

Monthly Report on Short-term Transactions of Electricity in India

April, 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 **April, 2018** are as under:

I: Volume of Short-term Transactions of Electricity

During April 2018, total electricity generation excluding generation from renewable and captive power plants in India was 103455.03 MUs (Table-1).

Of the total electricity generation, 10743.90 MUs (10.39%) was transacted through short-term, comprising of 4911.56 MUs (4.75%) through bilateral (through traders and term-ahead contracts on power exchanges and directly between distribution companies), followed by 4061.05 MUs (3.93%) through day ahead collective transactions on power exchanges (IEX and PXIL) and 1771.29 MUs (1.71%) through DSM (Table-1 & Figure-2).

Of the total short-term transactions, bilateral constitutes 45.71% (26.99% through traders and term-ahead contracts on power exchanges and 18.72% directly between distribution companies) followed by 37.80% through day ahead collective transactions on power exchanges and 16.49% 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 37 trading licensees as on April, 2018. In April, 2018, 22 trading licensees were engaged in short term trading. Top 5 trading licensees had a share of 74.91% in the total volume traded by all the licensees. These are PTC India Ltd., NTPC Vidyut Vyapar Nigam Ltd., Manikaran Power Ltd., Mittal Processors Pvt. Ltd. and Tata Power Trading Company (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 0.2041 for the month of April, 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 4055.25 MUs and 5.80 MUs respectively. The volume of total buy bids and sell bids was 5100.84 MUs and 5506.03 MUs respectively in IEX while the same was 6.60 MUs and 60.72 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 134.00 MUs and 163.18 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 ₹2.48/kWh, ₹6.00/kWh and ₹3.63/kWh respectively (Table-3). The weighted average sale prices were also computed for the transactions during Round the Clock (RTC) and Off-peak periods separately, and the sale prices were ₹4.04/kWh and

₹4.38/kWh respectively (Table-4). There were no transactions in Peak period, hence, no price.

(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 ₹2.45/kWh, ₹7.50/kWh and ₹4.03/kWh respectively in IEX and ₹3.05/kWh, ₹5.07/kWh and ₹3.36/kWh respectively in PXIL. (Table-5).

The price of electricity transacted through IEX and PXIL in the term-ahead market was ₹4.59/kWh and ₹4.88/kWh respectively (Table-6 and Table-7).

(iii) *Price of electricity transacted through DSM:* The average deviation settlement price was ₹2.28/kWh. The minimum and maximum deviation settlement prices were ₹0.00/kWh and ₹6.36/kWh respectively (Table-8).

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

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

Of the total bilateral transactions, top 5 regional entities sold 46.94% of the volume, and these were Sembcorp Gayatri Power Ltd., Damodar Valley Corporation, Madhya Pradesh, Punjab and Jaypee Nigrie Super Thermal Power Project. Top 5 regional entities purchased 48.62% of the volume, and these were Gujarat, Tamil Nadu, Andhra Pradesh, Telangana and Karnataka (Table-9 & 10).

Of the total power exchange transactions, top 5 regional entities sold 44.65% of the volume, and these were Madhya Pradesh, Telangana, Damodar Valley Corporation, Sembcorp Gayatri Power Ltd. and Teesta Stage 3 Hydro Power Project. Top 5 regional entities purchased 67.73% of the volume, and these were Gujarat, Bihar, Maharashtra, Jammu & Kashmir 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 26.50% of the volume, and these were NTPC Stations (Western region), NHPC Stations, NTPC Stations (Northern region), Telangana and Madhya Pradesh (Table-13). Top 5 regional entities overdrew 27.73% of the volume, and these were Haryana, Uttar Pradesh, Rajasthan, Maharashtra 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., Damador Valley Corporation, Jaypee Nigrie Super Thermal Power Project and Punjab. Top 5 electricity purchasing regional entities were Gujarat, Tamil Nadu, Bihar, Maharashtra and West Bengal.

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 April 2018, congestion occurred only in IEX. The details of congestion are shown in Table-16. The volume of electricity that could not be cleared due to congestion and could not be transacted through power exchanges is the difference between

² “Congestion” means a situation where the demand for transmission capacity exceeds the available transfer capability

³ “Market Splitting” is a mechanism adopted by Power Exchange where the market is split in the event of transmission congestion, into predetermined (by NLDC) bid areas or zones, which are cleared individually at their respective area prices such that the energy balance in every bid area is reached based upon the demand and supply in individual bid areas and using the available transmission corridor capacity between various bid areas simultaneously”

As a result of this market splitting the price of electricity in the importing region, where demand for electricity is more than supply, becomes relatively higher than the price of electricity in the exporting region.

unconstrained cleared volume (volume of electricity that would have been scheduled, had there been no congestion) and actual cleared volume.

During the month, the volume of electricity that could not be cleared in IEX due to congestion was 0.07% of the unconstrained cleared volume. In terms of time, congestion occurred was 2.08% in IEX. There was no congestion in PXIL (Table-16).

V: Bilateral Contracts executed by Traders

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

(i) Duration of bilateral contracts: During May 2018, a total of 101 bilateral contracts (excluding banking/swap contracts) have been executed by traders for the volume of 2587.75 MUs. Figure-7 shows the percentage of contracts categorized according to the period of power supply. It can be observed from the figure that 77.2% of the bilateral contracts were executed for duration of up to one week, 22.8% 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, 48 banking/swapping bilateral contracts were also executed for the volume of 2213.80 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 May, 2018 to 29th August, 2018 based on the bilateral contracts⁴ executed till May, 2018. Forward curves have been drawn for the contracts executed in April, 2018 and May, 2018 for

⁴Excluding Banking/Swapping contracts

the purpose of comparison. It is observed that forward contract prices are significantly higher for the contracts executed in May, 2018 compared to the contracts executed in April, 2018.

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 April, 2011.

Trading in RECs which was stayed by the Supreme Court in May 2017 has been allowed since April 2018. The court allowed Trading as per the new floor price determined by CERC in its order dated March 30, 2017, under which the new forbearance price of solar RECs is ₹2,500/MWh and the floor price is ₹1,000/MWh. The forbearance price for non-solar RECs is ₹2,900/MWh while the floor price is ₹1,000/MWh.

The details of REC transactions for the month of April, 2018 are shown in Table-20. The market clearing volume of solar RECs transacted on IEX and PXIL were 644151 and 230967 respectively and the market clearing price of these RECs was ₹1000/MWh on both the power exchanges. Market clearing volume of non-solar RECs transacted on IEX and PXIL were 136979 and 50564 respectively and the market clearing price of these RECs was ₹1000/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 both solar and non-solar RECs. For Solar RECs, the ratio of buy bids to sell bids was 0.24 and 0.10 for IEX and PXIL respectively. For non-solar RECs, the ratio of buy bids to sell bids was 2.21 and 10.41 for IEX and PXIL respectively.

VII: Inferences:

- The percentage of short-term transactions of electricity to total electricity generation was 10.39%.
- Of the total short-term transactions, bilateral constitutes 45.71% (26.99% through traders and term-ahead contracts on power exchanges and 18.72% directly between distribution companies) followed by 37.80% through day ahead collective transactions on power exchanges and 16.49% through DSM (Table-1 & Figure-1).
- Top 5 trading licensees had a share of 74.91 % in the total volume traded by all the trading licensees.
- The Herfindahl Hirschman Index computed for the volume of electricity traded by trading licensees was 0.20, indicating moderate concentration of market power.
- The weighted average price of electricity transacted through trading licensees was ₹3.63/kWh. The weighted average prices of electricity transacted through IEX and PXIL was ₹4.03/kWh and ₹3.36/kWh respectively.
- The average price of electricity transacted through DSM was ₹2.28/kWh.
- Top 5 electricity selling regional entities were Madhya Pradesh, Sembcorp Gayatri Power Ltd., Damador Valley Corporation, Jaypee Nigrie Super Thermal Power Project and Punjab. Top 5 electricity purchasing regional entities were Gujarat, Tamil Nadu, Bihar, Maharashtra and West Bengal.
- During the month, the volume of electricity that could not be cleared in IEX due to congestion was 0.07% of the unconstrained cleared volume. In terms of time, congestion occurred was 2.08% in IEX. There was no congestion in PXIL.
- In May, 2018, 77.2% of the bilateral contracts were executed for duration of up to one week, 22.8% 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 May, 2018 to 29th August, 2018 based on the bilateral contracts⁵ executed till May, 2018 shows that forward contract prices are significantly higher for the contracts executed in May, 2018 compared to the contracts executed in April, 2018..
- The market clearing volume of solar RECs transacted on IEX and PXIL were 644151 and 230967 respectively and the market clearing price of these RECs was ₹1000/MWh on both the power exchanges. Market clearing volume of non-solar RECs transacted on IEX and PXIL were 136979 and 50564 respectively and the market clearing price of these RECs was ₹1000/MWh on both the power exchanges.

