

Monthly Report on Short-term Transactions of Electricity in India

May, 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	ChuzachenHydro 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	DoyangHydro 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	JaypeeNigrie 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	JaypeeKarcham 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	NathpaJhakri 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	RangitHydro 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	SembcorpGayatri 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 **May, 2018** are as under:

I: Volume of Short-term Transactions of Electricity

During May 2018, total electricity generation excluding generation from renewable and captive power plants in India was 110606.21 MUs (Table-1).

Of the total electricity generation, 12057.06 MUs (10.90%) was transacted through short-term, comprising of 5169.73 MUs (4.67%) through bilateral (through traders and term-ahead contracts on power exchanges and directly between distribution companies), followed by 4915.98 MUs (4.44%) through day ahead collective transactions on power exchanges and 1971.35 MUs (1.78%) through DSM (Table-1 & Figure-2). There were no transactions in Day Ahead Market of PXIL during May, 2018.

Of the total short-term transactions, bilateral constitutes 42.88% (30.48% through traders and term-ahead contracts on power exchanges and 12.39% directly between distribution companies) followed by 40.77% through day ahead collective transactions on power exchanges and 16.35% 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 May, 2018. In May, 2018, 23 trading licensees were engaged in short term trading. Top 5 trading licensees had a share of 79.11% 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 Arunachal Pradesh Power Corporation (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 0.2449 for the month of May, 2018, which indicates moderate concentration of market power (Table-2).

The volume of electricity transacted through IEX in the day ahead market was 4915.98 MUs while no transaction was recorded in PXIL. The volume of total buy bids and sell bids was 6441.02 MUs and 6123.28 MUs respectively in IEX while the same was 0.76 MUs and 41.88 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 252.89 MUs and 53.21 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, ₹5.50/kWh and ₹4.17/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 ₹4.15/kWh, ₹4.28/kWh and ₹4.44/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. The minimum, maximum and weighted average prices were ₹1.95/kWh, ₹11.78/kWh and ₹4.76/kWh respectively in IEX (Table-5).

The price of electricity transacted through IEX and PXIL in the term-ahead market was ₹4.75/kWh and ₹5.54/kWh respectively (Table-6 and Table-7).

(iii) **Price of electricity transacted through DSM:** The average deviation settlement price was ₹2.59/kWh. The minimum and maximum deviation settlement prices were ₹0.00/kWh and ₹8.24/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 47.53% of the volume, and these were Sembcorp Gayatri Power Ltd., Jammu & Kashmir, Damodar Valley Corporation, Himachal Pradesh and Madhya Pradesh. Top 5 regional entities purchased 51.58% of the volume, and these were Uttar Pradesh, Gujarat, Delhi, Karnataka and Andhra Pradesh (Table-9 & 10).

Of the total power exchange transactions, top 5 regional entities sold 40.49% of the volume, and these were Telangana, Diligent Power Pvt. Ltd., Teesta Stage 3 Hydro Power Project, Sembcorp Gayatri Power Ltd. and Delhi. Top 5 regional entities purchased 64.55% of the volume, and these were Gujarat, Maharashtra, Bihar, West Bengal and Odisha (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 24.10% of the volume, and these were Karnataka, Uttar Pradesh, Andhra Pradesh, NTPC Stations (Western region) and Tamil Nadu (Table-13). Top 5 regional entities overdrew 27.52% of the volume, and these were Rajasthan, Haryana, Uttar Pradesh, Maharashtra and West Bengal (Table-14).

Regional entity-wise total volume of net short-term transactions of electricity i.e. volume of net transactions through bilateral, power exchanges and DSM is shown in Table-15 & 19. Top 5 electricity selling regional entities were Sembcorp Gayatri Power Ltd., Telangana, Damodar Valley Corporation, Madhya Pradesh and Jaypee Nigrie Super Thermal Power Project. Top 5 electricity purchasing regional entities were Gujarat, Uttar Pradesh, Maharashtra, Bihar 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 May 2018, congestion occurred 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 unconstrained

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.

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 1.05% of the unconstrained cleared volume. In terms of time, congestion occurred was 26.78% in IEX (Table-16).

V: Bilateral Contracts executed by Traders

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

(i) Duration of bilateral contracts: During June 2018, a total of 57 bilateral contracts (excluding banking/swap contracts) have been executed by traders for the volume of 1989.38 MUs. Figure-7 shows the percentage of contracts categorized according to the period of power supply. It can be observed from the figure that 45.6% of the bilateral contracts were executed for duration of up to one week, 54.4% of the contracts were executed for duration of more than a week and up to one month, while no contracts were executed for duration of more than one month.

During the month, 50 banking/swapping bilateral contracts were also executed for the volume of 1528.90 MUs.

(ii) Forward Curve based on price of bilateral contracts: A forward curve reflects present day's expectation of prices for a future period. The forward curve of electricity prices are based on sale prices of bilateral contracts executed by traders. The price of each contract for each day is taken into consideration while constructing the forward curve. On the basis of these prices, the weighted average price for each day is calculated using various sale prices of contracts for delivery on that particular day.

Figure-8 represents the forward curve of electricity sale prices for the period from 1st June, 2018 to 29th September, 2018 based on the bilateral contracts⁴ executed till June, 2018. Forward curves have been drawn for the contracts executed in May, 2018 and June, 2018 for the purpose of comparison. It is observed that forward contract prices are

⁴Excluding Banking/Swapping contracts

significantly higher during September 2018 for the contracts executed in June, 2018 compared to the contracts executed in May, 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.

The details of REC transactions for the month of May, 2018 are shown in Table-20. The market clearing volume of solar RECs transacted on IEX and PXIL were 393822 and 520590 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 324029 and 77580 respectively and the weighted average market clearing price of these RECs was ₹1011/MWh in IEX and ₹1000/MWh in PXIL.

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 0.14 and 0.23 for IEX and PXIL respectively. For non-solar RECs, the ratio of buy bids to sell bids was 1.28 and 1.82 for IEX and PXIL respectively.

VII: Inferences:

- The percentage of short-term transactions of electricity to total electricity generation was 10.90%.
- Of the total short-term transactions, bilateral constitutes 42.88% (30.48% through traders and term-ahead contracts on power exchanges and 12.39% directly between distribution companies) followed by 40.77% through day ahead collective transactions on power exchanges and 16.35% through DSM (Table-1 & Figure-1). There were no transactions in Day Ahead Market of PXIL during May, 2018.
- Top 5 trading licensees had a share of 79.11% 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 0.24, indicating moderate concentration of market power.
- The weighted average price of electricity transacted through trading licensees was ₹4.17/kWh. The weighted average prices of electricity transacted through IEX was ₹4.76/kWh.
- The average price of electricity transacted through DSM was ₹2.59/kWh.
- Top 5 electricity selling regional entities were Sembcorp Gayatri Power Ltd., Telangana, Damodar Valley Corporation, Madhya Pradesh and Jaypee Nigrie Super Thermal Power Project. Top 5 electricity purchasing regional entities were Gujarat, Uttar Pradesh, Maharashtra, Bihar and West Bengal.
- During the month, the volume of electricity that could not be cleared in IEX due to congestion was 1.05% of the unconstrained cleared volume. In terms of time, congestion occurred was 26.78% in IEX.
- In June 2018, 45.6% of the bilateral contracts were executed for duration of up to one week, 54.4% of the contracts were executed for duration of more than a week and up to one month, while no contracts were executed for duration of more than one month.

- The forward curve of electricity sale prices for the period from 1st June, 2018 to 29th September, 2018 based on the bilateral contracts⁵ executed till June, 2018 shows that forward contract prices are significantly higher during September 2018 for the contracts executed in June, 2018 compared to the contracts executed in May, 2018.
- The market clearing volume of solar RECs transacted on IEX and PXIL were 393822 and 520590 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 324029 and 77580 respectively and the weighted average market clearing price of these RECs was ₹1011/MWh in IEX and ₹1000/MWh in PXIL.

