48
MB POWER	73.78	1.24
JAYPEE NIGRIE	56.33	0.95
RAJASTHAN	55.47	0.93
KARNATAKA	53.76	0.91
ONGC PALATANA	48.36	0.82
TELANGANA	40.96	0.69
TRN ENERGY	40.66	0.69
ACBIL	36.08	0.61
ANDHRA PRADESH	32.89	0.55
SPECTRUM	30.36	0.51
CHHATTISGARH	27.93	0.47
HIMACHAL PRADESH	23.53	0.40
DAGACHU	16.85	0.28
CHANDIGARH	16.74	0.28
MAHARASHTRA	14.97	0.25
MEGHALAYA	10.44	0.18
JHABUA POWER_MP	9.44	0.16
MIZORAM	8.92	0.15
LANKO_AMK	8.26	0.14
J & K	8.13	0.14
ASSAM	7.00	0.12
TAMIL NADU	6.69	0.11
SIKKIM	5.96	0.10
ODISHA	5.20	0.09
LANCO BUDHIL	4.49	0.08
GUJARAT	3.79	0.06
GMR KAMALANGA	2.62	0.04
TEESTA STG3	1.66	0.03
DADRA & NAGAR HAVELI	0.35	0.01
Total	5932.39	100.00
Volume Sold by top 5 Regional Entities	3174.04	53.50

Table-10: VOLUME OF ELECTRICITY PURCHASED THROUGH BILATERAL, MARCH 2018		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
TELANGANA	849.40	14.29
TAMIL NADU	801.26	13.48
CHHATTISGARH	543.05	9.13
GUJARAT	517.78	8.71
ANDHRA PRADESH	484.07	8.14
KARNATAKA	427.39	7.19
J & K	390.01	6.56
HIMACHAL PRADESH	326.44	5.49
MAHARASHTRA	231.48	3.89
ESSAR STEEL	180.41	3.03
BANGLADESH	171.88	2.89
UTTARAKHAND	167.21	2.81
WEST BENGAL	139.64	2.35
BIHAR	129.35	2.18
ASSAM	107.48	1.81
JHARKHAND	94.33	1.59
ODISHA	76.86	1.29
UTTAR PRADESH	61.48	1.03
MEGHALAYA	57.96	0.97
DADRA & NAGAR HAVELI	42.32	0.71
KERALA	31.00	0.52
MANIPUR	27.90	0.47
DELHI	18.61	0.31
GOA	17.83	0.30
NEPAL(NVVN)	17.44	0.29
HARYANA	12.29	0.21
MP	11.96	0.20
RAJASTHAN	8.83	0.15
TOTAL	5945.66	100.00
Volume Purchased by top 5 Regional Entities	3195.56	53.75

**Table-11: VOLUME OF ELECTRICITY SOLD THROUGH POWER EXCHANGES,
MARCH 2018**

Name of the Entity	Volume of Sale (MUs)	% of Volume
MP	680.45	17.10
TELANGANA	283.59	7.13
ANDHRA PRADESH	241.62	6.07
RAJASTHAN	232.65	5.85
DVC	181.58	4.56
DELHI	152.80	3.84
TEESTA STG3	150.36	3.78
JITPL	140.93	3.54
CHHATTISGARH	137.53	3.46
DB POWER	114.05	2.87
MB POWER	94.56	2.38
SEMBICORP	84.37	2.12
GMR CHATTISGARH	83.19	2.09
KARNATAKA	83.16	2.09
MAHARASHTRA	83.12	2.09
ODISHA	82.05	2.06
THERMAL POWERTECH	72.14	1.81
HIMACHAL PRADESH	68.44	1.72
PUNJAB	66.29	1.67
JAYPEE NIGRIE	61.73	1.55
NLC	61.34	1.54
J & K	59.22	1.49
SHREE CEMENT	58.65	1.47
ASSAM	50.91	1.28
WEST BENGAL	42.86	1.08
GUJARAT	33.06	0.83
GMR KAMALANGA	33.03	0.83
TRIPURA	32.95	0.83
SPECTRUM	30.69	0.77
TAMIL NADU	27.97	0.70
JHABUA POWER_MP	27.75	0.70
DADRA & NAGAR HAVELI	26.97	0.68
NTPC STATIONS-NER	26.57	0.67
ESSAR POWER	24.79	0.62
NTPC STATIONS-SR	24.48	0.62
KARCHAM WANGTOO	21.09	0.53
UTTAR PRADESH	20.78	0.52
KERALA	20.50	0.52
GOA	19.61	0.49
TRN ENERGY	19.28	0.48
MEGHALAYA	17.69	0.44
MANIPUR	17.06	0.43
SIKKIM	16.80	0.42
BIHAR	16.09	0.40
NTPC STATIONS-WR	15.60	0.39
HARYANA	14.16	0.36
SKS POWER	13.88	0.35
TASHIDENG HEP	12.96	0.33
JORETHANG	12.17	0.31
ILF&S	11.39	0.29

