

Monthly Report on Short-term Transactions of Electricity in India

June, 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	Lanco Budhil Hydro Power Private Limited
LANKOAMK	Lanco Amarkantak Power Private Limited
LANKOKONDAPALLY	Lanco Kondapally 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 **June, 2018** are as under:

I: Volume of Short-term Transactions of Electricity

During June 2018, total electricity generation excluding generation from renewable and captive power plants in India was 102999.16 MUs (Table-1).

Of the total electricity generation, 12927.00 MUs (12.55%) was transacted through short-term, comprising of 5939.20 MUs (5.77%) through bilateral (through traders and term-ahead contracts on power exchanges and directly between distribution companies), followed by 4980.56 MUs (4.84%) through day ahead collective transactions on power exchanges and 2007.24 MUs (1.95%) through DSM (Table-1 & Figure-2).

Of the total short-term transactions, bilateral constitutes 45.94% (36.74% through traders and term-ahead contracts on power exchanges and 9.20% directly between distribution companies) followed by 38.53% through day ahead collective transactions on power exchanges and 15.53% through DSM (Table-1 & Figure-1). Daily volume of short-term transactions is shown in Table-17 & Figure-3.

The percentage share of electricity traded by each trading licensee in the total volume of electricity traded by all the trading licensees is provided in Table-2 & Figure-4. The volume of electricity transacted by the trading licensees includes bilateral transactions and the transactions undertaken through power exchanges. There were 36 trading licensees as on June, 2018. In June, 2018, 23 trading licensees were engaged in short term trading. Top 5 trading licensees had a share of 78.77% in the total volume traded by all the licensees. These are PTC India Ltd., Manikaran Power Ltd., Arunachal Pradesh Power Corporation (P) Ltd., NTPC Vidyut Vyapar Nigam Ltd. and Mittal Processors Pvt. 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 0.2350 for the month of June, 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 4965.17 MUs and 15.39 MUs respectively. The volume of total buy bids and sell bids was 5961.80 MUs and 7918.14 MUs respectively in IEX while the same was 16.43 MUs and 69.73 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 87.63 MUs and 21.67 MUs respectively (Table-6 & Table-7).

II: Price of Short-term Transactions of Electricity

(i) *Price of electricity transacted through Traders:* The minimum, maximum and weighted average sale prices have been computed for the electricity transacted through traders and the sale prices were ₹2.85/kWh, ₹6.50/kWh and ₹4.13/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 ₹4.05/kWh, ₹4.82/kWh and ₹4.48/kWh respectively (Table-4).

(ii) Price of electricity transacted through Power Exchanges: The minimum, maximum and weighted average prices have been computed for the electricity transacted through IEX and PXIL. The minimum, maximum and weighted average prices were ₹1.99/kWh, ₹10.91/kWh and ₹3.86/kWh respectively in IEX and ₹0.00/kWh, ₹8.64/kWh and ₹4.70/kWh respectively in PXIL (Table-5).

The price of electricity transacted through IEX and PXIL in the term-ahead market was ₹4.34/kWh and ₹4.86/kWh respectively (Table-6 and Table-7).

(iii) Price of electricity transacted through DSM: The average deviation settlement price was ₹2.10/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 49.06% of the volume, and these were Himachal Pradesh, Jammu & Kashmir, Sembcorp Gayatri Power Ltd., Andhra Pradesh and Madhya Pradesh. Top 5 regional entities purchased 67.56% of the volume, and these were Uttar Pradesh, Punjab, Delhi, Haryana and Bihar (Table-9& 10).

Of the total power exchange transactions, top 5 regional entities sold 44.97% of the volume, and these were Madhya Pradesh, Teesta Stage 3 Hydro Power Project, Telangana, Delhi and Sembcorp Gayatri Power Ltd. Top 5 regional entities purchased 63.71% of the volume, and these were Gujarat, Bihar, Jammu & Kashmir, Maharashtra and West Bengal (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 26.69% of the volume, and these were Maharashtra, Gujarat, Karnataka, Madhya Pradesh and Punjab (Table-13). Top 5 regional entities overdrew 27.46% of the volume, and these were Rajasthan, Odisha, Haryana, West Bengal and NTPC Stations (Northern region) (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, Himachal Pradesh, Sembcorp Gayatri Power Ltd., Teesta Stage 3 Hydro Power Project and Damador Valley Corporation. Top 5 electricity purchasing regional entities were Gujarat, Uttar Pradesh, Punjab, Bihar and Haryana.

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 June 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 0.40% of the unconstrained cleared volume. In terms of time, congestion occurred was 14.48% in IEX, while no congestion was witnessed in PXIL (Table-16).

V: Bilateral Contracts executed by Traders

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

(i) Duration of bilateral contracts: During July 2018, a total of 57 bilateral contracts (excluding banking/swap contracts) have been executed by traders for the volume of 1216.56 MUs. Figure-7 shows the percentage of contracts categorized according to the period of power supply. It can be observed from the figure that 42.11% of the bilateral contracts were executed for duration of up to one week, 54.39% of the contracts were executed for duration of more than a week and up to one month, 1.75% of the contracts were executed for duration of more than one month and up to three months, while 1.75% of the contracts were executed for duration of more than three months and up to twelve months.

During the month, 73 banking/swapping bilateral contracts were also executed for the volume of 960.06 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 July, 2018 to 29th October, 2018 based on the bilateral contracts⁴ executed till July, 2018.

⁴Excluding Banking/Swapping contracts

Forward curves have been drawn for the contracts executed in June, 2018 and July, 2018 for the purpose of comparison. It is observed that forward contract prices are relatively higher after 15th July 2018 for the contracts executed in July, 2018 compared to the contracts executed in June, 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 June, 2018 are shown in Table-20. The market clearing volume of solar RECs transacted on IEX and PXIL were 288070 and 304331 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 221674 and 82154 respectively and the weighted average market clearing price of these RECs was ₹1150/MWh in IEX and ₹1050/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 0.11 and 0.19 for IEX and PXIL respectively. For non-solar RECs, the ratio of buy bids to sell bids was 2.90 and 2.84 for IEX and PXIL respectively.