⁵*Excluding Banking/Swapping contracts*

Table-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (ALL INDIA), MAY 2018				
Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	5169.73	42.88	4.67
	(i) Through Traders and PXs	3675.59	30.48	3.32
	(ii) Direct	1494.14	12.39	1.35
2	Through Power Exchanges	4915.98	40.77	4.44
	(i) IEX	4915.98	40.77	4.44
	(ii) PXIL	0.00	0.00	0.000
3	Through DSM	1971.35	16.35	1.78
	Total	12057.06	-	10.90
	Total Generation	110606.21	-	-

Source: NLDC

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

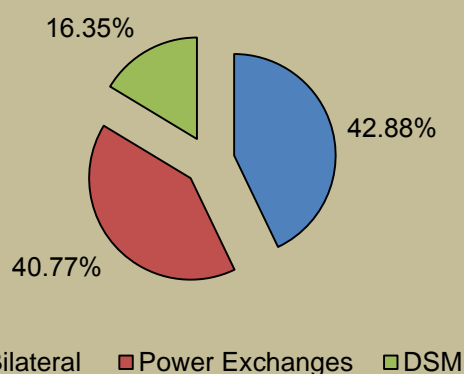
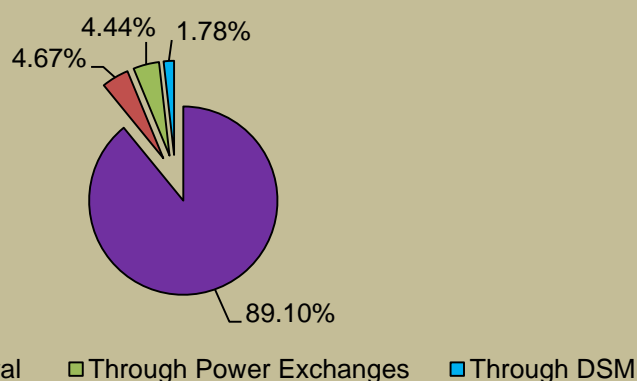


Figure-2: Volume of Various Kinds of Electricity Transactions in Total Electricity Generation, May 2018



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

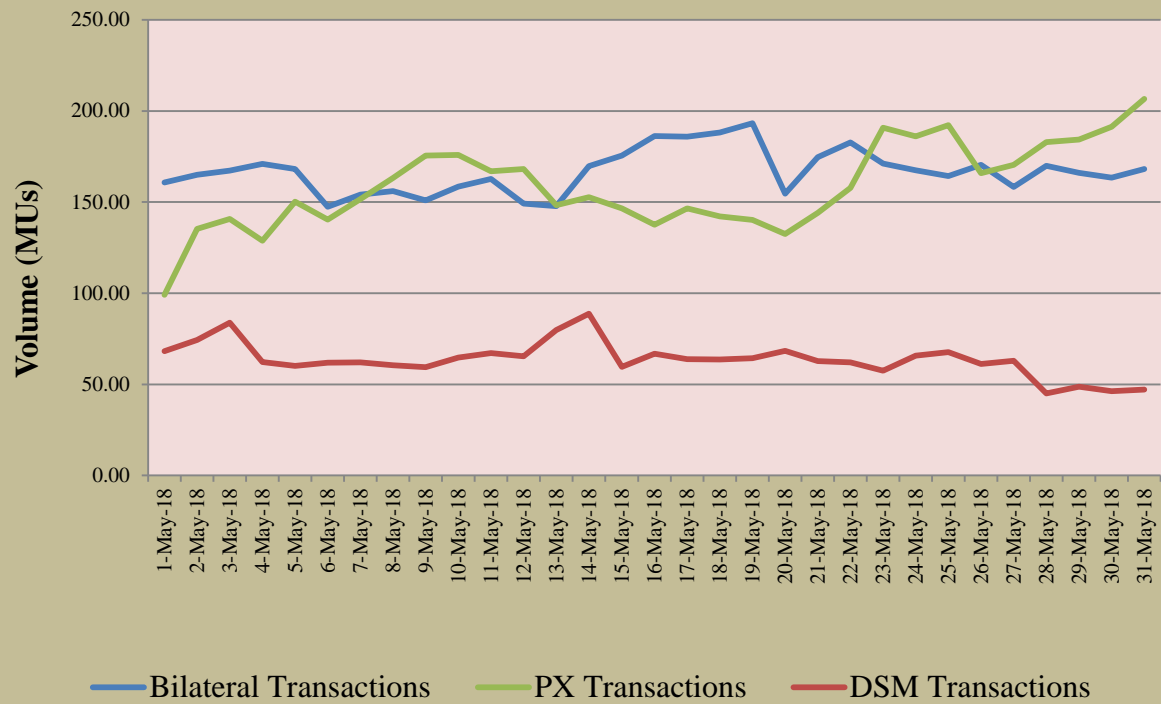


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, MAY 2018			
Sr.No	Name of the Trading Licensee	% Share in total Volume transacted by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd.	45.52	0.2072
2	NTPC VidyutVyapar Nigam Ltd.	13.57	0.0184
3	Manikaran Power Ltd.	8.32	0.0069
4	Mittal Processors (P) Ltd.	6.35	0.0040
5	Arunachal Pradesh Power Corporation (P) ltd	5.36	0.0029
6	Tata Power Trading Company (P) Ltd.	4.05	0.0016
7	JSW Power Trading Company Ltd	3.49	0.0012
8	GMR Energy Trading Ltd.	3.33	0.0011
9	Adani Enterprises Ltd.	2.27	0.0005
10	Jaiprakash Associates Ltd.	2.01	0.0004
11	Essar Electric Power Development Corp. Ltd.	1.73	0.0003
12	Knowledge Infrastructure Systems (P) Ltd	1.41	0.0002
13	RPG Power Trading Company Ltd.	0.65	0.0000
14	Statkraft Markets Pvt. Ltd.	0.61	0.0000
15	Gita Power & Infrastructure Private Limited	0.34	0.0000
16	Instinct Infra & Power Ltd.	0.31	0.0000
17	National Energy Trading & Services Ltd.	0.18	0.0000
18	IPCL Power Trading Pvt. Ltd.	0.17	0.0000
19	Customized Energy Solutions India (P) Ltd.	0.14	0.0000
20	Shree Cement Ltd.	0.13	0.0000
21	My Home Power Private Ltd.	0.07	0.0000
22	Phillip Commodities India (P) Ltd.	0.01	0.0000
23	Parshavanath Power Projects Private Limited	0.001	0.0000
TOTAL		100.00%	0.2449
Top 5 trading licensees		79.11%	
<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>			

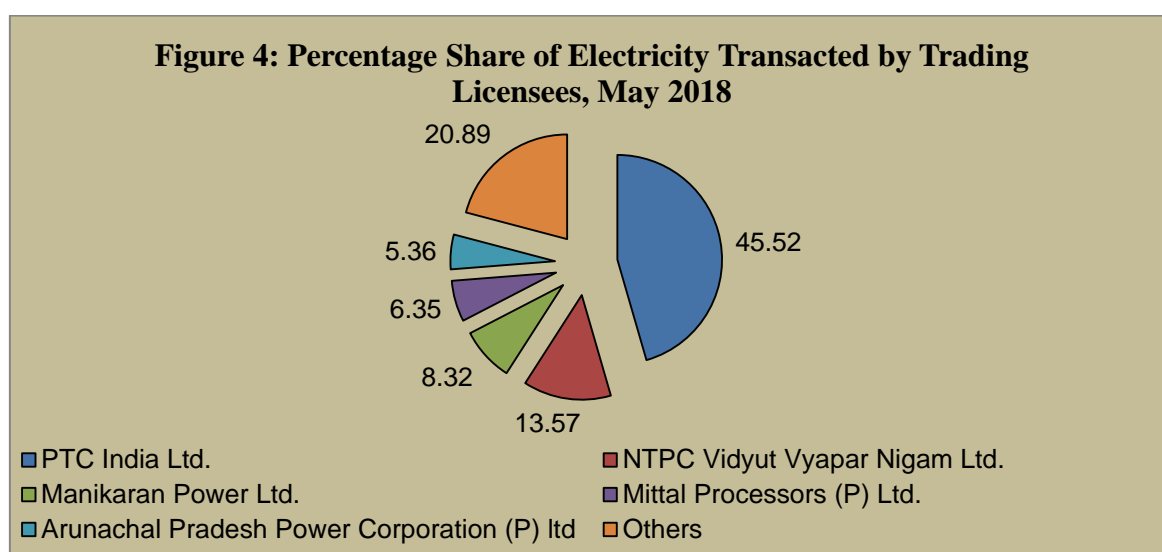


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, MAY 2018		
Sr.No	Item	Sale Price of Traders (₹/kWh)
1	Minimum	2.48
2	Maximum	5.50
3	Weighted Average	4.17