MARUTI COAL	11.03	0.28
AD HYDRO	10.68	0.27
CHUZACHEN HEP	10.33	0.26
DIKCHU HEP	9.43	0.24
SAINJ HEP	8.32	0.21
ACBIL	5.21	0.13
MIZORAM	4.23	0.11
CHANDIGARH	4.14	0.10
NJPC	2.43	0.06
JINDAL POWER	2.28	0.06
UTTARAKHAND	1.63	0.04
NTPC STATIONS-NR	1.58	0.04
DHARIWAL POWER	1.26	0.03
MALANA	0.65	0.02
LANCO BUDHIL	0.60	0.02
NTPC STATIONS-ER	0.43	0.01
EMCO	0.07	0.00
Total	3979.22	100.00
Volume sold by top 5 Regional Entities	1619.88	40.71

Table-12: VOLUME OF ELECTRICITY PURCHASED THROUGH POWER EXCHANGES, MARCH 2018

Name of the Entity	Volume of Purchase (MUs)	% of Volume
GUJARAT	1274.91	32.04
MAHARASHTRA	428.65	10.77
WEST BENGAL	365.18	9.18
BIHAR	324.03	8.14
UTTARAKHAND	264.71	6.65
J & K	206.52	5.19
ODISHA	201.15	5.06
KARNATAKA	166.03	4.17
ESSAR STEEL	163.67	4.11
TAMIL NADU	146.47	3.68
TELANGANA	96.68	2.43
ASSAM	63.04	1.58
ANDHRA PRADESH	51.58	1.30
RAJASTHAN	42.80	1.08
DELHI	30.33	0.76
HIMACHAL PRADESH	25.22	0.63
KERALA	23.95	0.60
UTTAR PRADESH	17.86	0.45
BALCO	14.44	0.36
GOA	12.51	0.31
DAMAN AND DIU	11.52	0.29
HARYANA	11.13	0.28
MEGHALAYA	10.12	0.25
MP	10.11	0.25
JHARKHAND	6.84	0.17
NAGALAND	3.96	0.10
ARUNACHAL PRADESH	3.41	0.09
MANIPUR	0.82	0.02
DADRA & NAGAR HAVELI	0.64	0.02
PONDICHERRY	0.37	0.01
CHANDIGARH	0.32	0.01
TRIPURA	0.25	0.01
TOTAL	3979.22	100.00
Volume purchased by top 5 Regional Entities	2657.48	66.78

Table-13: VOLUME OF ELECTRICITY UNDER DRAWAL (EXPORTED) THROUGH DSM, MARCH 2018		
Name of the Entity	Volume of Underdrawal (MUs)	% of Volume
NTPC STATIONS-WR	134.87	8.79
MP	74.55	4.86
NHPC STATIONS	73.44	4.78
ANDHRA PRADESH	66.97	4.36
GUJARAT	66.02	4.30
NTPC STATIONS-NR	65.06	4.24
TAMIL NADU	62.28	4.06
RAJASTHAN	61.00	3.97
MAHARASHTRA	59.75	3.89
J & K	51.67	3.37
BIHAR	50.59	3.30
KARNATAKA	49.79	3.24
SASAN UMPP	47.24	3.08
TELANGANA	46.46	3.03
CHHATTISGARH	46.43	3.02
UTTARAKHAND	45.14	2.94
NLC	43.50	2.83
PUNJAB	37.77	2.46
DVC	37.21	2.42
UTTAR PRADESH	33.26	2.17
NTPC STATIONS-SR	32.55	2.12
ESSAR STEEL	21.91	1.43
NTPC STATIONS-ER	21.00	1.37
DELHI	19.86	1.29
ASSAM	14.79	0.96
HARYANA	11.42	0.74
MB POWER	11.17	0.73
WEST BENGAL	9.49	0.62
PONDICHERRY	9.35	0.61
GOA	9.00	0.59
JHARKHAND	8.93	0.58
EMCO	8.65	0.56
NSPCL	8.38	0.55
JAYPEE NIGRIE	8.17	0.53
MEGHALAYA	7.86	0.51
NJPC	7.77	0.51
TEESTA HEP	7.51	0.49
GMR KAMALANGA	7.43	0.48
DB POWER	7.34	0.48
HIMACHAL PRADESH	7.10	0.46
GMR CHATTISGARH	7.06	0.46
TRIPURA	6.64	0.43
LANKO_AMK	6.61	0.43
BANGLADESH	6.21	0.40
MANIPUR	6.14	0.40
KARCHAM WANGTOO	6.11	0.40
NEEPCO STATIONS	6.04	0.39
THERMAL POWERTECH	4.85	0.32
BALCO	4.80	0.31
TEESTA STG3	4.75	0.31

CGPL	4.60	0.30
SIKKIM	4.42	0.29
SKS POWER	4.09	0.27
TRN ENERGY	4.07	0.26
URI-2	3.77	0.25
ACBIL	3.53	0.23
ESSAR POWER	3.38	0.22
NAGALAND	3.25	0.21
MAITHON POWER LTD	3.14	0.20
JHABUA POWER_MP	3.04	0.20
MIZORAM	2.91	0.19
ILF&S	2.66	0.17
JINDAL STAGE-II	2.51	0.16
ARUNACHAL PRADESH	2.48	0.16
KERALA	2.30	0.15
DIKCHU HEP	2.16	0.14
SHREE CEMENT	2.10	0.14
DCPP	1.93	0.13
ADHUNIK POWER LTD	1.88	0.12
JITPL	1.84	0.12
RGPPL (DABHOL)	1.75	0.11
CHANDIGARH	1.75	0.11
RANGANADI HEP	1.62	0.11
KSK MAHANADI	1.60	0.10
ODISHA	1.41	0.09
RANGIT HEP	1.40	0.09
CHUZACHEN HEP	1.30	0.08
LOKTAK	1.25	0.08
DADRA & NAGAR HAVELI	1.03	0.07
JORETHANG	1.03	0.07
DHARIWAL POWER	1.03	0.07
NETCL VALLUR	1.01	0.07
DAMAN AND DIU	0.99	0.06
AD HYDRO	0.98	0.06
TASHIDENG HEP	0.91	0.06
SEMBCORP	0.90	0.06
JINDAL POWER	0.75	0.05
RKM POWER	0.72	0.05
COASTGEN	0.61	0.04
LANCO BUDHIL	0.45	0.03
DOYANG HEP	0.38	0.02
NEPAL(NVVN)	0.10	0.01
DAGACHU	0.01	0.00
Total	1534.95	100.00
Volume Exported by top 5 Regional Entities	415.85	27.09