⁵*Excluding Banking/Swapping contracts*

Table-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (ALL INDIA), APRIL 2018				
Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	4911.56	45.71	4.75
	(i) Through Traders and PXs	2899.84	26.99	2.80
	(ii) Direct	2011.71	18.72	1.94
2	Through Power Exchanges	4061.05	37.80	3.93
	(i) IEX	4055.25	37.74	3.92
	(ii) PXIL	5.80	0.05	0.006
3	Through DSM	1771.29	16.49	1.71
	Total	10743.90	-	10.39
	Total Generation	103455.03	-	-

Source: NLDC

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

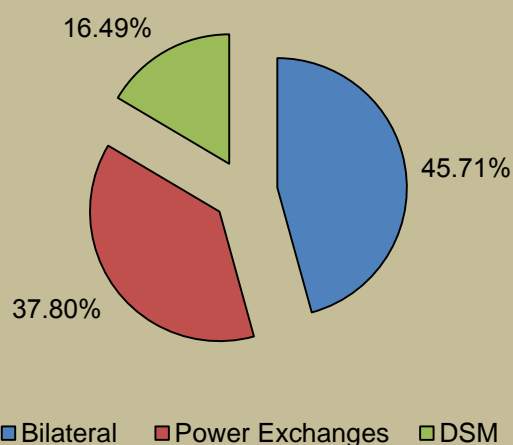
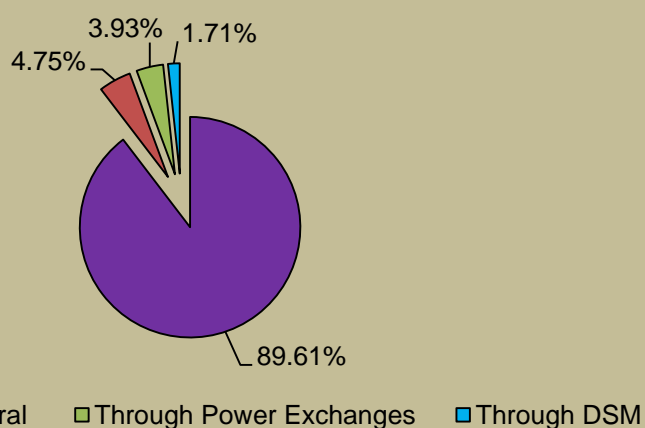


Figure-2: Volume of Various Kinds of Electricity Transactions in Total Electricity Generation, April 2018



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

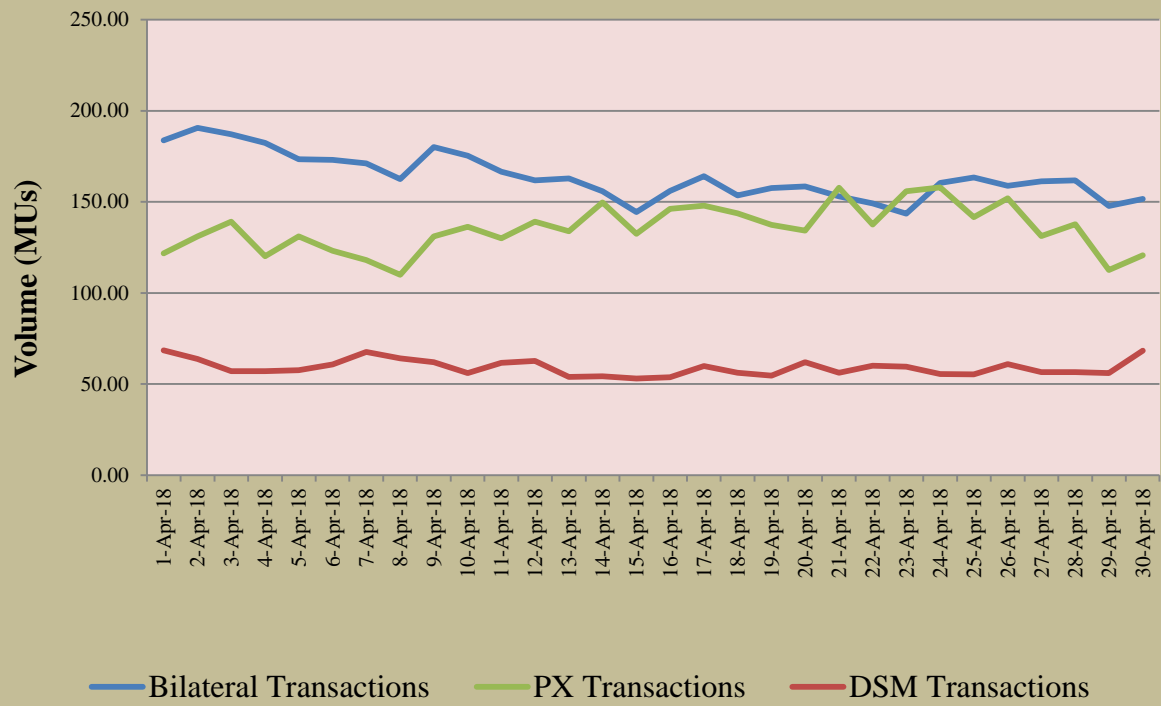


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, APRIL 2018			
Sr.No	Name of the Trading Licensee	% Share in total Volume transacted by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd.	40.00	0.1600
2	NTPC Vidyut Vyapar Nigam Ltd.	12.83	0.0164
3	Manikaran Power Ltd.	8.98	0.0081
4	Mittal Processors (P) Ltd.	6.81	0.0046
5	Tata Power Trading Company (P) Ltd.	6.30	0.0040
6	JSW Power Trading Company Ltd	5.96	0.0035
7	Arunachal Pradesh Power Corporation (P) Ltd	5.87	0.0034
8	GMR Energy Trading Ltd.	5.61	0.0031
9	Jaiprakash Associates Ltd.	2.10	0.0004
10	Essar Electric Power Development Corp. Ltd.	1.63	0.0003
11	RPG Power Trading Company Ltd.	0.73	0.0001
12	Knowledge Infrastructure Systems (P) Ltd	0.62	0.0000
13	IPCL Power Trading Pvt. Ltd.	0.55	0.0000
14	Statkraft Markets Pvt. Ltd.	0.50	0.0000
15	Instinct Infra & Power Ltd.	0.37	0.0000
16	Adani Enterprises Ltd.	0.34	0.0000
17	National Energy Trading & Services Ltd.	0.23	0.0000
18	Customized Energy Solutions India (P) Ltd.	0.21	0.0000
19	My Home Power Private Ltd.	0.19	0.0000
20	Shree Cement Ltd.	0.14	0.0000
21	Gita Power & Infrastructure Private Limited	0.04	0.0000
22	Phillip Commodities India (P) Ltd.	0.01	0.0000
TOTAL		100.00%	0.2041
Top 5 trading licensees		74.91%	
<i>Note 1: Volume of electricity transacted by the trading licensees includes bilateral transactions (inter-state & intra-state) and the transactions undertaken through power exchanges.</i>			
<i>Note 2: Volume of electricity transacted by Global Energy Ltd is not included.</i>			
<i>Source: Information submitted by trading licensees</i>			