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), MAY 2018		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	4.15
2	PEAK	4.28
3	OFF PEAK	4.44

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, MAY 2018			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	1.95	-
2	Maximum	11.78	-
3	Weighted Average	4.76	-

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, MAY 2018			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	37.14	5.95
2	Day Ahead Contingency Contracts	64.55	5.38
3	Daily Contracts	151.20	4.18
	Total	252.89	4.75

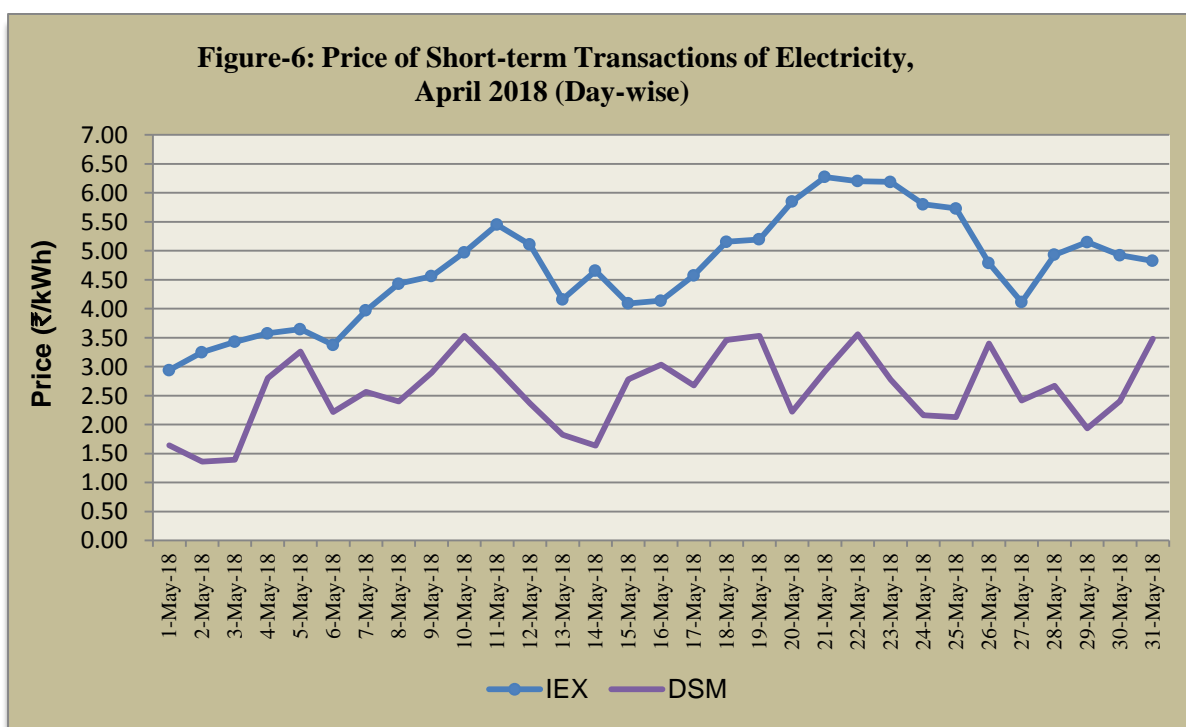
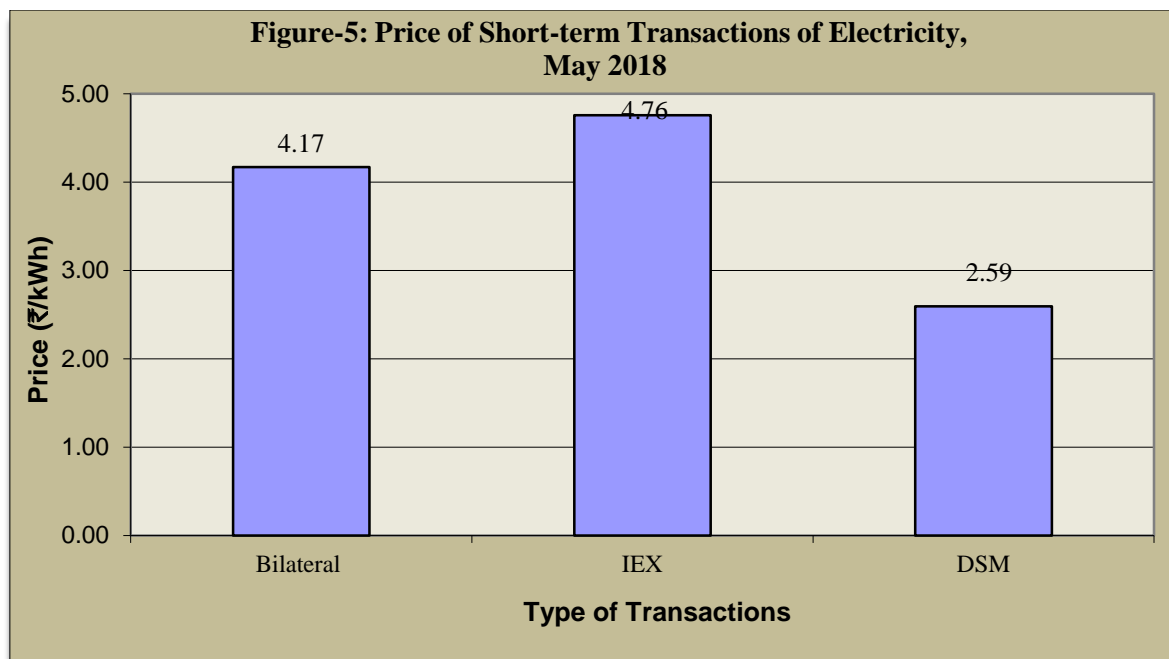
Source: IEX

Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, MAY 2018			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	53.21	5.54

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH DSM, MAY 2018		
Sr.No	Item	Price in All India Grid (₹/kWh)
1	Minimum	0.00
2	Maximum	8.24
3	Average	2.59

Source: NLDC



Note: During the month, no transactions were recorded in PXIL.

Table-9: VOLUME OF ELECTRICITY SOLD THROUGH BILATERAL, MAY 2018		
Name of the Entity	Volume of Sale (MUs)	% of Volume
SEMBCORP	558.22	10.89
J & K	545.97	10.65
DVC	538.61	10.51
HIMACHAL PRADESH	420.24	8.20
MP	372.63	7.27
GMR CHATTISGARH	298.86	5.83
JAYPEE NIGRIE	296.09	5.78
WEST BENGAL	206.11	4.02
ILF&S	165.61	3.23
ESSAR POWER	155.60	3.04
JINDAL STAGE-II	148.80	2.90
ADHUNIK POWER LTD	139.52	2.72
JITPL	137.25	2.68
JINDAL POWER	99.44	1.94
SKS POWER	86.65	1.69
SHREE CEMENT	82.78	1.62
PUNJAB	78.00	1.52
TELANGANA	57.90	1.13
HARYANA	53.56	1.05
MAHARASHTRA	52.17	1.02
THERMAL POWERTECH	50.74	0.99
ONGC PALATANA	48.36	0.94
DB POWER	45.75	0.89
SIKKIM	39.78	0.78
CHHATTISGARH	39.01	0.76
KARNATAKA	35.02	0.68
MB POWER	33.74	0.66
TAMIL NADU	32.92	0.64
DAGACHU	29.20	0.57
KARCHAM WANGTOO	28.24	0.55
LANCO BUDHIL	28.11	0.55
CHUZACHEN HEP	22.81	0.45
GUJARAT	22.07	0.43
ANDHRA PRADESH	20.20	0.39
MANIPUR	16.86	0.33
AD HYDRO	13.44	0.26
KISHAN GANGA HEP	11.51	0.22
DIKCHU HEP	11.42	0.22
TASHIDENG HEP	11.42	0.22
JORETHANG	11.03	0.22
LANKO_AMK	9.86	0.19
TRN ENERGY	9.10	0.18
ODISHA	8.44	0.16
MEGHALAYA	7.88	0.15
MIZORAM	7.30	0.14
DGEN MEGA POWER	6.80	0.13
TEESTA STG3	6.10	0.12
RAJASTHAN	6.09	0.12
JHARKHAND	4.18	0.08
KERALA	3.09	0.06
DELHI	2.42	0.05
GMR KAMALANGA	2.16	0.04
Total	5124.78	100.00
Volume Sold by top 5 Regional Entities	2435.66	47.53