Table-14: VOLUME OF ELECTRICITY OVER DRAWAL (IMPORTED) THROUGH DSM, MARCH 2018		
Name of the Entity	Volume of Over drawal (MUs)	% of Volume
ODISHA	136.01	7.52
UTTAR PRADESH	112.65	6.23
HARYANA	105.61	5.84
RAJASTHAN	101.56	5.62
TAMIL NADU	84.84	4.69
WEST BENGAL	81.36	4.50
MAHARASHTRA	73.53	4.07
NTPC STATIONS-WR	64.72	3.58
NTPC STATIONS-NR	58.39	3.23
GUJARAT	50.37	2.79
NTPC STATIONS-SR	48.32	2.67
NEPAL(NVVN)	47.87	2.65
HIMACHAL PRADESH	46.17	2.55
JHARKHAND	45.24	2.50
KERALA	43.15	2.39
PUNJAB	41.15	2.28
KARNATAKA	40.52	2.24
NTPC STATIONS-ER	34.49	1.91
MP	33.32	1.84
TELANGANA	32.57	1.80
ANDHRA PRADESH	32.25	1.78
DADRA & NAGAR HAVELI	26.07	1.44
ESSAR STEEL	25.69	1.42
SIKKIM	23.97	1.33
J & K	20.55	1.14
BIHAR	20.50	1.13
DAMAN AND DIU	19.63	1.09
NETCL VALLUR	19.30	1.07
ASSAM	18.22	1.01
DELHI	17.88	0.99
CHANDIGARH	16.91	0.93
CGPL	16.49	0.91
THERMAL POWERTECH	15.38	0.85
ARUNACHAL PRADESH	15.21	0.84
SEMBICORP	14.76	0.82
NHPC STATIONS	13.92	0.77
GMR KAMALANGA	13.91	0.77
UTTARAKHAND	13.44	0.74
NLC	13.42	0.74
GOA	10.24	0.57
ILF&S	9.30	0.51
MB POWER	8.76	0.48
JHABUA POWER_MP	8.72	0.48
TRIPURA	7.90	0.44
SHREE CEMENT	6.39	0.35
JINDAL STAGE-II	6.08	0.34
MIZORAM	5.61	0.31
ACBIL	5.42	0.30
JINDAL POWER	5.23	0.29
CHHATTISGARH	5.07	0.28

BALCO	4.99	0.28
DAGACHU	4.91	0.27
NAGALAND	4.50	0.25
COASTGEN	4.48	0.25
KARCHAM WANGTOO	4.23	0.23
JITPL	4.16	0.23
DVC	4.12	0.23
NJPC	3.68	0.20
JORETHANG	3.35	0.19
MAITHON POWER LTD	3.27	0.18
KSK MAHANADI	3.19	0.18
TASHIDENG HEP	3.04	0.17
BANGLADESH	3.01	0.17
GMR CHATTISGARH	2.95	0.16
RKM POWER	2.39	0.13
RGPPL (DABHOL)	2.38	0.13
PONDICHERRY	2.22	0.12
ESSAR POWER	2.15	0.12
EMCO	1.90	0.11
LANKO_AMK	1.83	0.10
JAYPEE NIGRIE	1.82	0.10
MANIPUR	1.82	0.10
TEESTA STG3	1.69	0.09
NSPCL	1.50	0.08
SKS POWER	1.40	0.08
MEGHALAYA	1.39	0.08
DGEN MEGA POWER	1.18	0.07
RANGANADI HEP	1.16	0.06
SASAN UMPP	1.11	0.06
DB POWER	1.07	0.06
DCPP	1.03	0.06
LANCO BUDHIL	1.01	0.06
NEEPCO STATIONS	0.99	0.05
TRN ENERGY	0.92	0.05
URI-2	0.79	0.04
LANKO KONDAPALLI	0.67	0.04
CHUZACHEN HEP	0.63	0.03
RANGIT HEP	0.59	0.03
ADHUNIK POWER LTD	0.57	0.03
AD HYDRO	0.47	0.03
DHARIWAL POWER	0.46	0.03
KORBA WEST POWER	0.40	0.02
DOYANG HEP	0.32	0.02
DIKCHU HEP	0.16	0.01
LOKTAK	0.16	0.01
MALANA	0.13	0.01
TEESTA HEP	0.01	0.00
TOTAL	1808.28	100.00
Volume Imported by top 5 Regional Entities	540.67	29.90