VII: Inferences:

- The percentage of short-term transactions of electricity to total electricity generation was 12.55%.
- Of the total short-term transactions, bilateral constitutes 45.94% (36.74% through traders and term-ahead contracts on power exchanges and 9.20% directly between distribution companies) followed by 38.53% through day ahead collective transactions on power exchanges and 15.53% through DSM (Table-1 & Figure-1).
- Top 5 trading licensees had a share of 78.77% in the total volume traded by all the trading licensees.
- The Herfindahl Hirschman Index computed for the volume of electricity traded by trading licensees was 0.2350, indicating moderate concentration of market power.
- The weighted average price of electricity transacted through trading licensees was ₹4.13/kWh. The weighted average price of electricity transacted through IEX and PXIL was ₹3.86/kWh and ₹4.70/kWh respectively.
- The average price of electricity transacted through DSM was ₹2.10/kWh.
- Top 5 electricity selling regional entities were Madhya Pradesh, Himachal Pradesh, Sembcorp Gayatri Power Ltd., Teesta Stage 3 Hydro Power Project and Damador Valley Corporation. Top 5 electricity purchasing regional entities were Gujarat, Uttar Pradesh, Punjab, Bihar and Haryana.
- During the month, the volume of electricity that could not be cleared in IEX due to congestion was 0.40% of the unconstrained cleared volume. In terms of time, congestion occurred was 14.48% in IEX, while no congestion was witnessed in PXIL.
- In July 2018, 42.11% of the bilateral contracts were executed for duration of up to one week, 54.39% of the contracts were executed for duration of more than a week and up to one month, 1.75% of the contracts were executed for duration of more than one month and up to three months, while 1.75% of the contracts were executed for duration of more than three months and up to twelve months.

- The forward curve of electricity sale prices for the period from 1st July, 2018 to 29th October, 2018 based on the bilateral contracts⁵ executed till July, 2018 shows that forward contract prices are relatively higher after 15th July 2018 for the contracts executed in July, 2018 compared to the contracts executed in June, 2018.
- The market clearing volume of solar RECs transacted on IEX and PXIL were 288070 and 304331 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 221674 and 82154 respectively and the weighted average market clearing price of these RECs was ₹1150/MWh in IEX and ₹1050/MWh in PXIL.

⁵*Excluding Banking/Swapping contracts*

Table-1: VOLUME OF SHORT-TERM TRANSACTIONS OF ELECTRICITY (ALL INDIA), JUNE 2018				
Sr.No	Short-term transactions	Volume (MUs)	% to Volume of short-term transactions	% to Total Generation
1	Bilateral	5939.20	45.94	5.77
	(i) Through Traders and PXs	4749.87	36.74	4.61
	(ii) Direct	1189.33	9.20	1.15
2	Through Power Exchanges	4980.56	38.53	4.84
	(i) IEX	4965.17	38.41	4.82
	(ii) PXIL	15.39	0.12	0.015
3	Through DSM	2007.24	15.53	1.95
	Total	12927.00	-	12.55
	Total Generation	102999.16	-	-

Source: NLDC

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

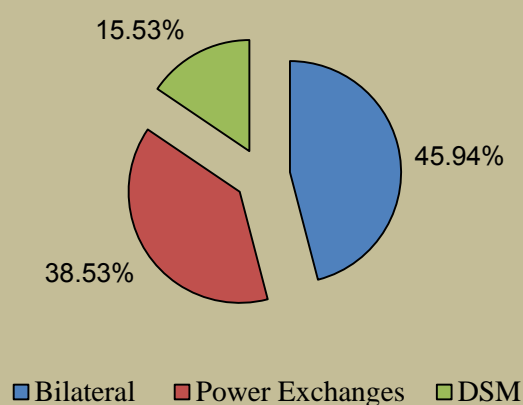
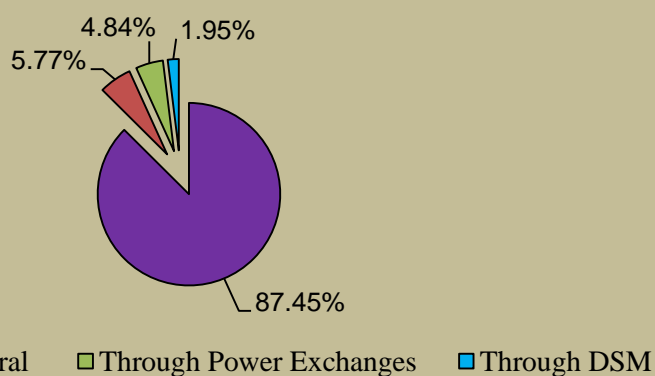


Figure-2: Volume of Various Kinds of Electricity Transactions in Total Electricity Generation, June 2018