Table-10: VOLUME OF ELECTRICITY PURCHASED THROUGH BILATERAL, MAY 2018		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
UTTAR PRADESH	1106.69	21.41
GUJARAT	420.36	8.13
DELHI	407.64	7.89
KARNATAKA	394.04	7.62
ANDHRA PRADESH	337.72	6.53
MAHARASHTRA	336.26	6.51
PUNJAB	279.00	5.40
WEST BENGAL	263.88	5.10
BIHAR	216.72	4.19
CHHATTISGARH	215.12	4.16
BANGLADESH	183.77	3.56
HARYANA	178.40	3.45
ESSAR STEEL	156.87	3.03
JHARKHAND	143.78	2.78
ODISHA	142.85	2.76
ASSAM	97.45	1.89
HIMACHAL PRADESH	97.23	1.88
NEPAL(NVVN)	86.40	1.67
UTTARAKHAND	31.02	0.60
TAMIL NADU	18.48	0.36
GOA	16.39	0.32
TELANGANA	11.76	0.23
MP	10.96	0.21
SIKKIM	8.43	0.16
J & K	4.61	0.09
RAJASTHAN	0.90	0.02
KERALA	0.80	0.02
MEGHALAYA	0.73	0.01
DVC	0.42	0.01
MANIPUR	0.24	0.00
DADRA & NAGAR HAVELI	0.22	0.00
TOTAL	5169.12	100.00
Volume Purchased by top 5 Regional Entities	2666.45	51.58

Table-11: VOLUME OF ELECTRICITY SOLD THROUGH POWER EXCHANGES, MAY 2018		
Name of the Entity	Volume of Sale (MUs)	% of Volume
TELANGANA	744.06	15.14
DB POWER	349.13	7.10
TEESTA STG3	333.11	6.78
SEMBBCORP	330.65	6.73
DELHI	233.58	4.75
MP	189.94	3.86
ODISHA	144.99	2.95
PUNJAB	137.60	2.80
MB POWER	127.04	2.58
KARNATAKA	127.00	2.58
JAYPEE NIGRIE	127.00	2.58
ESSAR POWER	126.04	2.56
JINDAL POWER	117.84	2.40
HIMACHAL PRADESH	114.47	2.33
SHREE CEMENT	93.08	1.89
GUJARAT	88.20	1.79
SKS POWER	87.97	1.79
SIMHAPURI	87.83	1.79
ILF&S	73.44	1.49
GMR CHATTISGARH	72.97	1.48
DVC	64.28	1.31
NLC	53.08	1.08
ASSAM	51.79	1.05
ANDHRA PRADESH	50.72	1.03
SPECTRUM	50.33	1.02
ADHUNIK POWER LTD	50.11	1.02
ACBIL	46.02	0.94
DIKCHU HEP	44.34	0.90
TRIPURA	42.71	0.87
THERMAL POWERTECH	38.43	0.78
GMR KAMALANGA	37.85	0.77
MAHARASHTRA	36.63	0.75
AD HYDRO	36.38	0.74
MEGHALAYA	34.11	0.69
NTPC STATIONS-NER	33.15	0.67
JHABUA POWER_MP	32.77	0.67
RAJASTHAN	32.33	0.66
MARUTI COAL	32.29	0.66
KERALA	32.25	0.66
JINDAL STAGE-II	31.15	0.63
CHHATTISGARH	30.11	0.61
WEST BENGAL	29.16	0.59

UTTAR PRADESH	28.74	0.58
SAINJ HEP	28.15	0.57
JITPL	24.37	0.50
KISHAN GANGA HEP	24.06	0.49
TAMIL NADU	23.71	0.48
TRN ENERGY	19.71	0.40
CHUZACHEN HEP	17.73	0.36
SIKKIM	17.69	0.36
NTPC STATIONS-SR	17.33	0.35
BALCO	17.24	0.35
MIZORAM	14.57	0.30
TASHIDENG HEP	14.48	0.29
JORETHANG	13.13	0.27
KARCHAM WANGTOO	9.25	0.19
MEENAKSHI	7.93	0.16
MANIPUR	7.59	0.15
DADRA & NAGAR HAVELI	5.68	0.12
BRBCL, NABINAGAR	5.37	0.11
NTPC STATIONS-WR	4.44	0.09
LANCO BUDHIL	3.78	0.08
HARYANA	2.98	0.06
UTTARAKHAND	2.62	0.05
MALANA	2.47	0.05
CHANDIGARH	2.28	0.05
J & K	1.63	0.03
GOA	1.54	0.03
DHARIWAL POWER	1.29	0.03
EMCO	0.18	0.00
NAGALAND	0.09	0.00
ONGC PALATANA	0.04	0.00
Total	4915.98	100.00
Volume sold by top 5 Regional Entities	1990.53	40.49

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

Name of the Entity	Volume of Purchase (MUs)	% of Volume
GUJARAT	1125.75	22.90
MAHARASHTRA	759.64	15.45
BIHAR	557.07	11.33
WEST BENGAL	398.85	8.11
ODISHA	331.92	6.75
J & K	320.38	6.52
TAMIL NADU	199.94	4.07
ANDHRA PRADESH	183.08	3.72
RAJASTHAN	182.76	3.72
UTTARAKHAND	149.46	3.04
KARNATAKA	108.71	2.21
HARYANA	106.63	2.17
HIMACHAL PRADESH	75.57	1.54
ASSAM	68.56	1.39
TELANGANA	63.35	1.29
JHARKHAND	52.73	1.07
GOA	42.85	0.87
UTTAR PRADESH	42.15	0.86
DELHI	35.30	0.72
ESSAR STEEL	26.64	0.54
KERALA	16.86	0.34
MP	16.03	0.33
DAMAN AND DIU	12.52	0.25
CHANDIGARH	11.19	0.23
MEGHALAYA	9.42	0.19
CHHATTISGARH	8.02	0.16
DADRA & NAGAR HAVELI	5.21	0.11
MANIPUR	2.84	0.06
ARUNACHAL PRADESH	0.90	0.02
NAGALAND	0.87	0.02
TRIPURA	0.73	0.01
SIKKIM	0.01	0.00
TOTAL	4915.98	100.00
Volume purchased by top 5 Regional Entities	3173.23	64.55

Table-13: VOLUME OF ELECTRICITY UNDER DRAWAL (EXPORTED) THROUGH DSM, MAY 2018		
Name of the Entity	Volume of Underdrawal (MUs)	% of Volume
KARNATAKA	90.02	5.34
UTTAR PRADESH	89.03	5.28
ANDHRA PRADESH	80.63	4.79
NTPC STATIONS-WR	79.84	4.74
TAMIL NADU	66.62	3.95
SASAN UMPP	66.54	3.95
BIHAR	62.66	3.72
TELANGANA	59.84	3.55
MP	57.00	3.38
GUJARAT	51.63	3.06
J & K	48.14	2.86
NHPC STATIONS	45.59	2.71
MAHARASHTRA	45.24	2.68
PUNJAB	44.75	2.66
RAJASTHAN	43.60	2.59
DELHI	42.88	2.55
NLC	42.61	2.53
NTPC STATIONS-ER	42.12	2.50
NTPC STATIONS-NR	36.97	2.19
NTPC STATIONS-SR	30.88	1.83
UTTARAKHAND	29.16	1.73
CHHATTISGARH	28.58	1.70
HARYANA	26.97	1.60
WEST BENGAL	24.92	1.48
ESSAR STEEL	21.76	1.29
TRIPURA	19.48	1.16
NJPC	16.64	0.99
DVC	16.35	0.97
ASSAM	15.78	0.94
JHARKHAND	15.66	0.93
TEESTA HEP	14.89	0.88
GOA	14.84	0.88
HIMACHAL PRADESH	13.10	0.78
MB POWER	12.88	0.76
JAYPEE NIGRIE	11.87	0.70
MEGHALAYA	11.51	0.68
TEESTA STG3	11.19	0.66
MIZORAM	10.64	0.63
ODISHA	10.30	0.61
KARCHAM WANGTOO	9.42	0.56
LANKO_AMK	9.34	0.55
NEEPCO STATIONS	9.01	0.53
BANGLADESH	8.31	0.49
JINDAL STAGE-II	7.84	0.47
SIKKIM	7.77	0.46
CGPL	7.57	0.45
ARUNACHAL PRADESH	7.57	0.45
EMCO	7.42	0.44
GMR CHATTISGARH	6.90	0.41