Table-15: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY-WISE), MARCH 2018		
Sr.No.	Name of the Entity	Total volume of net short-term transactions of electricity*
1	GUJARAT	1740.19
2	TAMIL NADU	935.63
3	TELANGANA	607.64
4	MAHARASHTRA	575.81
5	J & K	498.05
6	KARNATAKA	447.22
7	BIHAR	407.20
8	UTTARAKHAND	398.58
9	ESSAR STEEL	347.87
10	CHHATTISGARH	336.23
11	ODISHA	325.36
12	WEST BENGAL	320.48
13	HIMACHAL PRADESH	298.75
14	ANDHRA PRADESH	226.41
15	BANGLADESH	168.68
16	UTTAR PRADESH	137.95
17	JHARKHAND	137.48
18	ASSAM	116.04
19	KERALA	75.30
20	NEPAL(NVVN)	65.21
21	DADRA & NAGAR HAVELI	40.68
22	MEGHALAYA	33.48
23	DAMAN AND DIU	30.16
24	NETCL VALLUR	18.29
25	ARUNACHAL PRADESH	16.13
26	BALCO	14.62
27	NTPC STATIONS-ER	13.05
28	GOA	11.97
29	CGPL	11.88
30	MANIPUR	7.35
31	NAGALAND	5.21
32	COASTGEN	3.87
33	RKM POWER	1.67
34	KSK MAHANADI	1.59
35	DGEN MEGA POWER	1.18
36	LANKO KONDAPALLI	0.67
37	RGPPL (DABHOL)	0.63
38	RANGIT HEP	-0.81
39	DCPP	-0.90
40	LOKTAK	-1.09
41	DHARIWAL POWER	-1.82
42	URI-2	-2.98
43	SIKKIM	-3.21
44	LANCO BUDHIL	-4.54
45	NEEPCO STATIONS	-5.05
46	CHANDIGARH	-5.40
47	NJPC	-6.52
48	PONDICHERRY	-6.77
49	EMCO	-6.83
50	NSPCL	-6.88

51	TEESTA HEP	-7.50
52	NTPC STATIONS-NR	-8.25
53	SAINJ HEP	-8.32
54	NTPC STATIONS-SR	-8.71
55	JORETHANG	-9.85
56	MIZORAM	-10.45
57	TASHIDENG HEP	-10.83
58	CHUZACHEN HEP	-11.00
59	MARUTI COAL	-11.03
60	AD HYDRO	-11.20
61	DIKCHU HEP	-11.43
62	DAGACHU	-11.95
63	LANKO_AMK	-13.05
64	KARCHAM WANGTOO	-22.97
65	NTPC STATIONS-NER	-26.57
66	GMR KAMALANGA	-29.17
67	TRIPURA	-31.44
68	JHABUA POWER_MP	-31.51
69	ACBIL	-39.41
70	SASAN UMPP	-46.13
71	ONGC PALATANA	-48.36
72	NHPC STATIONS	-59.52
73	SPECTRUM	-61.06
74	THERMAL POWERTECH	-61.61
75	TRN ENERGY	-63.08
76	JINDAL STAGE-II	-84.19
77	NTPC STATIONS-WR	-85.74
78	NLC	-91.42
79	ADHUNIK POWER LTD	-95.64
80	SKS POWER	-111.67
81	JAYPEE NIGRIE	-124.41
82	JINDAL POWER	-142.21
83	TEESTA STG3	-155.07
84	SHREE CEMENT	-165.52
85	MB POWER	-170.75
86	RAJASTHAN	-195.92
87	ESSAR POWER	-210.35
88	JITPL	-286.37
89	DB POWER	-287.35
90	GMR CHATTISGARH	-317.23
91	ILF&S	-349.95
92	HARYANA	-352.89
93	DELHI	-534.43
94	DVC	-783.57
95	PUNJAB	-917.72
96	SEMBCORP	-935.89
97	MP	-985.96
* 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,MARCH 2018			
	Details of Congestion	IEX	PXIL
A	Unconstrained Cleared Volume* (MUs)	3955.54	24.00
B	Actual Cleared Volume and hence scheduled (MUs)	3955.29	23.93
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	0.25	0.07
D	Volume of electricity that could not be cleared as % to Unconstrained Cleared Volume	0.01%	0.29%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	2.18%	0.91%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	30.77%	55.56%
	6.00 - 12.00 hours	21.54%	14.81%
	12.00 - 18.00 hours	18.46%	14.81%
	18.00 - 24.00 hours	29.23%	14.81%
* This power would have been scheduled had there been no congestion.			
Source: IEX & PXIL& NLDC			