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

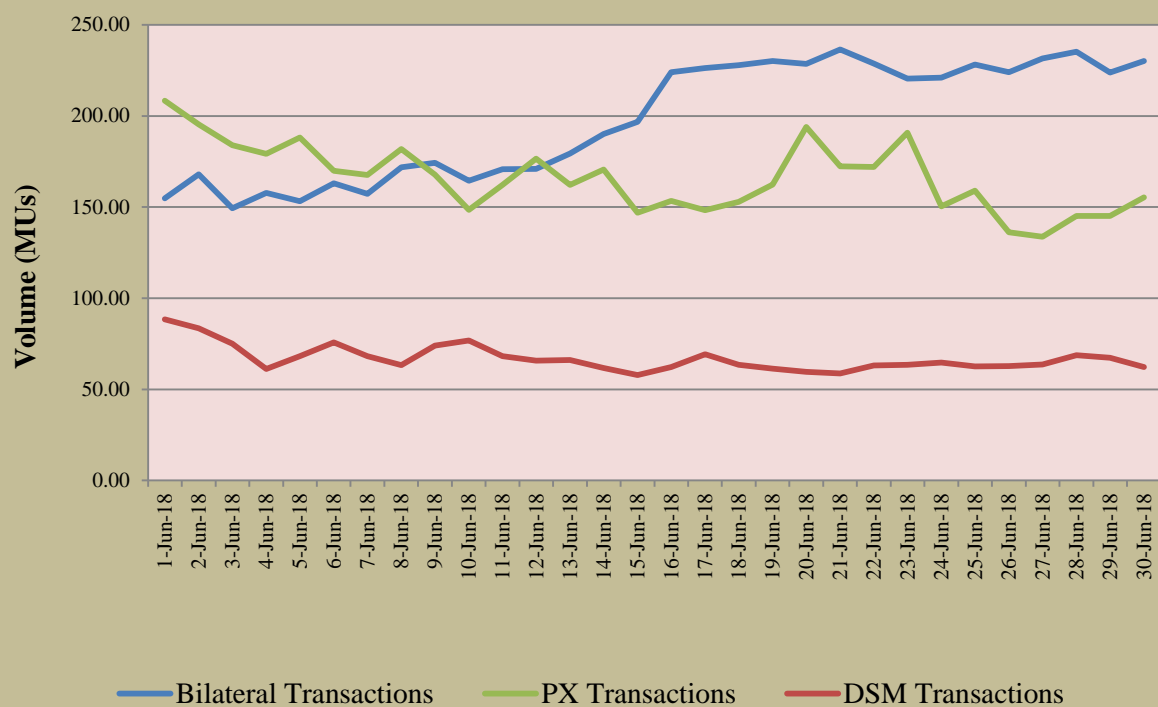


Table-2: PERCENTAGE SHARE OF ELECTRICITY TRANSACTED BY TRADING LICENSEES, JUNE 2018			
Sr.No	Name of the Trading Licensee	% Share in total Volume transacted by Trading Licensees	Herfindahl-Hirschman Index
1	PTC India Ltd.	44.52	0.1982
2	Manikaran Power Ltd.	10.68	0.0114
3	Arunachal Pradesh Power Corporation (P) Ltd	9.17	0.0084
4	NTPC Vidyut Vyapar Nigam Ltd.	8.03	0.0065
5	Mittal Processors (P) Ltd.	6.37	0.0041
6	Tata Power Trading Company (P) Ltd.	4.64	0.0022
7	GMR Energy Trading Ltd.	4.32	0.0019
8	Adani Enterprises Ltd.	3.54	0.0013
9	Jaiprakash Associates Ltd.	2.20	0.0005
10	JSW Power Trading Company Ltd	1.67	0.0003
11	Knowledge Infrastructure Systems (P) Ltd	1.32	0.0002
12	Statkraft Markets Pvt. Ltd.	1.16	0.0001
13	Essar Electric Power Development Corp. Ltd.	0.66	0.0000
14	RPG Power Trading Company Ltd.	0.50	0.0000
15	Instinct Infra & Power Ltd.	0.33	0.0000
16	National Energy Trading & Services Ltd.	0.22	0.0000
17	IPCL Power Trading Pvt. Ltd.	0.20	0.0000
18	Customized Energy Solutions India (P) Ltd.	0.15	0.0000
19	Gita Power & Infrastructure Private Limited	0.13	0.0000
20	Shree Cement Ltd.	0.12	0.0000
21	My Home Power Private Ltd.	0.04	0.0000
22	Parshavanath Power Projects Private Limited	0.03	0.0000
23	Phillip Commodities India (P) Ltd.	0.008	0.0000
TOTAL		100.00%	0.2350
Top 5 trading licensees		78.77%	
<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>			

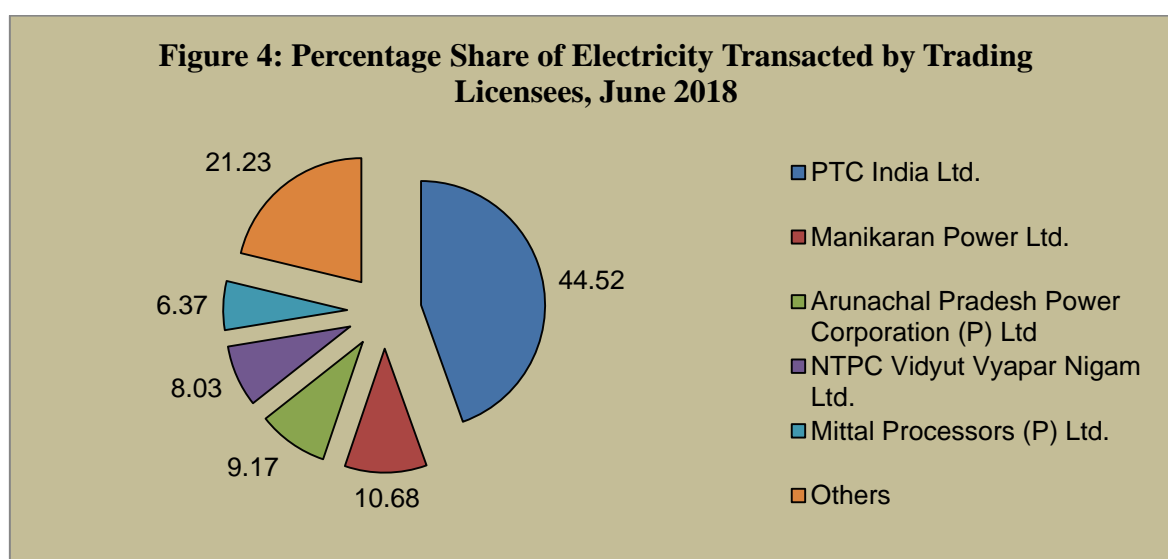


Table-3: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS, JUNE 2018		
Sr.No	Item	Sale Price of Traders (₹/kWh)
1	Minimum	2.85
2	Maximum	6.50
3	Weighted Average	4.13