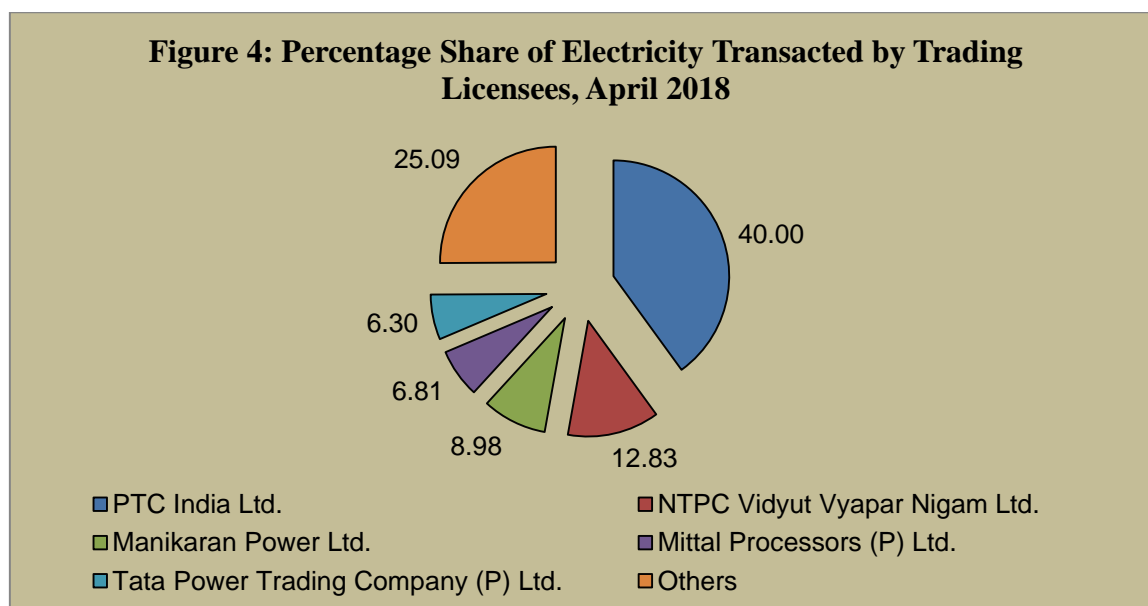


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, APRIL 2018		
Sr.No	Item	Sale Price of Traders (₹/kWh)
1	Minimum	2.48
2	Maximum	6.00
3	Weighted Average	3.63

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), APRIL 2018		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	4.04
2	PEAK	-
3	OFF PEAK	4.38

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, APRIL 2018			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	2.45	3.05
2	Maximum	7.50	5.07
3	Weighted Average	4.03	3.36

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, APRIL 2018			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	40.37	5.18
2	Day Ahead Contingency Contracts	12.22	4.46
3	Daily Contracts	37.90	4.30
4	Weekly Contracts	43.51	4.32
	Total	134.00	4.59

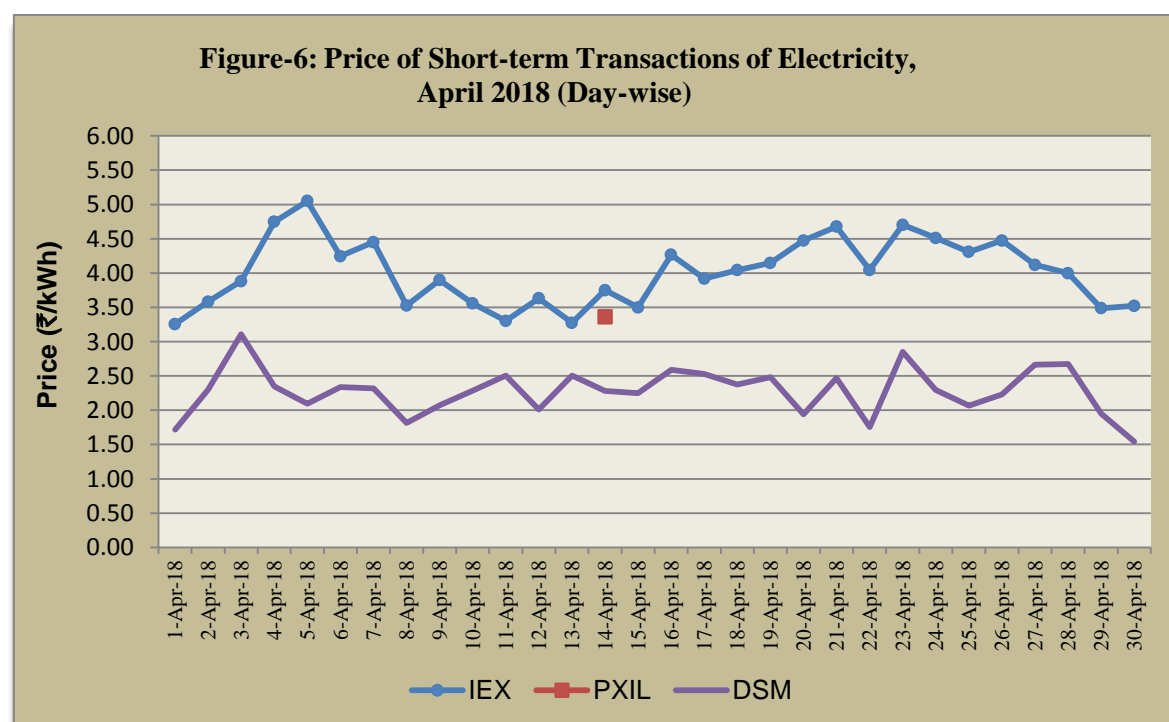
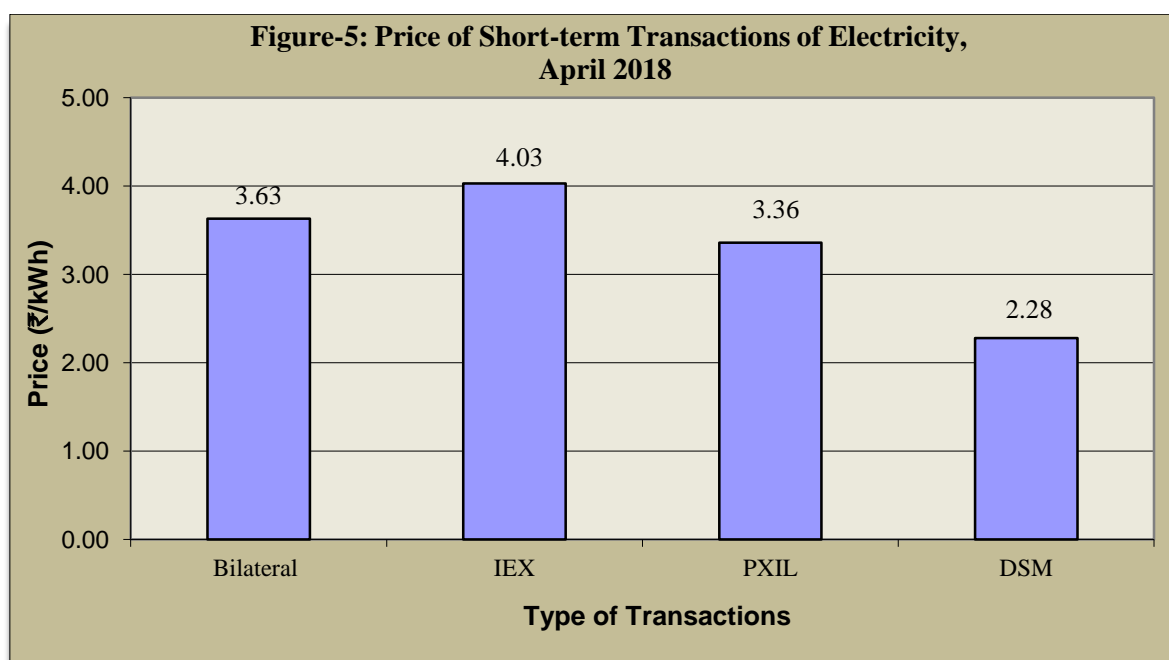
Source: IEX

Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, APRIL 2018			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	28.86	4.56
2	Any Day(s) Contracts	83.92	4.92
3	Weekly Contracts	50.40	5.00
	Total	163.18	4.88

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH DSM, APRIL 2018		
Sr.No	Item	Price in All India Grid (₹/kWh)
1	Minimum	0.00
2	Maximum	6.36
3	Average	2.28

Source: NLDC



Note: During the month, there were no transactions in PXIL except on 14th April, 2018.