**Table-17: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA
(DAY-WISE) (MUs), MARCH 2018**

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-Mar-18	112.07	53.24	117.27	-	51.82	3410.51
2-Mar-18	99.02	55.80	97.10	-	56.94	3104.17
3-Mar-18	111.05	55.07	109.89	2.40	55.06	3162.08
4-Mar-18	116.13	54.74	102.33	2.40	53.04	3245.81
5-Mar-18	135.83	57.34	106.00	2.40	55.59	3349.48
6-Mar-18	138.96	58.04	109.32	2.40	54.79	3387.54
7-Mar-18	135.86	60.53	110.57	2.40	52.65	3397.88
8-Mar-18	136.29	63.14	112.04	2.33	52.81	3414.82
9-Mar-18	141.98	63.14	125.92	1.20	55.99	3404.43
10-Mar-18	143.75	62.81	116.84	1.20	55.27	3393.03
11-Mar-18	133.12	64.94	113.57	1.20	57.37	3309.03
12-Mar-18	142.22	61.37	113.36	1.20	55.04	3396.44
13-Mar-18	137.14	61.78	129.61	1.20	51.51	3426.20
14-Mar-18	135.44	59.93	132.84	1.20	51.51	3420.59
15-Mar-18	131.04	65.47	130.12	1.20	55.83	3468.10
16-Mar-18	124.12	71.36	115.12	1.20	57.65	3421.65
17-Mar-18	125.46	68.74	119.79	-	56.90	3301.21
18-Mar-18	120.39	69.36	111.74	-	57.32	3237.02
19-Mar-18	120.49	70.05	125.95	-	53.44	3351.88
20-Mar-18	127.63	72.39	135.74	-	58.62	3401.33
21-Mar-18	129.26	71.24	149.56	-	59.21	3380.50
22-Mar-18	124.29	69.88	159.86	-	52.66	3424.43
23-Mar-18	123.66	61.46	151.21	-	55.20	3468.36
24-Mar-18	126.55	64.15	138.78	-	53.03	3481.75
25-Mar-18	120.80	67.22	122.61	-	56.57	3359.14
26-Mar-18	124.20	73.57	135.64	-	53.24	3497.01
27-Mar-18	125.00	74.35	144.13	-	56.87	3544.62
28-Mar-18	121.59	75.35	150.40	-	54.01	3570.46
29-Mar-18	123.15	72.68	157.40	-	55.88	3591.39
30-Mar-18	122.44	69.92	157.75	-	62.63	3494.26
31-Mar-18	119.35	68.31	152.81	-	69.74	3346.90
Total	3928.30	2017.37	3955.29	23.93	1728.16	105162.02

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),
MARCH 2018**

Market Segment	Day ahead market of IEX			Day ahead market of PXIL			Under Drawl/Over Drawl from the Grid (DSM)		
Date	Minimum ACP	Maximum ACP	Weighted Average Price*	Minimum ACP	Maximum ACP	Weighted Average Price*	All India Grid		
							Minimum Price	Maximum Price	Average Price**
1-Mar-18	2.48	5.92	4.06	-	-	-	0.00	5.11	2.43
2-Mar-18	2.25	5.01	3.06	-	-	-	0.00	3.45	1.85
3-Mar-18	2.00	4.16	3.33	3.90	3.90	3.90	0.00	3.45	1.90
4-Mar-18	2.25	5.20	3.17	2.60	5.12	3.90	0.00	3.45	2.30
5-Mar-18	2.59	6.50	4.12	3.90	3.90	3.90	0.00	5.95	2.67
6-Mar-18	2.40	5.10	3.75	3.90	3.90	3.90	0.00	4.91	2.58
7-Mar-18	2.73	6.81	4.28	3.90	3.90	3.90	0.00	4.91	2.51
8-Mar-18	2.50	6.50	4.07	3.00	4.60	3.90	0.00	6.16	2.89
9-Mar-18	2.72	7.16	4.41	3.00	4.60	3.90	0.00	6.16	3.16
10-Mar-18	2.71	6.51	4.45	3.00	4.60	3.90	0.00	5.32	2.72
11-Mar-18	2.68	5.47	4.05	3.15	4.44	3.90	0.00	4.91	2.54
12-Mar-18	2.79	7.67	4.88	3.15	4.44	3.90	0.00	4.91	2.47
13-Mar-18	2.74	6.50	4.21	3.00	4.60	3.90	0.00	5.95	2.53
14-Mar-18	2.87	7.48	4.58	3.05	4.65	3.90	0.00	5.95	2.53
15-Mar-18	3.15	7.86	4.77	3.05	4.65	3.90	0.00	5.74	2.57
16-Mar-18	3.50	8.20	5.01	3.02	4.75	3.90	0.00	3.45	2.07
17-Mar-18	2.81	6.50	4.23	-	-	-	0.00	3.45	2.03
18-Mar-18	2.75	4.18	3.45	-	-	-	0.00	3.45	1.81
19-Mar-18	2.65	6.00	3.75	-	-	-	0.00	4.91	1.96
20-Mar-18	2.89	5.55	3.66	-	-	-	0.00	3.45	2.23
21-Mar-18	3.10	7.00	4.21	-	-	-	0.00	4.91	2.13
22-Mar-18	3.30	6.50	4.26	-	-	-	0.00	4.91	2.41
23-Mar-18	3.16	6.50	3.98	-	-	-	0.00	3.45	2.03
24-Mar-18	2.83	5.70	3.79	-	-	-	0.00	5.11	2.57
25-Mar-18	2.60	5.00	3.39	-	-	-	0.00	3.45	1.92
26-Mar-18	2.74	6.11	3.82	-	-	-	0.00	6.36	2.44
27-Mar-18	2.89	5.70	3.73	-	-	-	0.00	6.16	2.54
28-Mar-18	3.16	6.50	4.28	-	-	-	0.00	5.74	2.80
29-Mar-18	3.50	6.50	4.75	-	-	-	0.00	5.95	2.52
30-Mar-18	3.50	7.40	4.67	-	-	-	0.00	3.45	1.62
31-Mar-18	3.04	6.50	4.04	-	-	-	0.00	3.45	1.46
	2.00#	8.20#	4.10	2.60#	5.12#	3.90	0.00#	6.36#	2.33