Source: Information submitted by trading licensees

Table-4: PRICE OF ELECTRICITY TRANSACTED THROUGH TRADERS (TIME-WISE), JUNE 2018		
Sr.No	Period of Trade	Sale Price of Traders (₹/kWh)
1	RTC	4.05
2	PEAK	4.82
3	OFF PEAK	4.48

Source: Information submitted by trading licensees

Table-5: PRICE OF ELECTRICITY TRANSACTED THROUGH POWER EXCHANGES, JUNE 2018			
Sr.No	ACP	Price in IEX (₹/kWh)	Price in PXIL (₹/kWh)
1	Minimum	1.99	0.00
2	Maximum	10.91	8.64
3	Weighted Average	3.86	4.70

Source: Information submitted by IEX and PXIL

Table-6: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF IEX, JUNE 2018			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	41.40	4.81
2	Day Ahead Contingency Contracts	29.43	4.11
3	Weekly Contracts	16.80	3.58
	Total	87.63	4.34

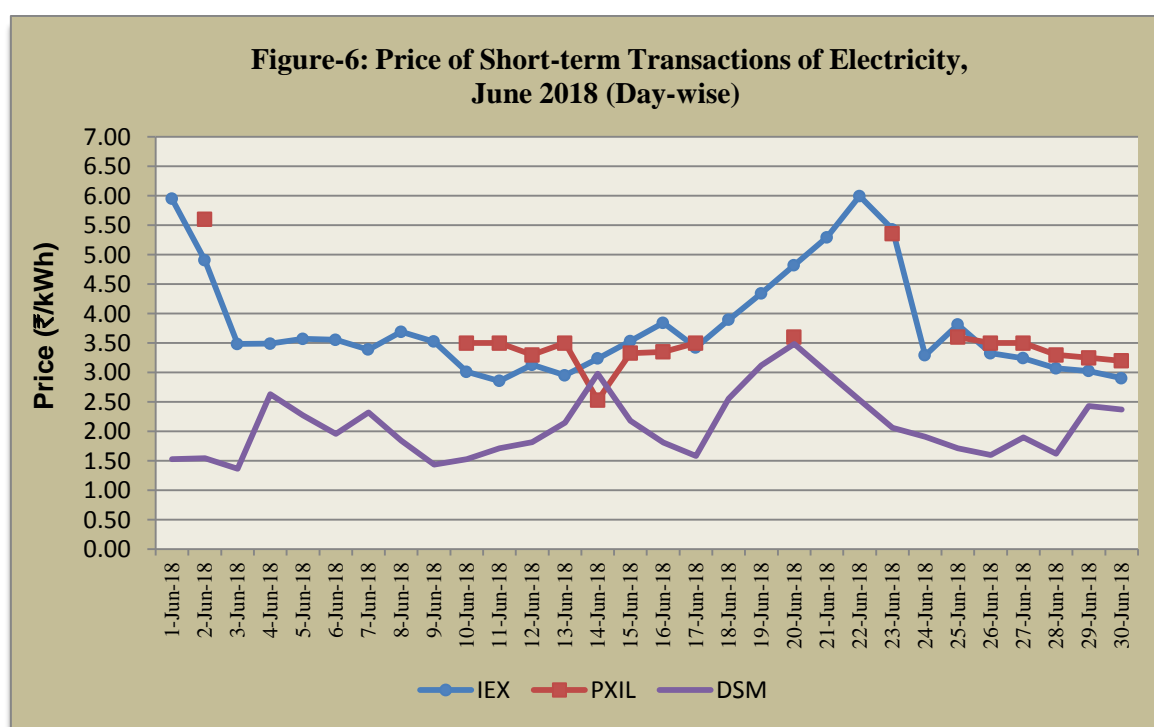
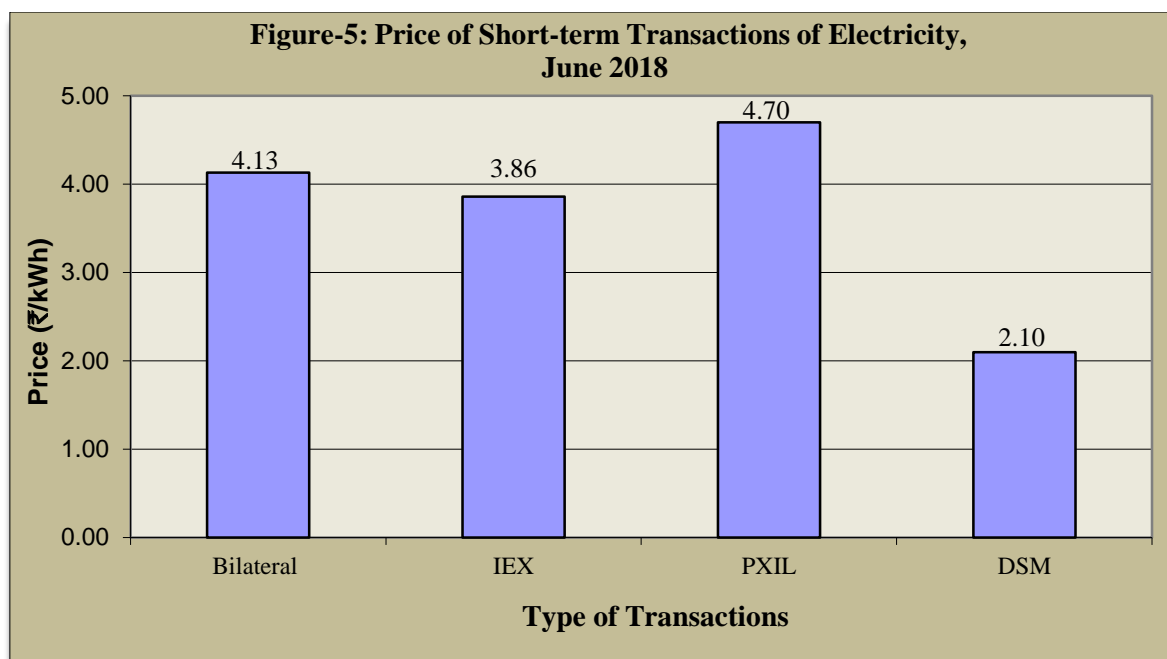
Source: IEX