Table-9: VOLUME OF ELECTRICITY SOLD THROUGH BILATERAL, APRIL 2018		
Name of the Entity	Volume of Sale (MUs)	% of Volume
SEMBCORP	680.39	13.91
DVC	518.09	10.59
MP	456.49	9.34
PUNJAB	354.00	7.24
JAYPEE NIGRIE	286.44	5.86
HARYANA	283.26	5.79
DB POWER	213.36	4.36
JITPL	198.43	4.06
J & K	181.32	3.71
DELHI	172.12	3.52
ILF&S	150.44	3.08
JINDAL POWER	148.28	3.03
KARNATAKA	139.62	2.86
ESSAR POWER	136.85	2.80
WEST BENGAL	122.26	2.50
JINDAL STAGE-II	96.33	1.97
GMR CHATTISGARH	93.38	1.91
SHREE CEMENT	88.22	1.80
ADHUNIK POWER LTD	79.49	1.63
HIMACHAL PRADESH	74.44	1.52
SKS POWER	66.47	1.36
TELANGANA	55.29	1.13
ONGC PALATANA	46.80	0.96
MB POWER	43.74	0.89
SPECTRUM	39.58	0.81
ACBIL	33.51	0.69
ANDHRA PRADESH	26.74	0.55
MAHARASHTRA	16.60	0.34
DIKCHU HEP	12.02	0.25
LANCO BUDHIL	11.40	0.23
LANKO_AMK	9.55	0.20
DAGACHU	7.96	0.16
TRN ENERGY	7.79	0.16
RAJASTHAN	6.69	0.14
TEESTA STG3	6.09	0.12
GUJARAT	5.25	0.11
ODISHA	5.15	0.11
CHHATTISGARH	5.00	0.10
TAMIL NADU	3.83	0.08
GMR KAMALANGA	2.64	0.05
MIZORAM	2.26	0.05
MEENAKSHI	1.18	0.02
SIKKIM	0.35	0.01
JHABUA POWER_MP	0.34	0.01
ASSAM	0.30	0.01
BALCO	0.25	0.01
MEGHALAYA	0.08	0.00
Total	4890.08	100.00
Volume Sold by top 5 Regional Entities	2295.41	46.94

Table-10: VOLUME OF ELECTRICITY PURCHASED THROUGH BILATERAL, APRIL 2018		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
GUJARAT	568.19	11.57
TAMIL NADU	489.85	9.97
ANDHRA PRADESH	481.46	9.80
TELANGANA	460.69	9.38
KARNATAKA	387.87	7.90
WEST BENGAL	379.12	7.72
CHHATTISGARH	355.50	7.24
MAHARASHTRA	291.83	5.94
BIHAR	196.26	4.00
PUNJAB	180.00	3.66
ODISHA	179.27	3.65
UTTAR PRADESH	153.27	3.12
ESSAR STEEL	131.77	2.68
BANGLADESH	105.12	2.14
JHARKHAND	94.98	1.93
HIMACHAL PRADESH	86.03	1.75
NEPAL(NVVN)	85.56	1.74
DELHI	69.70	1.42
HARYANA	68.54	1.40
TRIPURA	47.04	0.96
ASSAM	46.11	0.94
UTTARAKHAND	17.96	0.37
MP	15.35	0.31
GOA	8.59	0.17
MEGHALAYA	4.62	0.09
MANIPUR	3.02	0.06
DADRA & NAGAR HAVELI	2.35	0.05
DVC	0.90	0.02
RAJASTHAN	0.60	0.01
TOTAL	4911.56	100.00
Volume Purchased by top 5 Regional Entities	2388.06	48.62

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

Name of the Entity	Volume of Sale (MUs)	% of Volume
MP	609.23	15.00
TELANGANA	524.52	12.92
DVC	254.51	6.27
SEMBCORP	234.24	5.77
TEESTA STG3	190.86	4.70
MAHARASHTRA	140.25	3.45
ODISHA	118.59	2.92
PUNJAB	115.35	2.84
ANDHRA PRADESH	108.55	2.67
ESSAR POWER	100.85	2.48
MB POWER	97.78	2.41
RAJASTHAN	89.39	2.20
HIMACHAL PRADESH	88.23	2.17
JAYPEE NIGRIE	86.19	2.12
DELHI	85.77	2.11
CHHATTISGARH	84.78	2.09
THERMAL POWERTECH	79.24	1.95
JITPL	75.10	1.85
WEST BENGAL	70.33	1.73
SKS POWER	70.02	1.72
SHREE CEMENT	69.95	1.72
KARNATAKA	62.77	1.55
DB POWER	59.43	1.46
GMR KAMALANGA	37.77	0.93
NLC	35.58	0.88
TRIPURA	30.66	0.76
HARYANA	27.87	0.69
NTPC STATIONS-WR	27.65	0.68
AD HYDRO	25.85	0.64
NTPC STATIONS-NER	25.41	0.63
MEENAKSHI	24.78	0.61
ASSAM	24.07	0.59
SIKKIM	23.27	0.57
SPECTRUM	22.62	0.56
TAMIL NADU	22.02	0.54
CHUZACHEN HEP	21.84	0.54
GUJARAT	20.45	0.50
JINDAL STAGE-II	18.61	0.46
TRN ENERGY	18.25	0.45
NTPC STATIONS-SR	17.85	0.44
KARCHAM WANGTOO	17.71	0.44
NTPC STATIONS-NR	17.58	0.43
TASHIDENG HEP	16.04	0.39
JHABUA POWER_MP	15.36	0.38
JORETHANG	15.04	0.37
SAINJ HEP	14.20	0.35
ADHUNIK POWER LTD	13.32	0.33
DIKCHU HEP	12.96	0.32
NTPC STATIONS-ER	12.55	0.31
ACBIL	12.07	0.30

ILF&S	11.09	0.27
DADRA & NAGAR HAVELI	10.30	0.25
KERALA	9.91	0.24
MARUTI COAL	8.42	0.21
GOA	5.68	0.14
MIZORAM	5.63	0.14
J & K	3.84	0.09
GMR CHATTISGARH	3.49	0.09
CHANDIGARH	3.27	0.08
MEGHALAYA	2.57	0.06
BALCO	1.90	0.05
JINDAL POWER	1.69	0.04
LANCO BUDHIL	1.55	0.04
DHARIWAL POWER	1.42	0.03
MALANA	1.12	0.03
MANIPUR	0.90	0.02
UTTARAKHAND	0.89	0.02
BIHAR	0.10	0.00
Total	4061.05	100.00
Volume sold by top 5 Regional Entities	1813.37	44.65

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

Name of the Entity	Volume of Purchase (MUs)	% of Volume
GUJARAT	1276.36	31.43
BIHAR	459.71	11.32
MAHARASHTRA	458.19	11.28
J & K	281.10	6.92
UTTARAKHAND	275.20	6.78
WEST BENGAL	258.33	6.36
TAMIL NADU	233.01	5.74
KARNATAKA	169.41	4.17
ASSAM	99.16	2.44
TELANGANA	98.24	2.42
RAJASTHAN	97.48	2.40
ODISHA	63.59	1.57
ANDHRA PRADESH	45.75	1.13
DELHI	37.22	0.92
HIMACHAL PRADESH	36.93	0.91
GOA	33.20	0.82
DAMAN AND DIU	25.32	0.62
JHARKHAND	20.18	0.50
HARYANA	19.45	0.48
KERALA	16.84	0.41
MEGHALAYA	13.37	0.33
MP	8.43	0.21
NAGALAND	7.13	0.18
ESSAR STEEL	6.70	0.16
CHANDIGARH	6.21	0.15
MANIPUR	4.04	0.10
DADRA & NAGAR HAVELI	2.58	0.06
DVC	2.34	0.06
ARUNACHAL PRADESH	2.24	0.06
UTTAR PRADESH	1.69	0.04
TRIPURA	1.54	0.04
CHHATTISGARH	0.10	0.00
PONDICHERRY	0.02	0.00
TOTAL	4061.05	100.00
Volume purchased by top 5 Regional Entities	2750.55	67.73