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), MARCH 2018										
Name of the Entity	Through Bilateral			Through Power Exchange			Through DSM with Regional Grid			Total Net***
	Sale	Pur- chase	Net**	Sale	Pur- chase	Net**	Import (Over Drawl)	Export (Under Drawl)	Net**	
PUNJAB	854.82	0.00	-854.82	66.29	0.00	-66.29	41.15	37.77	3.39	-917.72
HARYANA	456.33	12.29	-444.04	14.16	11.13	-3.03	105.61	11.42	94.18	-352.89
RAJASTHAN	55.47	8.83	-46.63	232.65	42.80	-189.85	101.56	61.00	40.56	-195.92
DELHI	428.59	18.61	-409.98	152.80	30.33	-122.47	17.88	19.86	-1.98	-534.43
UP	0.00	61.48	61.48	20.78	17.86	-2.92	112.65	33.26	79.39	137.95
UTTARAKHAN	0.00	167.21	167.21	1.63	264.71	263.08	13.44	45.14	-31.70	398.58
HP	23.53	326.44	302.90	68.44	25.22	-43.22	46.17	7.10	39.07	298.75
J & K	8.13	390.01	381.88	59.22	206.52	147.30	20.55	51.67	-31.12	498.05
CHANDIGARH	16.74	0.00	-16.74	4.14	0.32	-3.82	16.91	1.75	15.16	-5.40
MP	286.35	11.96	-274.39	680.45	10.11	-670.33	33.32	74.55	-41.23	-985.96
MAHARASHTR	14.97	231.48	216.51	83.12	428.65	345.53	73.53	59.75	13.78	575.81
GUJARAT	3.79	517.78	513.99	33.06	1274.91	1241.85	50.37	66.02	-15.65	1740.19
CHHATTISGARH	27.93	543.05	515.12	137.53	0.00	-137.53	5.07	46.43	-41.36	336.23
GOA	0.00	17.83	17.83	19.61	12.51	-7.10	10.24	9.00	1.23	11.97
DAMAN DIU	0.00	0.00	0.00	0.00	11.52	11.52	19.63	0.99	18.64	30.16
D & N HAVELI	0.35	42.32	41.97	26.97	0.64	-26.33	26.07	1.03	25.04	40.68
ANDHRA PR	32.89	484.07	451.18	241.62	51.58	-190.04	32.25	66.97	-34.73	226.41
KARNATAKA	53.76	427.39	373.63	83.16	166.03	82.86	40.52	49.79	-9.28	447.22
KERALA	0.00	31.00	31.00	20.50	23.95	3.45	43.15	2.30	40.85	75.30
TAMIL NADU	6.69	801.26	794.57	27.97	146.47	118.51	84.84	62.28	22.56	935.63
PONDICHERR	0.00	0.00	0.00	0.00	0.37	0.37	2.22	9.35	-7.13	-6.77
TELANGANA	40.96	849.40	808.44	283.59	96.68	-186.91	32.57	46.46	-13.89	607.64
WEST BENGAL	213.35	139.64	-73.71	42.86	365.18	322.32	81.36	9.49	71.87	320.48
ODISHA	5.20	76.86	71.67	82.05	201.15	119.10	136.01	1.41	134.60	325.36
BIHAR	0.00	129.35	129.35	16.09	324.03	307.94	20.50	50.59	-30.09	407.20
JHARKHAND	0.00	94.33	94.33	0.00	6.84	6.84	45.24	8.93	36.31	137.48
SIKKIM	5.96	0.00	-5.96	16.80	0.00	-16.80	23.97	4.42	19.55	-3.21
DVC	568.90	0.00	-568.90	181.58	0.00	-181.58	4.12	37.21	-33.09	-783.57
ARUNACHAL	0.00	0.00	0.00	0.00	3.41	3.41	15.21	2.48	12.73	16.13
ASSAM	7.00	107.48	100.48	50.91	63.04	12.13	18.22	14.79	3.43	116.04
MANIPUR	0.00	27.90	27.90	17.06	0.82	-16.23	1.82	6.14	-4.32	7.35
MEGHALAYA	10.44	57.96	47.52	17.69	10.12	-7.57	1.39	7.86	-6.48	33.48
MIZORAM	8.92	0.00	-8.92	4.23	0.00	-4.23	5.61	2.91	2.71	-10.45
NAGALAND	0.00	0.00	0.00	0.00	3.96	3.96	4.50	3.25	1.25	5.21
TRIPURA	0.00	0.00	0.00	32.95	0.25	-32.70	7.90	6.64	1.26	-31.44
NTPC -NR	0.00	0.00	0.00	1.58	0.00	-1.58	58.39	65.06	-6.67	-8.25
NHPC STN	0.00	0.00	0.00	0.00	0.00	0.00	13.92	73.44	-59.52	-59.52
NJPC	0.00	0.00	0.00	2.43	0.00	-2.43	3.68	7.77	-4.09	-6.52
AD HYDRO	0.00	0.00	0.00	10.68	0.00	-10.68	0.47	0.98	-0.51	-11.20
KARCHAM W	0.00	0.00	0.00	21.09	0.00	-21.09	4.23	6.11	-1.88	-22.97
SHREE CEME	111.16	0.00	-111.16	58.65	0.00	-58.65	6.39	2.10	4.29	-165.52
LANCO BUDHI	4.49	0.00	-4.49	0.60	0.00	-0.60	1.01	0.45	0.55	-4.54
URI-2	0.00	0.00	0.00	0.00	0.00	0.00	0.79	3.77	-2.98	-2.98
SAINJ HEP	0.00	0.00	0.00	8.32	0.00	-8.32	0.00	0.00	0.00	-8.32
NTPC -WR	0.00	0.00	0.00	15.60	0.00	-15.60	64.72	134.87	-70.15	-85.74
JINDAL POWE	144.41	0.00	-144.41	2.28	0.00	-2.28	5.23	0.75	4.49	-142.21
LANCO_AMK	8.26	0.00	-8.26	0.00	0.00	0.00	1.83	6.61	-4.79	-13.05
NSPCL	0.00	0.00	0.00	0.00	0.00	0.00	1.50	8.38	-6.88	-6.88
ACBIL	36.08	0.00	-36.08	5.21	0.00	-5.21	5.42	3.53	1.89	-39.41
BALCO	0.00	0.00	0.00	0.00	14.44	14.44	4.99	4.80	0.19	14.62
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	16.49	4.60	11.88	11.88
EMCO	0.00	0.00	0.00	0.07	0.00	-0.07	1.90	8.65	-6.75	-6.83