Table-7: VOLUME AND PRICE OF ELECTRICITY IN TERM AHEAD MARKET OF PXIL, JUNE 2018			
Sr.No	Term ahead contracts	Actual Scheduled Volume (MUs)	Weighted Average Price (₹/kWh)
1	Intra-Day Contracts	21.67	4.86

Source: PXIL

Table-8: PRICE OF ELECTRICITY TRANSACTED THROUGH DSM, JUNE 2018		
Sr.No	Item	Price in All India Grid (₹/kWh)
1	Minimum	0.00
2	Maximum	8.24
3	Average	2.10

Source: NLDC



Note: During the month, no transactions were recorded in PXIL on 1st, 3rd-9th, 18th, 19th, 21st, 22nd and 24th of June, 2018.

Table-9: VOLUME OF ELECTRICITY SOLD THROUGH BILATERAL, JUNE 2018		
Name of the Entity	Volume of Sale (MUs)	% of Volume
HIMACHAL PRADESH	865.26	14.59
J & K	748.04	12.61
SEMBICORP	449.76	7.58
ANDHRA PRADESH	423.68	7.14
MP	423.11	7.13
TAMIL NADU	331.74	5.59
GMR CHATTISGARH	269.85	4.55
WEST BENGAL	189.22	3.19
DVC	187.11	3.15
JAYPEE NIGRIE	185.94	3.14
DB POWER	172.24	2.90
ESSAR POWER	153.32	2.59
JITPL	134.58	2.27
THERMAL POWERTECH	125.90	2.12
ADHUNIK POWER LTD	114.46	1.93
KARCHAM WANGTOO	83.39	1.41
UTTARAKHAND	72.50	1.22
GUJARAT	69.47	1.17
JINDAL POWER	62.97	1.06
DAGACHU	56.69	0.96
MEGHALAYA	53.06	0.89
SKS POWER	51.77	0.87
MB POWER	51.20	0.86
CHUZACHEN HEP	47.49	0.80
TELANGANA	46.87	0.79
ONGC PALATANA	46.80	0.79
JORETHANG	45.33	0.76
LANCO BUDHIL	41.91	0.71
TASHIDENG HEP	41.45	0.70
SIKKIM	41.24	0.70
RAJASTHAN	37.75	0.64
TEESTA STG3	33.64	0.57
SHREE CEMENT	32.98	0.56
MAHARASHTRA	31.57	0.53
HARYANA	29.05	0.49
MANIPUR	28.15	0.47
KERALA	27.88	0.47
CHHATTISGARH	17.52	0.30
KARNATAKA	14.40	0.24
AD HYDRO	12.62	0.21
JINDAL STAGE-II	12.26	0.21
NAGALAND	9.89	0.17
LANCO_AMK	9.55	0.16
TRN ENERGY	8.83	0.15
JHABUA POWER_MP	8.19	0.14
MIZORAM	7.84	0.13
ODISHA	7.04	0.12
DELHI	4.22	0.07
JHARKHAND	3.15	0.05
KISHAN GANGA HEP	2.60	0.04
ASSAM	2.08	0.04
GMR KAMALANGA	1.81	0.03
ACBIL	0.74	0.01
TOTAL	5930.73	100.00
Volume Sold by top 5 Regional Entities	2909.84	49.06

Table-10: VOLUME OF ELECTRICITY PURCHASED THROUGH BILATERAL, JUNE 2018		
Name of the Entity	Volume of Purchase (MUs)	% of Volume
UTTAR PRADESH	1368.35	23.04
PUNJAB	897.93	15.12
DELHI	791.32	13.32
HARYANA	664.14	11.18
BIHAR	290.58	4.89
GUJARAT	264.44	4.45
WEST BENGAL	254.64	4.29
MAHARASHTRA	202.76	3.41
BANGLADESH	166.18	2.80
ESSAR STEEL	155.02	2.61
ODISHA	147.76	2.49
CHHATTISGARH	124.84	2.10
JHARKHAND	121.20	2.04
ASSAM	96.53	1.63
ANDHRA PRADESH	95.62	1.61
HIMACHAL PRADESH	84.37	1.42
NEPAL(NVVN)	73.59	1.24
TAMIL NADU	42.26	0.71
UTTARAKHAND	41.91	0.71
TELANGANA	25.50	0.43
GOA	11.88	0.20
MP	8.60	0.14
J & K	2.60	0.04
KARNATAKA	2.28	0.04
MEGHALAYA	2.16	0.04
RAJASTHAN	1.71	0.03
SIKKIM	0.38	0.01
NAGALAND	0.32	0.01
DVC	0.29	0.00
MANIPUR	0.04	0.00
TOTAL	5939.20	100.00
Volume Purchased by top 5 Regional Entities	4012.32	67.56