Table-13: VOLUME OF ELECTRICITY UNDER DRAWAL (EXPORTED) THROUGH DSM, APRIL 2018		
Name of the Entity	Volume of Underdrawal (MUs)	% of Volume
NTPC STATIONS-WR	123.93	7.83
NHPC STATIONS	77.92	4.93
NTPC STATIONS-NR	76.41	4.83
TELANGANA	71.10	4.49
MP	69.85	4.42
ANDHRA PRADESH	63.79	4.03
MAHARASHTRA	60.46	3.82
GUJARAT	59.78	3.78
SASAN UMPP	57.80	3.65
J & K	53.24	3.37
BIHAR	52.67	3.33
RAJASTHAN	52.32	3.31
KARNATAKA	51.02	3.23
UTTAR PRADESH	47.20	2.98
NLC	43.18	2.73
WEST BENGAL	42.74	2.70
TAMIL NADU	37.39	2.36
PUNJAB	34.29	2.17
CHHATTISGARH	33.85	2.14
DELHI	33.60	2.12
UTTARAKHAND	29.92	1.89
NTPC STATIONS-ER	29.41	1.86
DVC	24.45	1.55
NTPC STATIONS-SR	23.05	1.46
ESSAR STEEL	21.01	1.33
JHARKHAND	19.72	1.25
HARYANA	13.91	0.88
EMCO	13.70	0.87
TRIPURA	12.13	0.77
MB POWER	11.83	0.75
ASSAM	11.25	0.71
TEESTA HEP	10.85	0.69
ODISHA	9.86	0.62
HIMACHAL PRADESH	9.28	0.59
JAYPEE NIGRIE	9.23	0.58
NEEPCO STATIONS	8.67	0.55
LANKO_AMK	7.86	0.50
GOA	7.57	0.48
NJPC	7.07	0.45
MEGHALAYA	7.07	0.45
MANIPUR	6.79	0.43
DIKCHU HEP	6.68	0.42
KARCHAM WANGTOO	6.55	0.41
DB POWER	6.49	0.41
BANGLADESH	6.31	0.40
GMR KAMALANGA	6.20	0.39
MIZORAM	6.03	0.38
SIKKIM	5.54	0.35
PONDICHERRY	5.48	0.35
CGPL	4.64	0.29

BALCO	4.52	0.29
THERMAL POWERTECH	4.17	0.26
TEESTA STG3	4.11	0.26
JINDAL STAGE-II	4.02	0.25
TRN ENERGY	3.73	0.24
ACBIL	3.70	0.23
MAITHON POWER LTD	3.62	0.23
NSPCL	3.38	0.21
ESSAR POWER	3.37	0.21
CHUZACHEN HEP	3.36	0.21
URI-2	3.35	0.21
KSK MAHANADI	3.21	0.20
NEPAL(NVVN)	3.06	0.19
SKS POWER	2.89	0.18
KERALA	2.83	0.18
AD HYDRO	2.80	0.18
ADHUNIK POWER LTD	2.30	0.15
JHABUA POWER_MP	2.12	0.13
NAGALAND	2.08	0.13
ILF&S	2.03	0.13
JORETHANG	1.84	0.12
SHREE CEMENT	1.83	0.12
ARUNACHAL PRADESH	1.75	0.11
TASHIDENG HEP	1.72	0.11
GMR CHATTISGARH	1.71	0.11
RGPL (DABHOL)	1.66	0.11
RKM POWER	1.63	0.10
RANGIT HEP	1.59	0.10
DOYANG HEP	1.47	0.09
LOKTAK	1.46	0.09
DCPP	1.17	0.07
DHARIWAL POWER	1.11	0.07
JITPL	1.08	0.07
JINDAL POWER	1.08	0.07
NETCL VALLUR	1.00	0.06
CHANDIGARH	0.96	0.06
SENBCORP	0.90	0.06
COASTGEN	0.66	0.04
MEENAKSHI	0.40	0.03
DADRA & NAGAR HAVELI	0.39	0.02
RANGANADI HEP	0.35	0.02
DAMAN AND DIU	0.30	0.02
MALANA	0.12	0.01
DAGACHU	0.11	0.01
Total	1582.03	100.00
Volume Exported by top 5 Regional Entities	419.20	26.50

Table-14: VOLUME OF ELECTRICITY OVER DRAWAL (IMPORTED) THROUGH DSM, APRIL 2018		
Name of the Entity	Volume of Over drawal (MUs)	% of Volume
HARYANA	128.04	6.97
UTTAR PRADESH	112.77	6.14
RAJASTHAN	111.90	6.09
MAHARASHTRA	82.56	4.49
TAMIL NADU	74.36	4.05
NTPC STATIONS-WR	69.94	3.81
NTPC STATIONS-NR	68.18	3.71
ODISHA	64.84	3.53
WEST BENGAL	61.57	3.35
NTPC STATIONS-SR	53.26	2.90
GUJARAT	45.33	2.47
MP	44.40	2.42
NTPC STATIONS-ER	44.23	2.41
HIMACHAL PRADESH	43.16	2.35
KARNATAKA	42.61	2.32
DVC	41.66	2.27
J & K	41.62	2.27
JHARKHAND	40.93	2.23
PUNJAB	40.73	2.22
ANDHRA PRADESH	38.50	2.10
KERALA	35.78	1.95
BIHAR	35.49	1.93
NETCL VALLUR	28.46	1.55
UTTARAKHAND	26.47	1.44
TELANGANA	24.56	1.34
ASSAM	23.93	1.30
DADRA & NAGAR HAVELI	22.51	1.22
ESSAR STEEL	21.75	1.18
ARUNACHAL PRADESH	20.03	1.09
DAMAN AND DIU	19.56	1.06
CHHATTISGARH	18.87	1.03
CHANDIGARH	18.65	1.02
DELHI	16.34	0.89
THERMAL POWERTECH	15.99	0.87
GMR KAMALANGA	15.85	0.86
MB POWER	15.61	0.85
CGPL	15.49	0.84
SEMBCORP	13.97	0.76
NHPC STATIONS	12.39	0.67
NLC	11.36	0.62
KARCHAM WANGTOO	11.21	0.61
TRIPURA	10.26	0.56
GOA	8.84	0.48
ILF&S	8.22	0.45
JINDAL STAGE-II	8.09	0.44
SHREE CEMENT	8.08	0.44
NAGALAND	8.05	0.44
JHABUA POWER_MP	6.16	0.34
SKS POWER	5.15	0.28
GMR CHATTISGARH	4.90	0.27

JINDAL POWER	4.57	0.25
PONDICHERRY	4.32	0.24
TASHIDENG HEP	4.27	0.23
JORETHANG	4.04	0.22
BALCO	3.89	0.21
MEENAKSHI	3.56	0.19
ACBIL	3.50	0.19
NEPAL(NVVN)	3.46	0.19
KSK MAHANADI	3.23	0.18
COASTGEN	2.90	0.16
NJPC	2.83	0.15
AD HYDRO	2.77	0.15
RKM POWER	2.69	0.15
MAITHON POWER LTD	2.65	0.14
SIKKIM	2.64	0.14
DB POWER	2.54	0.14
ADHUNIK POWER LTD	2.52	0.14
RGPPL (DABHOL)	2.44	0.13
DIKCHU HEP	2.42	0.13
EMCO	2.40	0.13
DAGACHU	2.36	0.13
TEESTA STG3	2.31	0.13
MIZORAM	2.23	0.12
JAYPEE NIGRIE	2.20	0.12
JITPL	1.97	0.11
NEEPCO STATIONS	1.77	0.10
BANGLADESH	1.68	0.09
TRN ENERGY	1.54	0.08
CHUZACHEN HEP	1.52	0.08
DCPP	1.50	0.08
NSPCL	1.48	0.08
RANGANADI HEP	1.38	0.08
MANIPUR	1.28	0.07
ESSAR POWER	1.19	0.06
KORBA WEST POWER	1.13	0.06
MEGHALAYA	1.11	0.06
SIMHAPURI	0.96	0.05
LANKO KONDAPALLI	0.92	0.05
SASAN UMPP	0.64	0.03
URI-2	0.51	0.03
LANKO_AMK	0.47	0.03
RANGIT HEP	0.37	0.02
LOKTAK	0.23	0.01
DOYANG HEP	0.21	0.01
MALANA	0.17	0.01
DHARIWAL POWER	0.13	0.01
TOTAL	1837.53	100.00
Volume Imported by top 5 Regional Entities	509.64	27.73