PONDICHERRY	6.60	0.39
GMR KAMALANGA	6.51	0.39
MANIPUR	5.99	0.36
NEPAL(NVVN)	5.94	0.35
NAGALAND	5.75	0.34
DB POWER	5.74	0.34
NSPCL	5.49	0.33
ADHUNIK POWER LTD	5.08	0.30
DIKCHU HEP	5.03	0.30
BALCO	4.85	0.29
CHUZACHEN HEP	4.79	0.28
JORETHANG	4.54	0.27
THERMAL POWERTECH	4.53	0.27
TASHIDENG HEP	4.40	0.26
JHABUA POWER_MP	4.26	0.25
KERALA	4.03	0.24
ESSAR POWER	4.02	0.24
KSK MAHANADI	3.95	0.23
AD HYDRO	3.90	0.23
JINDAL POWER	3.56	0.21
URI-2	3.28	0.19
NTPC STATIONS-NER	3.11	0.18
RANGANADI HEP	3.05	0.18
SEMBCORP	3.02	0.18
TRN ENERGY	2.93	0.17
ONGC PALATANA	2.77	0.16
RKM POWER	2.67	0.16
SKS POWER	2.46	0.15
RANGIT HEP	2.40	0.14
DCPP	2.18	0.13
ILF&S	2.07	0.12
MAITHON POWER LTD	1.98	0.12
JITPL	1.93	0.11
NETCL VALLUR	1.89	0.11
BRBCL, NABINAGAR	1.75	0.10
DADRA & NAGAR HAVELI	1.74	0.10
RGPPL (DABHOL)	1.73	0.10
DHARIWAL POWER	1.72	0.10
ACBIL	1.67	0.10
LANCO BUDHIL	1.21	0.07
COASTGEN	1.20	0.07
SHREE CEMENT	1.06	0.06
CHANDIGARH	0.99	0.06
LOKTAK	0.94	0.06
SIMHAPURI	0.82	0.05
DAMAN AND DIU	0.54	0.03
DOYANG HEP	0.31	0.02
MEENAKSHI	0.24	0.01
MALANA	0.12	0.01
Total	1684.97	100.00
Volume Exported by top 5 Regional Entities	406.14	24.10

Table-14: VOLUME OF ELECTRICITY OVER DRAWAL (IMPORTED) THROUGH DSM, MAY 2018		
Name of the Entity	Volume of Over drawal (MUs)	% of Volume
RAJASTHAN	157.09	7.60
HARYANA	131.25	6.35
UTTAR PRADESH	109.12	5.28
MAHARASHTRA	86.57	4.19
WEST BENGAL	84.70	4.10
ODISHA	81.87	3.96
J & K	81.39	3.94
NTPC STATIONS-NR	73.57	3.56
HIMACHAL PRADESH	73.44	3.55
TAMIL NADU	68.88	3.33
NTPC STATIONS-WR	68.67	3.32
DVC	60.06	2.91
NTPC STATIONS-SR	56.85	2.75
UTTARAKHAND	50.43	2.44
ANDHRA PRADESH	49.59	2.40
GUJARAT	46.70	2.26
PUNJAB	44.90	2.17
KARNATAKA	43.19	2.09
NTPC STATIONS-ER	41.37	2.00
MP	40.66	1.97
BIHAR	38.16	1.85
JHARKHAND	36.68	1.77
TELANGANA	34.27	1.66
KERALA	31.70	1.53
CHANDIGARH	30.73	1.49
NETCL VALLUR	24.68	1.19
DAMAN AND DIU	24.08	1.17
ASSAM	21.55	1.04
DELHI	20.88	1.01
CHHATTISGARH	19.81	0.96
ESSAR STEEL	16.19	0.78
GMR CHATTISGARH	14.68	0.71
NLC	14.59	0.71
SEMBICORP	14.52	0.70
DADRA & NAGAR HAVELI	13.95	0.67
GMR KAMALANGA	13.78	0.67
THERMAL POWERTECH	13.64	0.66
DAGACHU	12.65	0.61
CGPL	12.14	0.59
GOA	10.31	0.50
JINDAL STAGE-II	9.97	0.48
NTPC STATIONS-NER	9.78	0.47
ARUNACHAL PRADESH	8.31	0.40
JHABUA POWER_MP	8.26	0.40
ILF&S	8.22	0.40
ACBIL	7.84	0.38
MB POWER	6.86	0.33
KARCHAM WANGTOO	6.54	0.32
NHPC STATIONS	6.50	0.31
SKS POWER	6.17	0.30

LANCO BUDHIL	6.02	0.29
TASHIDENG HEP	5.63	0.27
RGPL (DABHOL)	5.45	0.26
NJPC	5.28	0.26
PONDICHERRY	5.08	0.25
AD HYDRO	4.95	0.24
BALCO	4.43	0.21
TRIPURA	4.22	0.20
NEPAL(NVVN)	4.21	0.20
TEESTA STG3	4.20	0.20
JORETHANG	4.15	0.20
SHREE CEMENT	4.03	0.20
SIKKIM	3.97	0.19
JINDAL POWER	3.81	0.18
MAITHON POWER LTD	3.78	0.18
DIKCHU HEP	3.50	0.17
NAGALAND	3.36	0.16
COASTGEN	3.13	0.15
EMCO	3.07	0.15
MANIPUR	2.73	0.13
BANGLADESH	2.64	0.13
SIMHAPURI	2.48	0.12
NSPCL	2.18	0.11
MEENAKSHI	2.14	0.10
RKM POWER	2.09	0.10
JAYPEE NIGRIE	1.95	0.09
SASAN UMPP	1.77	0.09
CHUZACHEN HEP	1.67	0.08
ADHUNIK POWER LTD	1.36	0.07
ESSAR POWER	1.33	0.06
RANGANADI HEP	1.23	0.06
DCPP	1.13	0.05
JITPL	1.11	0.05
MEGHALAYA	1.09	0.05
MIZORAM	1.06	0.05
KSK MAHANADI	1.05	0.05
ONGC PALATANA	1.00	0.05
NEEPCO STATIONS	0.95	0.05
BRBCL, NABINAGAR	0.92	0.04
LANKO KONDAPALLI	0.81	0.04
DB POWER	0.76	0.04
DHARIWAL POWER	0.61	0.03
KORBA WEST POWER	0.53	0.03
LANKO_AMK	0.47	0.02
RANGIT HEP	0.35	0.02
TRN ENERGY	0.35	0.02
MALANA	0.25	0.01
LOKTAK	0.22	0.01
DOYANG HEP	0.14	0.01
TOTAL	2066.58	100.00
Volume Imported by top 5 Regional Entities	568.73	27.52