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

Name of the Entity	Volume of Sale (MUs)	% of Volume
MP	872.13	17.51
TEESTA STG3	417.79	8.39
TELANGANA	367.78	7.38
DELHI	296.23	5.95
SEMBCORP	285.93	5.74
NLC	199.81	4.01
DVC	197.55	3.97
HIMACHAL PRADESH	145.72	2.93
SKS POWER	140.90	2.83
JINDAL POWER	131.04	2.63
MB POWER	127.13	2.55
KARNATAKA	118.68	2.38
KERALA	116.54	2.34
RAJASTHAN	107.66	2.16
DB POWER	93.09	1.87
JAYPEE NIGRIE	89.77	1.80
GUJARAT	87.30	1.75
AD HYDRO	78.01	1.57
ODISHA	69.06	1.39
DIKCHU HEP	63.84	1.28
MAHARASHTRA	63.36	1.27
SHREE CEMENT	62.73	1.26
SPECTRUM	59.67	1.20
ESSAR POWER	56.20	1.13
JHABUA POWER_MP	54.72	1.10
ACBIL	47.46	0.95
ANDHRA PRADESH	43.04	0.86
MARUTI COAL	38.81	0.78
SAINJ HEP	32.92	0.66
MEGHALAYA	32.23	0.65
HARYANA	31.46	0.63
ADHUNIK POWER LTD	30.81	0.62
TRIPURA	29.52	0.59
GMR CHATTISGARH	27.16	0.55
NTPC STATIONS-NER	26.50	0.53
GMR KAMALANGA	25.87	0.52
SIKKIM	24.51	0.49
ASSAM	23.92	0.48
UTTAR PRADESH	23.04	0.46
CHHATTISGARH	22.11	0.44
KISHAN GANGA HEP	20.95	0.42
MIZORAM	19.47	0.39
KARCHAM WANGTOO	18.31	0.37
NTPC STATIONS-WR	15.25	0.31
TAMIL NADU	14.20	0.29
GOA	13.83	0.28
BALCO	12.47	0.25
JITPL	12.28	0.25
UTTARAKHAND	9.31	0.19
ILF&S	8.09	0.16

THERMAL POWERTECH	7.81	0.16
CHUZACHEN HEP	7.23	0.15
NTPC STATIONS-SR	6.89	0.14
WEST BENGAL	6.50	0.13
TASHIDENG HEP	6.17	0.12
JORETHANG	6.00	0.12
LANCO BUDHIL	5.52	0.11
MALANA	5.07	0.10
NTPC STATIONS-NR	4.70	0.09
TRN ENERGY	3.12	0.06
JHARKHAND	2.91	0.06
JINDAL STAGE-II	2.86	0.06
MANIPUR	2.80	0.06
ONGC PALATANA	1.40	0.03
DADRA & NAGAR HAVELI	1.32	0.03
CHANDIGARH	1.26	0.03
PUNJAB	0.80	0.02
BRBCL,NABINAGAR	0.74	0.01
DHARIWAL POWER	0.56	0.01
J & K	0.37	0.01
NTPC STATIONS-ER	0.21	0.00
BIHAR	0.13	0.00
NAGALAND	0.01	0.00
TOTAL	4980.56	100.00
Volume sold by top 5 Regional Entities	2239.86	44.97

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

Name of the Entity	Volume of Purchase (MUs)	% of Volume
GUJARAT	1470.47	29.52
BIHAR	486.01	9.76
J & K	414.23	8.32
MAHARASHTRA	413.71	8.31
WEST BENGAL	388.83	7.81
ODISHA	374.28	7.51
ANDHRA PRADESH	159.81	3.21
TELANGANA	141.87	2.85
TAMIL NADU	136.29	2.74
KARNATAKA	135.60	2.72
ASSAM	134.70	2.70
UTTARAKHAND	117.71	2.36
UTTAR PRADESH	114.90	2.31
ESSAR STEEL	96.36	1.93
RAJASTHAN	75.23	1.51
HIMACHAL PRADESH	54.55	1.10
HARYANA	40.11	0.81
PUNJAB	38.40	0.77
DADRA & NAGAR HAVELI	31.59	0.63
KERALA	31.32	0.63
JHARKHAND	21.58	0.43
DAMAN AND DIU	20.83	0.42
DELHI	20.15	0.40
GOA	17.59	0.35
MEGHALAYA	14.89	0.30
CHANDIGARH	10.66	0.21
CHHATTISGARH	8.26	0.17
MP	8.17	0.16
TRIPURA	1.01	0.02
MANIPUR	0.73	0.01
NAGALAND	0.51	0.01
DVC	0.24	0.00
TOTAL	4980.56	100.00
Volume purchased by top 5 Regional Entities	3173.25	63.71

Table-13: VOLUME OF ELECTRICITY UNDER DRAWAL (EXPORTED) THROUGH DSM, JUNE 2018		
Name of the Entity	Volume of Underdrawal (MUs)	% of Volume
MAHARASHTRA	107.96	5.99
GUJARAT	98.28	5.45
KARNATAKA	97.72	5.42
MP	96.40	5.34
PUNJAB	80.93	4.49
NTPC STATIONS-WR	80.66	4.47
TAMIL NADU	72.21	4.00
ANDHRA PRADESH	63.84	3.54
NTPC STATIONS-NR	62.53	3.47
UTTAR PRADESH	62.49	3.46
SASAN UMPP	59.34	3.29
BIHAR	58.74	3.26
J & K	58.02	3.22
DELHI	53.27	2.95
TELANGANA	50.07	2.78
NLC	47.30	2.62
SEMBCORP	44.52	2.47
RAJASTHAN	42.43	2.35
NTPC STATIONS-ER	32.85	1.82
HARYANA	32.43	1.80
ASSAM	29.75	1.65
NTPC STATIONS-SR	23.21	1.29
CHHATTISGARH	22.59	1.25
DVC	22.45	1.24
UTTARAKHAND	22.30	1.24
ESSAR STEEL	19.91	1.10
JINDAL POWER	18.91	1.05
HIMACHAL PRADESH	18.07	1.00
KARCHAM WANGTOO	17.42	0.97
WEST BENGAL	16.63	0.92
NJPC	14.24	0.79
JAYPEE NIGRIE	13.77	0.76
ARUNACHAL PRADESH	13.00	0.72
JHARKHAND	12.40	0.69
GOA	12.34	0.68
NEEPCO STATIONS	10.29	0.57
TRIPURA	9.95	0.55
MEGHALAYA	9.66	0.54
MIZORAM	9.34	0.52
BANGLADESH	9.21	0.51
TEESTA STG3	8.90	0.49
PONDICHERRY	7.66	0.42
MB POWER	7.28	0.40
LANCO_AMK	7.19	0.40
MANIPUR	6.62	0.37
TEESTA HEP	6.47	0.36
JINDAL STAGE-II	6.20	0.34
AD HYDRO	5.94	0.33
KERALA	5.66	0.31