Table-15: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY-WISE), APRIL 2018		
Sr.No.	Name of the Entity	Total volume of net short-term transactions of electricity*
1	GUJARAT	1804.40
2	TAMIL NADU	733.98
3	BIHAR	638.70
4	MAHARASHTRA	615.27
5	WEST BENGAL	463.69
6	ANDHRA PRADESH	366.64
7	KARNATAKA	346.47
8	UTTARAKHAND	288.82
9	CHHATTISGARH	250.83
10	UTTAR PRADESH	220.53
11	ODISHA	174.10
12	ESSAR STEEL	139.20
13	JHARKHAND	136.37
14	ASSAM	133.59
15	BANGLADESH	100.49
16	NEPAL(NVVN)	85.96
17	J & K	84.32
18	RAJASTHAN	61.58
19	DAMAN AND DIU	44.58
20	KERALA	39.89
21	GOA	37.38
22	NETCL VALLUR	27.45
23	CHANDIGARH	20.63
24	ARUNACHAL PRADESH	20.52
25	DADRA & NAGAR HAVELI	16.75
26	TRIPURA	16.04
27	NAGALAND	13.11
28	NTPC STATIONS-SR	12.35
29	CGPL	10.85
30	MEGHALAYA	9.38
31	NTPC STATIONS-ER	2.28
32	COASTGEN	2.25
33	KORBA WEST POWER	1.13
34	RKM POWER	1.07
35	RANGANADI HEP	1.03
36	SIMHAPURI	0.96
37	MALANA	-1.07
38	PONDICHERRY	-1.15
39	RANGIT HEP	-1.22
40	LOKTAK	-1.23
41	DOYANG HEP	-1.26
42	NSPCL	-1.90
43	DHARIWAL POWER	-2.40
44	BALCO	-2.78
45	URI-2	-2.84
46	NJPC	-4.24
47	DAGACHU	-5.71
48	HIMACHAL PRADESH	-5.82
49	NEEPCO STATIONS	-6.90
50	MARUTI COAL	-8.42

51	TEESTA HEP	-10.85
52	EMCO	-11.31
53	JHABUA POWER_MP	-11.66
54	MIZORAM	-11.69
55	JORETHANG	-12.83
56	LANCO BUDHIL	-12.95
57	KARCHAM WANGTOO	-13.04
58	TASHIDENG HEP	-13.49
59	SAINJ HEP	-14.20
60	LANKO_AMK	-16.94
61	MEENAKSHI	-22.80
62	CHUZACHEN HEP	-23.68
63	NTPC STATIONS-NER	-25.41
64	NTPC STATIONS-NR	-25.81
65	AD HYDRO	-25.88
66	SIKKIM	-26.52
67	TRN ENERGY	-28.24
68	DIKCHU HEP	-29.24
69	GMR KAMALANGA	-30.76
70	ACBIL	-45.78
71	ONGC PALATANA	-46.80
72	SASAN UMPP	-57.17
73	SPECTRUM	-62.20
74	NHPC STATIONS	-65.53
75	NLC	-67.40
76	THERMAL POWERTECH	-67.43
77	TELANGANA	-67.43
78	NTPC STATIONS-WR	-81.64
79	ADHUNIK POWER LTD	-92.61
80	GMR CHATTISGARH	-93.67
81	HARYANA	-109.01
82	JINDAL STAGE-II	-110.87
83	SKS POWER	-134.23
84	MB POWER	-137.74
85	JINDAL POWER	-146.47
86	SHREE CEMENT	-151.92
87	ILF&S	-155.34
88	DELHI	-168.23
89	TEESTA STG3	-198.75
90	ESSAR POWER	-239.89
91	JITPL	-272.64
92	DB POWER	-276.74
93	PUNJAB	-282.91
94	JAYPEE NIGRIE	-379.65
95	DVC	-752.14
96	SEMBCORP	-901.55
97	MP	-1067.39
* 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, APRIL 2018			
	Details of Congestion	IEX	PXIL
A	Unconstrained Cleared Volume* (MUs)	4058.00	5.80
B	Actual Cleared Volume and hence scheduled (MUs)	4055.25	5.80
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	2.75	0.00
D	Volume of electricity that could not be cleared as % to Unconstrained Cleared Volume	0.07%	0.00%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	2.08%	0.00%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	0.00%	0.00%
	6.00 - 12.00 hours	0.00%	0.00%
	12.00 - 18.00 hours	3.33%	0.00%
	18.00 - 24.00 hours	96.67%	0.00%
* 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), APRIL 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-Apr-18	112.88	70.92	121.71	-	68.54	3219.63
2-Apr-18	118.62	71.99	131.00	-	63.72	3311.95
3-Apr-18	112.54	74.61	139.09	-	57.09	3482.06
4-Apr-18	111.37	70.98	120.12	-	57.00	3530.23
5-Apr-18	105.20	68.19	131.01	-	57.61	3503.91
6-Apr-18	105.28	67.72	123.13	-	60.80	3486.05
7-Apr-18	104.12	66.97	118.10	-	67.62	3361.43
8-Apr-18	95.37	67.08	110.01	-	64.06	3200.74
9-Apr-18	112.22	67.94	131.10	-	61.95	3319.47
10-Apr-18	108.67	66.70	136.30	-	55.97	3404.17
11-Apr-18	99.49	67.15	129.98	-	61.73	3369.61
12-Apr-18	96.20	65.57	139.15	-	62.67	3342.94
13-Apr-18	96.89	65.94	133.86	-	53.85	3426.19
14-Apr-18	88.52	67.37	143.85	5.80	54.34	3440.93
15-Apr-18	84.56	59.88	132.54	-	53.03	3313.72
16-Apr-18	91.19	64.90	146.23	-	53.80	3505.65
17-Apr-18	95.26	68.92	147.95	-	59.94	3536.40
18-Apr-18	87.20	66.29	143.77	-	56.15	3493.26
19-Apr-18	87.07	70.48	137.44	-	54.67	3525.57
20-Apr-18	92.57	65.84	134.17	-	62.02	3446.29
21-Apr-18	88.19	64.90	157.77	-	56.18	3550.78
22-Apr-18	85.47	63.77	137.61	-	60.04	3397.35
23-Apr-18	88.24	55.34	155.85	-	59.55	3557.02
24-Apr-18	96.35	64.00	157.91	-	55.47	3570.26
25-Apr-18	96.89	66.50	141.53	-	55.25	3568.44
26-Apr-18	91.14	67.62	151.90	-	60.92	3582.88
27-Apr-18	91.74	69.49	131.19	-	56.51	3627.03
28-Apr-18	92.90	68.90	137.74	-	56.50	3617.37
29-Apr-18	80.42	67.38	112.57	-	56.01	3400.86
30-Apr-18	83.26	68.41	120.69	-	68.32	3362.84
Total	2899.84	2011.71	4055.25	5.80	1771.29	103455.03
<i>Source: NLDC</i>						
<i>* Gross Electricity Generation excluding electricity generation from renewables and captive power plants.</i>						
<i>** The volume of bilateral through PXs represents the volume through term-ahead contracts.</i>						
<i># Area Clearing Volume represents the scheduled volume of all the bid areas.</i>						

**Table-18: PRICE OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (DAY-WISE)(₹/kWh),
APRIL 2018**

Market Segment	Day ahead market of IEX			Day ahead market of PXIL			Under Drawl/Over Drawl from the Grid (DSM)		
Date	Mini- mum ACP	Maxi- mum ACP	Weighted Average Price*	Mini- mum ACP	Maxi- mum ACP	Weighted Average Price*	All India Grid		
							Mini- mum Price	Maxi- mum Price	Average Price**
1-Apr-18	2.50	4.32	3.25	-	-	-	0.00	3.45	1.72
2-Apr-18	2.62	5.70	3.58	-	-	-	0.00	5.32	2.30
3-Apr-18	2.86	6.50	3.88	-	-	-	0.00	5.95	3.11
4-Apr-18	3.16	6.75	4.75	-	-	-	0.00	3.45	2.35
5-Apr-18	3.10	7.50	5.05	-	-	-	0.00	3.45	2.09
6-Apr-18	3.10	6.50	4.25	-	-	-	0.00	6.16	2.34
7-Apr-18	3.25	6.50	4.45	-	-	-	0.00	5.95	2.32
8-Apr-18	2.82	4.70	3.53	-	-	-	0.00	3.45	1.81
9-Apr-18	2.70	5.70	3.90	-	-	-	0.00	5.74	2.07
10-Apr-18	2.57	5.00	3.56	-	-	-	0.00	5.32	2.29
11-Apr-18	2.45	5.10	3.30	-	-	-	0.00	5.32	2.51
12-Apr-18	2.66	5.70	3.63	-	-	-	0.00	5.74	2.01
13-Apr-18	2.53	5.70	3.27	-	-	-	0.00	6.16	2.51
14-Apr-18	2.84	6.15	3.75	3.05	5.07	3.36	0.00	5.32	2.28
15-Apr-18	2.63	5.50	3.50	-	-	-	0.00	5.11	2.25
16-Apr-18	2.99	6.72	4.27	-	-	-	0.00	5.74	2.59
17-Apr-18	2.89	6.50	3.92	-	-	-	0.00	6.16	2.53
18-Apr-18	2.80	6.70	4.04	-	-	-	0.00	5.32	2.37
19-Apr-18	2.81	6.50	4.15	-	-	-	0.00	5.74	2.48
20-Apr-18	3.10	6.50	4.47	-	-	-	0.00	5.74	1.94
21-Apr-18	3.01	6.50	4.68	-	-	-	0.00	5.11	2.47
22-Apr-18	2.92	6.50	4.04	-	-	-	0.00	3.45	1.75
23-Apr-18	3.51	6.70	4.70	-	-	-	0.00	6.36	2.85
24-Apr-18	3.12	6.92	4.51	-	-	-	0.00	5.11	2.30
25-Apr-18	2.80	6.50	4.31	-	-	-	0.00	3.45	2.07
26-Apr-18	3.31	6.80	4.47	-	-	-	0.00	5.11	2.23
27-Apr-18	3.00	6.00	4.12	-	-	-	0.00	6.16	2.66
28-Apr-18	2.48	6.00	4.00	-	-	-	0.00	5.95	2.67
29-Apr-18	2.75	5.27	3.49	-	-	-	0.00	3.45	1.95
30-Apr-18	2.47	6.00	3.52	-	-	-	0.00	3.45	1.54
	2.45	7.50	4.03	3.05	5.07	3.36	0.00	6.36	2.28