Table-15: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY-WISE), MAY 2018		
Sr.No.	Name of the Entity	Total volume of net short-term transactions of electricity*
1	GUJARAT	1430.90
2	UTTAR PRADESH	1140.20
3	MAHARASHTRA	1048.43
4	BIHAR	749.30
5	WEST BENGAL	487.23
6	ANDHRA PRADESH	418.84
7	ODISHA	392.92
8	HARYANA	332.79
9	KARNATAKA	293.90
10	RAJASTHAN	258.74
11	JHARKHAND	213.35
12	UTTARAKHAND	199.13
13	DELHI	184.94
14	BANGLADESH	178.09
15	ESSAR STEEL	177.94
16	TAMIL NADU	164.05
17	CHHATTISGARH	145.25
18	ASSAM	119.85
19	NEPAL(NVVN)	84.67
20	PUNJAB	63.55
21	GOA	53.16
22	CHANDIGARH	38.66
23	NTPC STATIONS-NR	36.60
24	DAMAN AND DIU	36.06
25	NETCL VALLUR	22.80
26	DADRA & NAGAR HAVELI	11.55
27	KERALA	10.00
28	NTPC STATIONS-SR	8.64
29	CGPL	4.57
30	RGPL (DABHOL)	3.72
31	COASTGEN	1.93
32	PONDICHERRY	-1.52
33	RANGANADI HEP	-1.82
34	NAGALAND	-1.89
35	RANGIT HEP	-2.05
36	MALANA	-2.35
37	DHARIWAL POWER	-2.40
38	KSK MAHANADI	-2.90
39	URI-2	-3.14
40	NSPCL	-3.31
41	EMCO	-4.53
42	MEENAKSHI	-6.04
43	BRBCL, NABINAGAR	-6.20
44	DGEN MEGA POWER	-6.80
45	NEEPCO STATIONS	-8.06
46	NJPC	-11.36
47	TEESTA HEP	-14.86
48	NTPC STATIONS-WR	-15.61
49	DAGACHU	-16.54
50	LANKO_AMK	-18.73

51	BALCO	-19.54
52	JORETHANG	-24.55
53	MANIPUR	-24.63
54	TASHIDENG HEP	-24.67
55	NTPC STATIONS-NER	-26.48
56	LANCO BUDHIL	-27.08
57	SAINJ HEP	-28.15
58	JHABUA POWER_MP	-30.74
59	TRN ENERGY	-31.39
60	MIZORAM	-31.44
61	MARUTI COAL	-32.29
62	GMR KAMALANGA	-32.73
63	KISHAN GANGA HEP	-35.57
64	NHPC STATIONS	-39.09
65	KARCHAM WANGTOO	-40.37
66	ACBIL	-40.60
67	MEGHALAYA	-42.25
68	CHUZACHEN HEP	-43.65
69	AD HYDRO	-48.77
70	ONGC PALATANA	-50.18
71	SPECTRUM	-50.33
72	SIKKIM	-52.84
73	TRIPURA	-57.24
74	DIKCHU HEP	-57.29
75	SASAN UMPP	-64.77
76	THERMAL POWERTECH	-80.05
77	NLC	-81.10
78	SIMHAPURI	-86.49
79	JITPL	-162.44
80	MB POWER	-166.80
81	SKS POWER	-170.91
82	SHREE CEMENT	-172.88
83	JINDAL STAGE-II	-177.81
84	J & K	-189.35
85	ADHUNIK POWER LTD	-193.35
86	JINDAL POWER	-217.03
87	ILF&S	-232.90
88	ESSAR POWER	-284.32
89	HIMACHAL PRADESH	-301.57
90	TEESTA STG3	-346.19
91	GMR CHATTISGARH	-364.04
92	DB POWER	-399.85
93	JAYPEE NIGRIE	-433.00
94	MP	-551.91
95	DVC	-558.77
96	TELANGANA	-752.43
97	SEMBCORP	-877.37
* 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, MAY 2018		
	Details of Congestion	IEX
A	Unconstrained Cleared Volume* (MUs)	4969.75
B	Actual Cleared Volume and hence scheduled (MUs)	4917.54
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	52.21
D	Volume of electricity that could not be cleared as % to Unconstrained Cleared Volume	1.05%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	26.78%
F	Congestion occurrence (%) time block wise	
	0.00 - 6.00 hours	26.85%
	6.00 - 12.00 hours	44.04%
	12.00 - 18.00 hours	24.22%
	18.00 - 24.00 hours	4.89%
* This power would have been scheduled had there been no congestion.		
Source: IEX		

Table-17: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY IN INDIA (DAY-WISE) (MUs), MAY 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-May-18	113.37	47.50	99.15	-	68.12	3259.97
2-May-18	114.56	50.40	135.27	-	74.27	3363.25
3-May-18	116.47	50.90	140.82	-	83.74	3268.74
4-May-18	123.05	47.88	128.89	-	62.17	3445.81
5-May-18	121.16	47.05	150.30	-	60.13	3579.34
6-May-18	100.31	47.08	140.44	-	61.86	3416.20
7-May-18	107.67	46.42	151.72	-	62.03	3530.27
8-May-18	110.34	45.68	163.30	-	60.47	3496.01
9-May-18	105.54	45.50	175.60	-	59.38	3532.98
10-May-18	109.46	49.02	175.93	-	64.66	3592.59
11-May-18	116.42	46.38	167.00	-	67.22	3579.40
12-May-18	106.50	42.72	168.21	-	65.36	3493.21
13-May-18	104.97	42.74	148.25	-	79.85	3353.37
14-May-18	127.03	42.80	152.78	-	88.80	3295.55
15-May-18	129.28	46.28	146.57	-	59.52	3539.72
16-May-18	143.59	42.71	137.54	-	66.70	3558.44
17-May-18	139.16	46.67	146.56	-	63.76	3608.83
18-May-18	140.34	47.81	142.17	-	63.70	3614.48
19-May-18	147.08	46.19	140.19	-	64.29	3611.41
20-May-18	106.35	48.35	132.53	-	68.40	3481.71
21-May-18	124.24	50.40	144.17	-	62.72	3652.77
22-May-18	129.15	53.61	157.75	-	61.99	3790.83
23-May-18	117.92	53.20	190.87	-	57.47	3804.28
24-May-18	114.43	53.11	186.13	-	65.81	3765.82
25-May-18	115.62	48.70	192.18	-	67.66	3723.97
26-May-18	118.79	51.69	165.85	-	61.21	3744.34
27-May-18	108.31	50.11	170.49	-	63.00	3671.58
28-May-18	117.91	52.04	182.91	-	44.95	3741.54
29-May-18	114.52	51.59	184.34	-	48.67	3638.68
30-May-18	113.27	50.20	191.42	-	46.26	3696.79
31-May-18	118.79	49.41	206.69	-	47.15	3754.33
Total	3675.59	1494.14	4915.98	0.00	1971.35	110606.21
<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>						
<i>Note: No transactions were recorded in PXIL</i>						

Table-18: PRICE OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (DAY-WISE)(₹/kWh), MAY 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-May-18	2.25	4.01	2.94	-	-	-	0.00	3.45	1.64
2-May-18	2.49	5.50	3.25	-	-	-	0.00	3.45	1.36
3-May-18	2.48	5.75	3.43	-	-	-	0.00	5.11	1.40
4-May-18	2.78	5.50	3.57	-	-	-	0.00	5.32	2.80
5-May-18	2.78	6.50	3.65	-	-	-	0.00	8.24	3.26
6-May-18	2.25	5.55	3.38	-	-	-	0.00	3.45	2.22
7-May-18	2.00	6.50	3.97	-	-	-	0.00	6.16	2.56
8-May-18	2.50	6.50	4.43	-	-	-	0.00	5.32	2.40
9-May-18	2.63	7.60	4.56	-	-	-	0.00	6.36	2.89
10-May-18	3.49	8.02	4.97	-	-	-	0.00	6.36	3.53
11-May-18	3.90	8.52	5.45	-	-	-	0.00	6.16	2.97
12-May-18	3.25	7.80	5.11	-	-	-	0.00	5.74	2.37
13-May-18	2.12	6.50	4.16	-	-	-	0.00	3.45	1.83
14-May-18	3.25	6.50	4.65	-	-	-	0.00	3.45	1.64
15-May-18	3.25	5.50	4.09	-	-	-	0.00	5.32	2.78
16-May-18	2.47	5.40	4.14	-	-	-	0.00	6.16	3.04
17-May-18	2.90	6.40	4.57	-	-	-	0.00	5.32	2.68
18-May-18	3.21	7.50	5.15	-	-	-	0.00	6.36	3.46
19-May-18	2.90	8.60	5.20	-	-	-	0.00	6.36	3.53
20-May-18	2.24	10.00	5.85	-	-	-	0.00	5.95	2.22
21-May-18	3.49	11.00	6.27	-	-	-	0.00	7.82	2.92
22-May-18	2.70	11.41	6.20	-	-	-	0.00	6.16	3.56
23-May-18	2.56	10.33	6.19	-	-	-	0.00	6.16	2.78
24-May-18	3.28	11.78	5.80	-	-	-	0.00	4.91	2.16
25-May-18	2.70	9.50	5.73	-	-	-	0.00	6.36	2.13
26-May-18	2.25	8.00	4.79	-	-	-	0.00	8.24	3.40
27-May-18	1.95	7.00	4.11	-	-	-	0.00	5.95	2.42
28-May-18	2.90	9.50	4.93	-	-	-	0.00	6.16	2.67
29-May-18	3.25	8.00	5.15	-	-	-	0.00	5.74	1.94
30-May-18	2.63	8.00	4.92	-	-	-	0.00	5.95	2.40
31-May-18	3.40	8.00	4.82	-	-	-	1.00	8.03	3.48
	1.95#	11.78#	4.76	0.00#	0.00#	0.00	0.00#	8.24#	2.59
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									
Note: No transactions were recorded in PXIL									