ESSAR STEEL	0.00	180.41	180.41	0.00	163.67	163.67	25.69	21.91	3.78	347.87
KSK MAHANAI	0.00	0.00	0.00	0.00	0.00	0.00	3.19	1.60	1.59	1.59
ESSAR POWER	184.33	0.00	-184.33	24.79	0.00	-24.79	2.15	3.38	-1.23	-210.35
JINDAL STAGE	87.76	0.00	-87.76	0.00	0.00	0.00	6.08	2.51	3.57	-84.19
DB POWER	167.03	0.00	-167.03	114.05	0.00	-114.05	1.07	7.34	-6.27	-287.35
DHARIWAL PC	0.00	0.00	0.00	1.26	0.00	-1.26	0.46	1.03	-0.56	-1.82
JAYPEE NIGR	56.33	0.00	-56.33	61.73	0.00	-61.73	1.82	8.17	-6.35	-124.41
DGEN MEGA F	0.00	0.00	0.00	0.00	0.00	0.00	1.18	0.00	1.18	1.18
GMR CHATISC	229.93	0.00	-229.93	83.19	0.00	-83.19	2.95	7.06	-4.11	-317.23
MB POWER	73.78	0.00	-73.78	94.56	0.00	-94.56	8.76	11.17	-2.41	-170.75
MARUTI COAL	0.00	0.00	0.00	11.03	0.00	-11.03	0.00	0.00	0.00	-11.03
SPECTRUM	30.36	0.00	-30.36	30.69	0.00	-30.69	0.00	0.00	0.00	-61.06
JHABUA POW	9.44	0.00	-9.44	27.75	0.00	-27.75	8.72	3.04	5.68	-31.51
SASAN UMPP	0.00	0.00	0.00	0.00	0.00	0.00	1.11	47.24	-46.13	-46.13
TRN ENERGY	40.66	0.00	-40.66	19.28	0.00	-19.28	0.92	4.07	-3.14	-63.08
RKM POWER	0.00	0.00	0.00	0.00	0.00	0.00	2.39	0.72	1.67	1.67
SKS POWER	95.10	0.00	-95.10	13.88	0.00	-13.88	1.40	4.09	-2.69	-111.67
NTPC -SR	0.00	0.00	0.00	24.48	0.00	-24.48	48.32	32.55	15.78	-8.71
COASTGEN	0.00	0.00	0.00	0.00	0.00	0.00	4.48	0.61	3.87	3.87
THERMAL POW	0.00	0.00	0.00	72.14	0.00	-72.14	15.38	4.85	10.53	-61.61
ILF&S	345.20	0.00	-345.20	11.39	0.00	-11.39	9.30	2.66	6.64	-349.95
NLC	0.00	0.00	0.00	61.34	0.00	-61.34	13.42	43.50	-30.08	-91.42
SEMBICORP	865.39	0.00	-865.39	84.37	0.00	-84.37	14.76	0.90	13.87	-935.89
NETCL VALLU	0.00	0.00	0.00	0.00	0.00	0.00	19.30	1.01	18.29	18.29
NTPC - ER	0.00	0.00	0.00	0.43	0.00	-0.43	34.49	21.00	13.49	13.05
POWER LTD	94.33	0.00	-94.33	0.00	0.00	0.00	0.57	1.88	-1.31	-95.64
CHUZACHEN I	0.00	0.00	0.00	10.33	0.00	-10.33	0.63	1.30	-0.67	-11.00
GMR KAMALA	2.62	0.00	-2.62	33.03	0.00	-33.03	13.91	7.43	6.49	-29.17
JITPL	147.76	0.00	-147.76	140.93	0.00	-140.93	4.16	1.84	2.32	-286.37
TEESTA HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	7.51	-7.50	-7.50
DAGACHU	16.85	0.00	-16.85	0.00	0.00	0.00	4.91	0.01	4.90	-11.95
JORETHANG	0.00	0.00	0.00	12.17	0.00	-12.17	3.35	1.03	2.32	-9.85
NEPAL(NVVN)	0.00	17.44	17.44	0.00	0.00	0.00	47.87	0.10	47.77	65.21
BANGLADESH	0.00	171.88	171.88	0.00	0.00	0.00	3.01	6.21	-3.21	168.68
TEESTA STG3	1.66	0.00	-1.66	150.36	0.00	-150.36	1.69	4.75	-3.06	-155.07
DIKCHU HEP	0.00	0.00	0.00	9.43	0.00	-9.43	0.16	2.16	-2.00	-11.43
TASHIDENG H	0.00	0.00	0.00	12.96	0.00	-12.96	3.04	0.91	2.13	-10.83
NTPC -NER	0.00	0.00	0.00	26.57	0.00	-26.57	0.00	0.00	0.00	-26.57
NEEPCO STNS	0.00	0.00	0.00	0.00	0.00	0.00	0.99	6.04	-5.05	-5.05
ONGC PALATA	48.36	0.00	-48.36	0.00	0.00	0.00	0.00	0.00	0.00	-48.36