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), APRIL 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	354.00	180.00	-174.00	115.35	0.00	-115.35	40.73	34.29	6.44	-282.91
HARYANA	283.26	68.54	-214.72	27.87	19.45	-8.42	128.04	13.91	114.13	-109.01
RAJASTHAN	6.69	0.60	-6.09	89.39	97.48	8.09	111.90	52.32	59.58	61.58
DELHI	172.12	69.70	-102.42	85.77	37.22	-48.55	16.34	33.60	-17.26	-168.23
UP	0.00	153.27	153.27	0.00	1.69	1.69	112.77	47.20	65.57	220.53
UTTARAKHAN	0.00	17.96	17.96	0.89	275.20	274.31	26.47	29.92	-3.45	288.82
HP	74.44	86.03	11.59	88.23	36.93	-51.30	43.16	9.28	33.88	-5.82
J & K	181.32	0.00	-181.32	3.84	281.10	277.26	41.62	53.24	-11.62	84.32
CHANDIGARH	0.00	0.00	0.00	3.27	6.21	2.94	18.65	0.96	17.70	20.63
MP	456.49	15.35	-441.14	609.23	8.43	-600.80	44.40	69.85	-25.45	-1067.39
MAHARASHTRA	16.60	291.83	275.23	140.25	458.19	317.94	82.56	60.46	22.11	615.27
GUJARAT	5.25	568.19	562.94	20.45	1276.36	1255.9	45.33	59.78	-14.44	1804.40
CHHATTISGARH	5.00	355.50	350.50	84.78	0.10	-84.69	18.87	33.85	-14.99	250.83
GOA	0.00	8.59	8.59	5.68	33.20	27.52	8.84	7.57	1.27	37.38
DAMAN DIU	0.00	0.00	0.00	0.00	25.32	25.32	19.56	0.30	19.26	44.58
D&N HAVELI	0.00	2.35	2.35	10.30	2.58	-7.72	22.51	0.39	22.12	16.75
ANDHRA PR	26.74	481.46	454.72	108.55	45.75	-62.80	38.50	63.79	-25.29	366.64
KARNATAKA	139.62	387.87	248.25	62.77	169.41	106.64	42.61	51.02	-8.42	346.47
KERALA	0.00	0.00	0.00	9.91	16.84	6.94	35.78	2.83	32.95	39.89
TAMIL NADU	3.83	489.85	486.02	22.02	233.01	210.99	74.36	37.39	36.97	733.98
PONDICHERRY	0.00	0.00	0.00	0.00	0.02	0.02	4.32	5.48	-1.16	-1.15
TELANGANA	55.29	460.69	405.40	524.52	98.24	-426.29	24.56	71.10	-46.54	-67.43
WEST BENGAL	122.26	379.12	256.86	70.33	258.33	187.99	61.57	42.74	18.83	463.69
ODISHA	5.15	179.27	174.12	118.59	63.59	-55.00	64.84	9.86	54.98	174.10
BIHAR	0.00	196.26	196.26	0.10	459.71	459.61	35.49	52.67	-17.18	638.70
JHARKHAND	0.00	94.98	94.98	0.00	20.18	20.18	40.93	19.72	21.20	136.37
SIKKIM	0.35	0.00	-0.35	23.27	0.00	-23.27	2.64	5.54	-2.90	-26.52
DVC	518.09	0.90	-517.19	254.51	2.34	-252.17	41.66	24.45	17.21	-752.14
ARUNACHAL P	0.00	0.00	0.00	0.00	2.24	2.24	20.03	1.75	18.28	20.52
ASSAM	0.30	46.11	45.81	24.07	99.16	75.09	23.93	11.25	12.68	133.59
MEGHALAYA	0.08	4.62	4.54	2.57	13.37	10.80	1.11	7.07	-5.96	9.38
MIZORAM	2.26	0.00	-2.26	5.63	0.00	-5.63	2.23	6.03	-3.80	-11.69
NAGALAND	0.00	0.00	0.00	0.00	7.13	7.13	8.05	2.08	5.98	13.11
TRIPURA	0.00	47.04	47.04	30.66	1.54	-29.13	10.26	12.13	-1.88	16.04
NTPC -NR	0.00	0.00	0.00	17.58	0.00	-17.58	68.18	76.41	-8.23	-25.81
NHPC	0.00	0.00	0.00	0.00	0.00	0.00	12.39	77.92	-65.53	-65.53
NJPC	0.00	0.00	0.00	0.00	0.00	0.00	2.83	7.07	-4.24	-4.24
AD HYDRO	0.00	0.00	0.00	25.85	0.00	-25.85	2.77	2.80	-0.03	-25.88
KARCHAM WA	0.00	0.00	0.00	17.71	0.00	-17.71	11.21	6.55	4.67	-13.04
SHREE CEME	88.22	0.00	-88.22	69.95	0.00	-69.95	8.08	1.83	6.26	-151.92
LANCO BUDHI	11.40	0.00	-11.40	1.55	0.00	-1.55	0.00	0.00	0.00	-12.95
MALANA	0.00	0.00	0.00	1.12	0.00	-1.12	0.17	0.12	0.05	-1.07
URI-2	0.00	0.00	0.00	0.00	0.00	0.00	0.51	3.35	-2.84	-2.84
SAINJ HEP	0.00	0.00	0.00	14.20	0.00	-14.20	0.00	0.00	0.00	-14.20
NTPC -WR	0.00	0.00	0.00	27.65	0.00	-27.65	69.94	123.93	-53.99	-81.64