Table-19: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY*-WISE) (MUs), MAY 2018										
Name of the Entity	Through Bilateral			Through Power Exchange			Through DSM with Regional Grid			Total Net***
	Sale	Purchase	Net**	Sale	Purchase	Net**	Import (Over Drawl)	Export (Under Drawl)	Net**	
PUNJAB	78.00	279.00	201.00	137.60	0.00	-137.60	44.90	44.75	0.15	63.55
HARYANA	53.56	178.40	124.85	2.98	106.63	103.65	131.25	26.97	104.29	332.79
RAJASTHAN	6.09	0.90	-5.19	32.33	182.76	150.44	157.09	43.60	113.49	258.74
DELHI	2.42	407.64	405.22	233.58	35.30	-198.28	20.88	42.88	-22.00	184.94
UP	0.00	1106.69	1106.69	28.74	42.15	13.41	109.12	89.03	20.09	1140.20
UTTARAKHAN	0.00	31.02	31.02	2.62	149.46	146.84	50.43	29.16	21.28	199.13
HP	420.24	97.23	-323.01	114.47	75.57	-38.89	73.44	13.10	60.33	-301.57
J & K	545.97	4.61	-541.35	1.63	320.38	318.75	81.39	48.14	33.25	-189.35
CHANDIGARH	0.00	0.00	0.00	2.28	11.19	8.91	30.73	0.99	29.74	38.66
MP	372.63	10.96	-361.67	189.94	16.03	-173.90	40.66	57.00	-16.34	-551.91
MAHARASHTRA	52.17	336.26	284.09	36.63	759.64	723.01	86.57	45.24	41.34	1048.43
GUJARAT	22.07	420.36	398.28	88.20	1125.75	1037.55	46.70	51.63	-4.93	1430.90
CHHATTISGARH	39.01	215.12	176.11	30.11	8.02	-22.09	19.81	28.58	-8.77	145.25
GOA	0.00	16.39	16.39	1.54	42.85	41.30	10.31	14.84	-4.53	53.16
DAMAN DIU	0.00	0.00	0.00	0.00	12.52	12.52	24.08	0.54	23.54	36.06
D&N HAVELI	0.41	0.22	-0.19	5.68	5.21	-0.47	13.95	1.74	12.21	11.55
ANDHRA P	20.20	337.72	317.52	50.72	183.08	132.36	49.59	80.63	-31.04	418.84
KARNATAKA	35.02	394.04	359.02	127.00	108.71	-18.29	43.19	90.02	-46.83	293.90
KERALA	3.09	0.80	-2.29	32.25	16.86	-15.39	31.70	4.03	27.67	10.00
TAMIL NADU	32.92	18.48	-14.44	23.71	199.94	176.23	68.88	66.62	2.26	164.05
TELANGANA	57.90	11.76	-46.14	744.06	63.35	-680.71	34.27	59.84	-25.58	-752.43
WEST BENGAL	206.11	263.88	57.77	29.16	398.85	369.68	84.70	24.92	59.78	487.23
ODISHA	8.44	142.85	134.41	144.99	331.92	186.94	81.87	10.30	71.57	392.92
BIHAR	0.00	216.72	216.72	0.00	557.07	557.07	38.16	62.66	-24.49	749.30
JHARKHAND	4.18	143.78	139.60	0.00	52.73	52.73	36.68	15.66	21.02	213.35
SIKKIM	39.78	8.43	-31.36	17.69	0.01	-17.68	3.97	7.77	-3.80	-52.84
DVC	538.61	0.42	-538.19	64.28	0.00	-64.28	60.06	16.35	43.71	-558.77
ASSAM	0.14	97.45	97.31	51.79	68.56	16.78	21.55	15.78	5.77	119.85
MANIPUR	16.86	0.24	-16.62	7.59	2.84	-4.75	2.73	5.99	-3.26	-24.63
MEGHALAYA	7.88	0.73	-7.15	34.11	9.42	-24.68	1.09	11.51	-10.42	-42.25
MIZORAM	7.30	0.00	-7.30	14.57	0.00	-14.57	1.06	10.64	-9.58	-31.44
TRIPURA	0.00	0.00	0.00	42.71	0.73	-41.98	4.22	19.48	-15.26	-57.24
NTPC -NR	0.00	0.00	0.00	0.00	0.00	0.00	73.57	36.97	36.60	36.60
NHPC STN	0.00	0.00	0.00	0.00	0.00	0.00	6.50	45.59	-39.09	-39.09
NJPC	0.00	0.00	0.00	0.00	0.00	0.00	5.28	16.64	-11.36	-11.36
AD HYDRO	13.44	0.00	-13.44	36.38	0.00	-36.38	4.95	3.90	1.05	-48.77
KARCHAM WA	28.24	0.00	-28.24	9.25	0.00	-9.25	6.54	9.42	-2.88	-40.37
SHREE CEME	82.78	0.00	-82.78	93.08	0.00	-93.08	4.03	1.06	2.97	-172.88
LANCO BUDHI	28.11	0.00	-28.11	3.78	0.00	-3.78	6.02	1.21	4.82	-27.08
MALANA	0.00	0.00	0.00	2.47	0.00	-2.47	0.25	0.12	0.13	-2.35
URI-2	0.00	0.00	0.00	0.00	0.00	0.00	0.13	3.28	-3.14	-3.14
SAINJ HEP	0.00	0.00	0.00	28.15	0.00	-28.15	0.00	0.00	0.00	-28.15
KISHAN GANG	11.51	0.00	-11.51	24.06	0.00	-24.06	0.00	0.00	0.00	-35.57
NTPC -WR	0.00	0.00	0.00	4.44	0.00	-4.44	68.67	79.84	-11.17	-15.61
JINDAL POWE	99.44	0.00	-99.44	117.84	0.00	-117.84	3.81	3.56	0.25	-217.03