CGPL	5.59	0.31
NSPCL	5.09	0.28
DB POWER	5.03	0.28
NEPAL(NVVN)	4.94	0.27
GMR KAMALANGA	4.81	0.27
ODISHA	4.55	0.25
SIKKIM	4.50	0.25
TASHIDENG HEP	4.41	0.24
GMR CHATTISGARH	4.28	0.24
RANGANADI HEP	3.84	0.21
BALCO	3.83	0.21
JORETHANG	3.78	0.21
JHABUA POWER_MP	3.60	0.20
NAGALAND	3.55	0.20
KSK MAHANADI	3.39	0.19
LANCO BUDHIL	3.24	0.18
CHANDIGARH	3.23	0.18
URI-2	3.03	0.17
MAITHON POWER LTD	2.90	0.16
DIKCHU HEP	2.82	0.16
ADHUNIK POWER LTD	2.65	0.15
THERMAL POWERTECH	2.64	0.15
JITPL	2.47	0.14
EMCO	2.45	0.14
CHUZACHEN HEP	2.41	0.13
ESSAR POWER	2.20	0.12
ACBIL	2.08	0.12
TRN ENERGY	2.01	0.11
RANGIT HEP	1.63	0.09
BRBCL,NABINAGAR	1.59	0.09
RGPP (DABHOL)	1.51	0.08
DADRA & NAGAR HAVELI	1.43	0.08
SHREE CEMENT	1.26	0.07
NETCL VALLUR	1.15	0.06
SKS POWER	1.15	0.06
ILF&S	1.01	0.06
DAGACHU	1.00	0.06
RKM POWER	0.92	0.05
DHARIWAL POWER	0.83	0.05
LOKTAK	0.52	0.03
DOYANG HEP	0.37	0.02
MALANA	0.35	0.02
DAMAN AND DIU	0.23	0.01
TOTAL	1803.60	100.00
Volume Exported by top 5 Regional Entities	481.30	26.69

Table-14: VOLUME OF ELECTRICITY OVER DRAWAL (IMPORTED) THROUGH DSM, JUNE 2018		
Name of the Entity	Volume of Over drawal (MUs)	% of Volume
RAJASTHAN	133.15	6.70
ODISHA	116.85	5.88
HARYANA	112.64	5.67
WEST BENGAL	92.50	4.66
NTPC STATIONS-NR	90.28	4.55
UTTAR PRADESH	87.81	4.42
NTPC STATIONS-WR	86.27	4.34
TAMIL NADU	79.73	4.01
ANDHRA PRADESH	59.99	3.02
MAHARASHTRA	57.93	2.92
NTPC STATIONS-ER	57.12	2.88
KARNATAKA	51.52	2.59
HIMACHAL PRADESH	50.08	2.52
GUJARAT	49.13	2.47
NTPC STATIONS-SR	49.03	2.47
TELANGANA	48.93	2.46
DVC	42.80	2.16
UTTARAKHAND	42.40	2.14
CHHATTISGARH	36.71	1.85
DAGACHU	32.62	1.64
J & K	32.03	1.61
JHARKHAND	30.99	1.56
BIHAR	30.49	1.54
CGPL	29.41	1.48
MP	28.54	1.44
KERALA	28.16	1.42
PUNJAB	27.04	1.36
ESSAR STEEL	26.26	1.32
DAMAN AND DIU	24.82	1.25
CHANDIGARH	22.37	1.13
THERMAL POWERTECH	19.32	0.97
ASSAM	18.32	0.92
GMR KAMALANGA	18.19	0.92
DADRA & NAGAR HAVELI	15.89	0.80
NLC	12.81	0.65
DCPP	12.44	0.63
AD HYDRO	12.08	0.61
SEMBCORP	11.94	0.60
MB POWER	11.66	0.59
GMR CHATTISGARH	11.64	0.59
DELHI	11.10	0.56
TRIPURA	10.06	0.51
JHABUA POWER_MP	9.41	0.47
JINDAL STAGE-II	9.01	0.45
GOA	8.80	0.44
SKS POWER	7.77	0.39
BALCO	5.98	0.30
KARCHAM WANGTOO	5.62	0.28
SHREE CEMENT	5.34	0.27
ILF&S	5.13	0.26

MAITHON POWER LTD	5.05	0.25
NEPAL(NVVN)	4.99	0.25
NSPCL	4.94	0.25
NJPC	4.93	0.25
TASHIDENG HEP	4.91	0.25
ARUNACHAL PRADESH	4.74	0.24
ACBIL	4.74	0.24
NAGALAND	4.70	0.24
EMCO	4.59	0.23
RGPPL (DABHOL)	4.52	0.23
BANGLADESH	4.14	0.21
RKM POWER	3.87	0.19
JAYPEE NIGRIE	3.86	0.19
ADHUNIK POWER LTD	3.80	0.19
JINDAL POWER	3.66	0.18
PONDICHERRY	3.64	0.18
JORETHANG	3.31	0.17
MANIPUR	2.82	0.14
MEGHALAYA	2.08	0.10
SIKKIM	1.99	0.10
COASTGEN	1.95	0.10
JITPL	1.82	0.09
BRBCL,NABINAGAR	1.67	0.08
DB POWER	1.64	0.08
SASAN UMPP	1.57	0.08
ESSAR POWER	1.55	0.08
TEESTA STG3	1.47	0.07
CHUZACHEN HEP	1.38	0.07
MIZORAM	1.31	0.07
DIKCHU HEP	1.19	0.06
NEEPCO STATIONS	1.10	0.06
TEESTA HEP	1.04	0.05
MEENAKSHI	0.95	0.05
LANKO_AMK	0.82	0.04
LANKO KONDAPALLI	0.81	0.04
SIMHAPURI	0.79	0.04
RANGANADI HEP	0.67	0.03
KORBA WEST POWER	0.52	0.03
RANGIT HEP	0.40	0.02
TRN ENERGY	0.38	0.02
KSK MAHANADI	0.33	0.02
URI-2	0.28	0.01
MALANA	0.26	0.01
DHARIWAL POWER	0.24	0.01
LOKTAK	0.19	0.01
DOYANG HEP	0.19	0.01
TOTAL	1985.92	100.00
Volume Imported by top 5 Regional Entities	545.42	27.46