JINDAL POWER	148.28	0.00	-148.28	1.69	0.00	-1.69	4.57	1.08	3.50	-146.47
LANKO_AMK	9.55	0.00	-9.55	0.00	0.00	0.00	0.47	7.86	-7.39	-16.94
NSPCL	0.00	0.00	0.00	0.00	0.00	0.00	1.48	3.38	-1.90	-1.90
ACBIL	33.51	0.00	-33.51	12.07	0.00	-12.07	3.50	3.70	-0.20	-45.78
BALCO	0.25	0.00	-0.25	1.90	0.00	-1.90	3.89	4.52	-0.63	-2.78
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	15.49	4.64	10.85	10.85
EMCO	0.00	0.00	0.00	0.00	0.00	0.00	2.40	13.70	-11.31	-11.31
ESSAR STEEL	0.00	131.77	131.77	0.00	6.70	6.70	21.75	21.01	0.74	139.20
ESSAR POWER	136.85	0.00	-136.85	100.85	0.00	-100.85	1.19	3.37	-2.18	-239.89
JINDAL STEEL	96.33	0.00	-96.33	18.61	0.00	-18.61	8.09	4.02	4.08	-110.87
DB POWER	213.36	0.00	-213.36	59.43	0.00	-59.43	2.54	6.49	-3.95	-276.74
DHARIWAL POWER	0.00	0.00	0.00	1.42	0.00	-1.42	0.13	1.11	-0.98	-2.40
JAYPEE NIGRI	286.44	0.00	-286.44	86.19	0.00	-86.19	2.20	9.23	-7.02	-379.65
GMR CHATTISGARH	93.38	0.00	-93.38	3.49	0.00	-3.49	4.90	1.71	3.20	-93.67
KORBA WEST	0.00	0.00	0.00	0.00	0.00	0.00	1.13	0.00	1.13	1.13
MB POWER	43.74	0.00	-43.74	97.78	0.00	-97.78	15.61	11.83	3.78	-137.74
MARUTI COAL	0.00	0.00	0.00	8.42	0.00	-8.42	0.00	0.00	0.00	-8.42
SPECTRUM	39.58	0.00	-39.58	22.62	0.00	-22.62	0.00	0.00	0.00	-62.20
JHABUA_MP	0.34	0.00	-0.34	15.36	0.00	-15.36	6.16	2.12	4.04	-11.66
SASAN UMPP	0.00	0.00	0.00	0.00	0.00	0.00	0.64	57.80	-57.17	-57.17
TRN ENERGY	7.79	0.00	-7.79	18.25	0.00	-18.25	1.54	3.73	-2.19	-28.24
RKM POWER	0.00	0.00	0.00	0.00	0.00	0.00	2.69	1.63	1.07	1.07
SKS POWER	66.47	0.00	-66.47	70.02	0.00	-70.02	5.15	2.89	2.26	-134.23
NTPC -SR	0.00	0.00	0.00	17.85	0.00	-17.85	53.26	23.05	30.21	12.35
MEENAKSHI	1.18	0.00	-1.18	24.78	0.00	-24.78	3.56	0.40	3.16	-22.80
COASTGEN	0.00	0.00	0.00	0.00	0.00	0.00	2.90	0.66	2.25	2.25
THERMAL POWER	0.00	0.00	0.00	79.24	0.00	-79.24	15.99	4.17	11.82	-67.43
ILF&S	150.44	0.00	-150.44	11.09	0.00	-11.09	8.22	2.03	6.19	-155.34
NLC	0.00	0.00	0.00	35.58	0.00	-35.58	11.36	43.18	-31.82	-67.40
SEMBCORP	680.39	0.00	-680.39	234.24	0.00	-234.24	13.97	0.90	13.08	-901.55
NETCL VALLU	0.00	0.00	0.00	0.00	0.00	0.00	28.46	1.00	27.45	27.45
NTPC -ER	0.00	0.00	0.00	12.55	0.00	-12.55	44.23	29.41	14.82	2.28
ADHUNIK POWER	79.49	0.00	-79.49	13.32	0.00	-13.32	2.52	2.30	0.21	-92.61
CHUZACHEN HEP	0.00	0.00	0.00	21.84	0.00	-21.84	1.52	3.36	-1.84	-23.68
RANGIT HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.37	1.59	-1.22	-1.22
GMR KAMALAM	2.64	0.00	-2.64	37.77	0.00	-37.77	15.85	6.20	9.65	-30.76
JITPL	198.43	0.00	-198.43	75.10	0.00	-75.10	1.97	1.08	0.88	-272.64
TEESTA HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.85	-10.85	-10.85
DAGACHU	7.96	0.00	-7.96	0.00	0.00	0.00	2.36	0.11	2.25	-5.71
JORETHANG	0.00	0.00	0.00	15.04	0.00	-15.04	4.04	1.84	2.21	-12.83
NEPAL(NVVN)	0.00	85.56	85.56	0.00	0.00	0.00	3.46	3.06	0.40	85.96
BANGLADESH	0.00	105.12	105.12	0.00	0.00	0.00	1.68	6.31	-4.63	100.49
TEESTA STG3	6.09	0.00	-6.09	190.86	0.00	-190.86	2.31	4.11	-1.80	-198.75
DIKCHU HEP	12.02	0.00	-12.02	12.96	0.00	-12.96	2.42	6.68	-4.26	-29.24
TASHIDENG HEP	0.00	0.00	0.00	16.04	0.00	-16.04	4.27	1.72	2.55	-13.49
NTPC -NER	0.00	0.00	0.00	25.41	0.00	-25.41	0.00	0.00	0.00	-25.41
NEEPCO	0.00	0.00	0.00	0.00	0.00	0.00	1.77	8.67	-6.90	-6.90

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 May, 2018

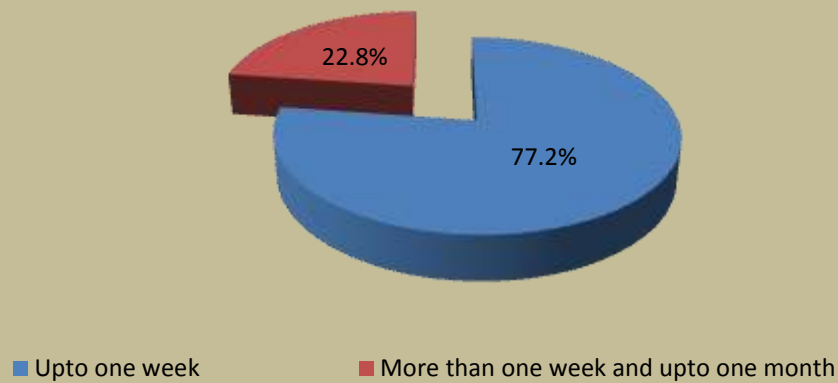


Figure-8: Forward Curve based on Prices of Bilateral Contracts

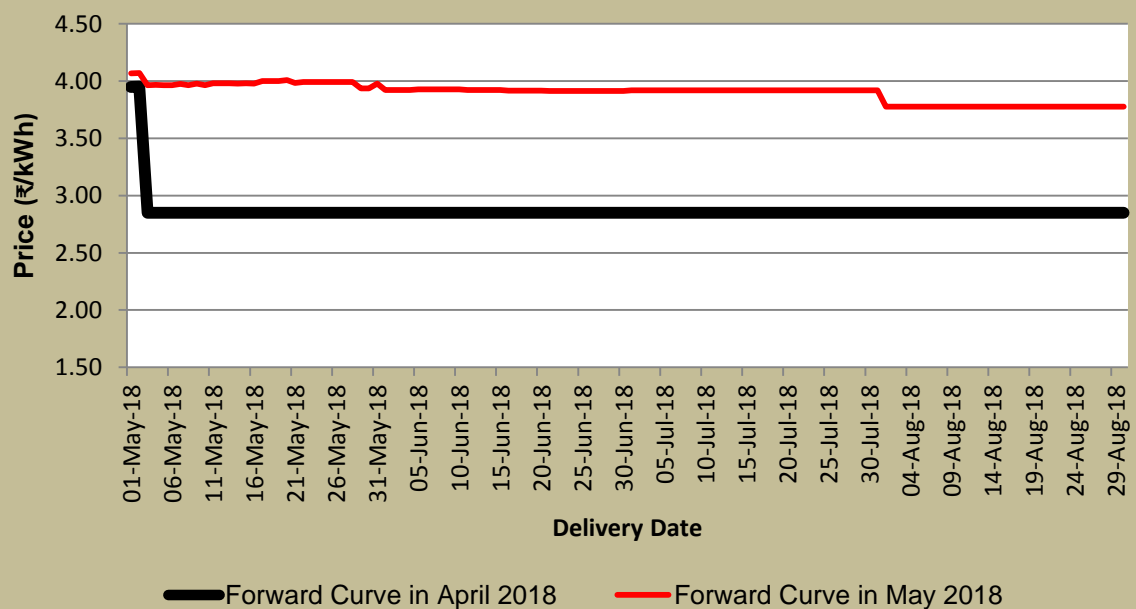


Table-20 : VOLUME AND PRICE OF RENEWABLE ENERGY CERTIFICATES (RECs) TRANSACTIONED THROUGH POWER EXCHANGES, APRIL 2018					
Sr.No.	Details of REC Transactions	IEX		PXIL	
		Solar	Non-Solar	Solar	Non Solar
A	Volume of Buy Bid	644151	417686	230967	681740
B	Volume of Sell Bid	2705722	188672	2211560	65497
C	Ratio of Buy Bid to Sell Bid Volume	0.24	2.21	0.10	10.41
D	Market Clearing Volume (MWh)	644151	136979	230967	50564
E	Market Clearing Price (₹/MWh)	1000	1000	1000	1000

Source: IEX and PXIL

Note 1: 1 REC = 1 MWh

Note 2:

Forbearance and Floor Price w.e.f 1st April 2017		
Type of REC	Floor Price (₹/MWh)	Forbearance Price (₹/MWh)
Solar	1000.00	2500.00
Non-Solar	1000.00	2900.00