LANKO_AMK	9.86	0.00	-9.86	0.00	0.00	0.00	0.47	9.34	-8.87	-18.73
NSPCL	0.00	0.00	0.00	0.00	0.00	0.00	2.18	5.49	-3.31	-3.31
ACBIL	0.76	0.00	-0.76	46.02	0.00	-46.02	7.84	1.67	6.17	-40.60
BALCO	1.89	0.00	-1.89	17.24	0.00	-17.24	4.43	4.85	-0.41	-19.54
RGPPL	0.00	0.00	0.00	0.00	0.00	0.00	5.45	1.73	3.72	3.72
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	12.14	7.57	4.57	4.57
DCPP	0.00	0.00	0.00	0.00	0.00	0.00	1.13	2.18	-1.06	-1.06
EMCO	0.00	0.00	0.00	0.18	0.00	-0.18	3.07	7.42	-4.35	-4.53
ESSAR STEEL	0.00	156.87	156.87	0.00	26.64	26.64	16.19	21.76	-5.57	177.94
KSK MAHANA	0.00	0.00	0.00	0.00	0.00	0.00	1.05	3.95	-2.90	-2.90
ESSAR POWE	155.60	0.00	-155.60	126.04	0.00	-126.04	1.33	4.02	-2.69	-284.32
JINDAL STG-II	148.80	0.00	-148.80	31.15	0.00	-31.15	9.97	7.84	2.13	-177.81
DB POWER	45.75	0.00	-45.75	349.13	0.00	-349.13	0.76	5.74	-4.97	-399.85
DHARIWAL PC	0.00	0.00	0.00	1.29	0.00	-1.29	0.61	1.72	-1.11	-2.40
JAYPEE NIGR	296.09	0.00	-296.09	127.00	0.00	-127.00	1.95	11.87	-9.92	-433.00
DGEN MEGA	6.80	0.00	-6.80	0.00	0.00	0.00	0.00	0.00	0.00	-6.80
GMR CHATTIS	298.86	0.00	-298.86	72.97	0.00	-72.97	14.68	6.90	7.79	-364.04
MB POWER	33.74	0.00	-33.74	127.04	0.00	-127.04	6.86	12.88	-6.03	-166.80
MARUTI COAL	0.00	0.00	0.00	32.29	0.00	-32.29	0.00	0.00	0.00	-32.29
SPECTRUM	0.00	0.00	0.00	50.33	0.00	-50.33	0.00	0.00	0.00	-50.33
JHABUA MP	1.97	0.00	-1.97	32.77	0.00	-32.77	8.26	4.26	4.00	-30.74
SASAN UMPP	0.00	0.00	0.00	0.00	0.00	0.00	1.77	66.54	-64.77	-64.77
TRN ENERGY	9.10	0.00	-9.10	19.71	0.00	-19.71	0.35	2.93	-2.58	-31.39
SKS POWER	86.65	0.00	-86.65	87.97	0.00	-87.97	6.17	2.46	3.71	-170.91
NTPC -SR	0.00	0.00	0.00	17.33	0.00	-17.33	56.85	30.88	25.97	8.64
SIMHAPURI	0.32	0.00	-0.32	87.83	0.00	-87.83	2.48	0.82	1.66	-86.49
MEENAKSHI	0.00	0.00	0.00	7.93	0.00	-7.93	2.14	0.24	1.90	-6.04
THERMAL POV	50.74	0.00	-50.74	38.43	0.00	-38.43	13.64	4.53	9.11	-80.05
ILF&S	165.61	0.00	-165.61	73.44	0.00	-73.44	8.22	2.07	6.15	-232.90
NLC	0.00	0.00	0.00	53.08	0.00	-53.08	14.59	42.61	-28.02	-81.10
SEMBICORP	558.22	0.00	-558.22	330.65	0.00	-330.65	14.52	3.02	11.50	-877.37
NETCL VALLU	0.00	0.00	0.00	0.00	0.00	0.00	24.68	1.89	22.80	22.80
MAITHON POW	0.00	0.00	0.00	0.00	0.00	0.00	3.78	1.98	1.80	1.80
ADHUNIK POW	139.52	0.00	-139.52	50.11	0.00	-50.11	1.36	5.08	-3.72	-193.35
CHUZACHEN	22.81	0.00	-22.81	17.73	0.00	-17.73	1.67	4.79	-3.12	-43.65
RANGIT HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.35	2.40	-2.05	-2.05
GMR KAMALA	2.16	0.00	-2.16	37.85	0.00	-37.85	13.78	6.51	7.28	-32.73
JITPL	137.25	0.00	-137.25	24.37	0.00	-24.37	1.11	1.93	-0.82	-162.44
TEESTA HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.04	14.89	-14.86	-14.86
DAGACHU	29.20	0.00	-29.20	0.00	0.00	0.00	12.65	0.00	12.65	-16.54
JORETHANG	11.03	0.00	-11.03	13.13	0.00	-13.13	4.15	4.54	-0.39	-24.55
NEPAL(NVVN)	0.00	86.40	86.40	0.00	0.00	0.00	4.21	5.94	-1.73	84.67
BANGLADESH	0.00	183.77	183.77	0.00	0.00	0.00	2.64	8.31	-5.68	178.09
TEESTA STG3	6.10	0.00	-6.10	333.11	0.00	-333.11	4.20	11.19	-6.99	-346.19
DIKCHU HEP	11.42	0.00	-11.42	44.34	0.00	-44.34	3.50	5.03	-1.53	-57.29
TASHIDENG	11.42	0.00	-11.42	14.48	0.00	-14.48	5.63	4.40	1.23	-24.67

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 June, 2018

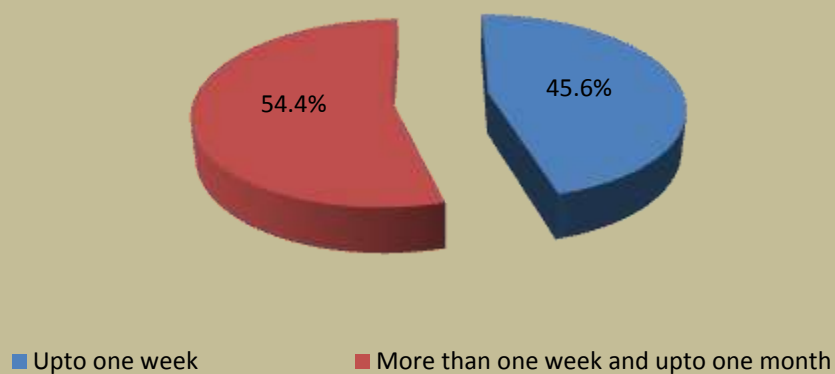


Figure-8: Forward Curve based on Prices of Bilateral Contracts

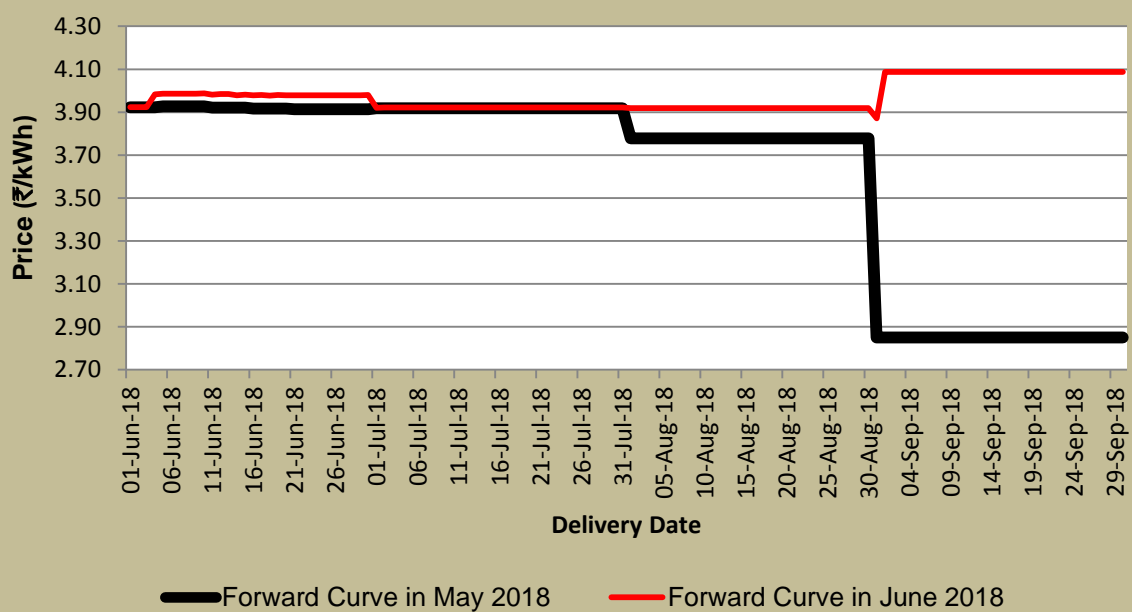


Table-20 : VOLUME AND PRICE OF RENEWABLE ENERGY CERTIFICATES (RECs) TRANSACTED THROUGH POWER EXCHANGES, MAY 2018					
Sr.No.	Details of REC Transactions	IEX		PXIL	
		Solar	Non-Solar	Solar	Non Solar
A	Volume of Buy Bid	393822	480940	520590	150129
B	Volume of Sell Bid	2772666	375613	2225829	82331
C	Ratio of Buy Bid to Sell Bid Volume	0.14	1.28	0.23	1.82
D	Market Clearing Volume (MWh)	393822	324029	520590	77580
E	Weighted average Market Clearing Price (₹/MWh)	1000	1011	1000	1000

Source: IEX and PXIL

Note 1: 1 REC = 1 MWh

Note 2:	<i>Forbearance and Floor Price w.e.f 1st May 2017</i>		
	Type of REC	Floor Price (₹/MWh)	Forbearance Price (₹/MWh)
	Solar	1000.00	2500.00
	Non-Solar	1000.00	2900.00