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 April, 2018

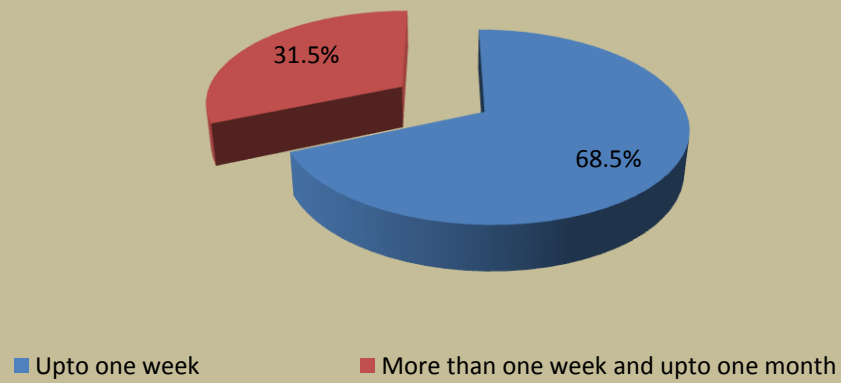


Figure-8: Forward Curve based on Prices of Bilateral Contracts

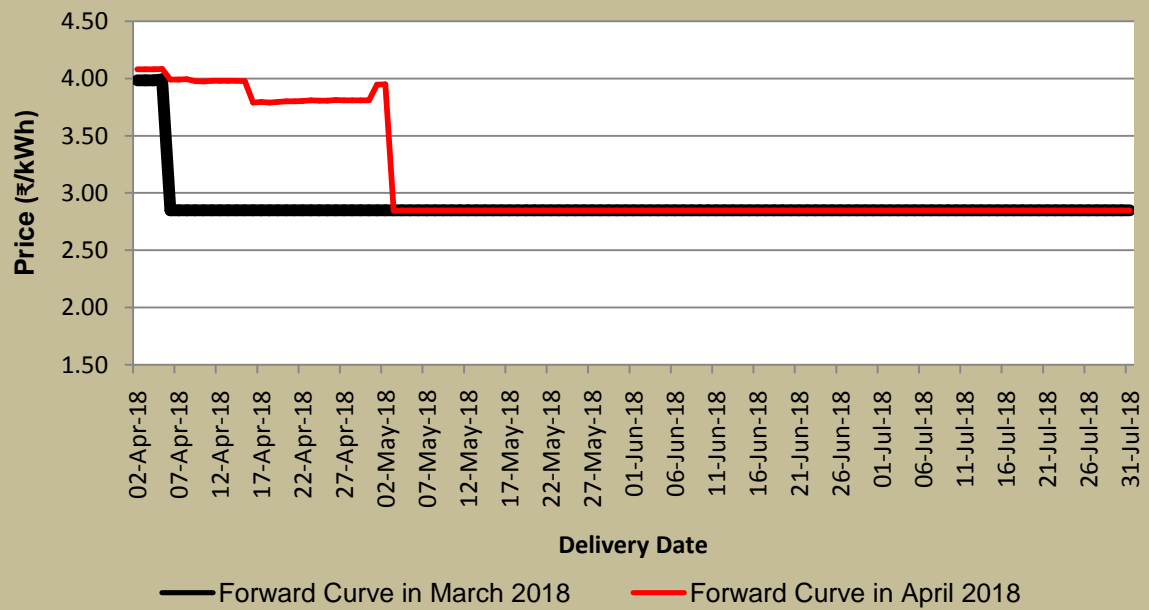


Table-20 : VOLUME AND PRICE OF RENEWABLE ENERGY CERTIFICATES (RECs) TRANSACTIONED THROUGH POWER EXCHANGES, MARCH 2018			
Sr.No.	Details of REC Transactions	IEX	PXIL
		Non-Solar	Non Solar
A	Volume of Buy Bid	2256422	743556
B	Volume of Sell Bid	2079799	705405
C	Ratio of Buy Bid to Sell Bid Volume	1.08	1.05
D	Market Clearing Volume (MWh)	2079799	689634
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	Floor Price (₹/MWh)	Forbearance Price (₹/MWh)
	Non-Solar	1500.00	3300.00