Table-15: TOTAL VOLUME OF NET SHORT-TERM TRANSACTIONS OF ELECTRICITY (REGIONAL ENTITY-WISE), JUNE 2018		
Sr.No.	Name of the Entity	Total volume of net short-term transactions of electricity*
1	GUJARAT	1528.99
2	UTTAR PRADESH	1485.53
3	PUNJAB	881.64
4	BIHAR	748.17
5	HARYANA	723.96
6	ODISHA	558.23
7	WEST BENGAL	523.63
8	MAHARASHTRA	471.51
9	DELHI	468.86
10	ESSAR STEEL	257.73
11	ASSAM	193.79
12	BANGLADESH	161.10
13	JHARKHAND	155.31
14	CHHATTISGARH	107.58
15	UTTARAKHAND	97.93
16	NEPAL(NVVN)	73.65
17	DAMAN AND DIU	45.41
18	DADRA & NAGAR HAVELI	44.29
19	CHANDIGARH	28.54
20	NTPC STATIONS-ER	24.07
21	CGPL	23.81
22	NTPC STATIONS-NR	23.04
23	RAJASTHAN	22.25
24	NTPC STATIONS-SR	18.93
25	DCPP	12.44
26	GOA	12.10
27	RGPL (DABHOL)	3.01
28	RKM POWER	2.95
29	MAITHON POWER LTD	2.15
30	EMCO	2.14
31	COASTGEN	1.95
32	MEENAKSHI	0.95
33	NETCL VALLUR	-1.15
34	DHARIWAL POWER	-1.15
35	RANGIT HEP	-1.23
36	URI-2	-2.75
37	KSK MAHANADI	-3.06
38	RANGANADI HEP	-3.17
39	ILF&S	-3.96
40	PONDICHERRY	-4.02
41	MALANA	-5.16
42	TEESTA HEP	-5.43
43	NAGALAND	-7.93
44	ARUNACHAL PRADESH	-8.26
45	NEEPCO STATIONS	-9.19
46	NJPC	-9.30
47	NTPC STATIONS-WR	-9.64
48	BALCO	-10.46
49	JINDAL STAGE-II	-12.31

50	TRN ENERGY	-13.57
51	GMR KAMALANGA	-14.30
52	LANKO_AMK	-15.92
53	KISHAN GANGA HEP	-23.54
54	DAGACHU	-25.07
55	NTPC STATIONS-NER	-26.50
56	TRIPURA	-28.40
57	SAINJ HEP	-32.92
58	MANIPUR	-33.98
59	MIZORAM	-35.34
60	MARUTI COAL	-38.81
61	KARNATAKA	-41.40
62	ACBIL	-45.55
63	TASHIDENG HEP	-47.11
64	ONGC PALATANA	-48.20
65	LANCO BUDHIL	-50.67
66	JORETHANG	-51.79
67	CHUZACHEN HEP	-55.75
68	JHABUA POWER_MP	-57.10
69	SASAN UMPP	-57.77
70	SPECTRUM	-59.67
71	DIKCHU HEP	-65.47
72	SIKKIM	-67.88
73	MEGHALAYA	-75.83
74	AD HYDRO	-84.49
75	KERALA	-90.61
76	SHREE CEMENT	-91.63
77	KARCHAM WANGTOO	-113.51
78	THERMAL POWERTECH	-117.03
79	ADHUNIK POWER LTD	-144.13
80	JITPL	-147.50
81	TAMIL NADU	-159.88
82	MB POWER	-173.95
83	SKS POWER	-186.06
84	JINDAL POWER	-209.27
85	ESSAR POWER	-210.17
86	ANDHRA PRADESH	-215.13
87	NLC	-234.30
88	TELANGANA	-248.43
89	DB POWER	-268.72
90	JAYPEE NIGRIE	-285.62
91	GMR CHATTISGARH	-289.65
92	J & K	-357.58
93	DVC	-363.78
94	TEESTA STG3	-458.87
95	SEMBCORP	-768.27
96	HIMACHAL PRADESH	-840.05
97	MP	-1346.32
* 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, JUNE 2018			
	Details of Congestion	IEX	PXIL
A	Unconstrained Cleared Volume* (MUs)	4984.89	15.39
B	Actual Cleared Volume and hence scheduled (MUs)	4965.19	15.39
C	Volume of electricity that could not be cleared and hence not scheduled because of congestion (MUs) (A-B)	19.70	0.00
D	Volume of electricity that could not be cleared as % to Unconstrained Cleared Volume	0.40%	0.00%
E	Percentage of the time congestion occurred during the month (Number of hours congestion occurred/Total number of hours in the month)	14.48%	0.00%
F	Congestion occurrence (%) time block wise		
	0.00 - 6.00 hours	31.41%	0.00%
	6.00 - 12.00 hours	19.66%	0.00%
	12.00 - 18.00 hours	28.06%	0.00%
	18.00 - 24.00 hours	20.86%	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), JUNE 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-June-18	128.70	26.06	208.41	0.00	88.36	3631.68
2-June-18	136.26	31.67	188.16	7.20	83.54	3538.58
3-June-18	118.24	31.09	183.98	0.00	75.05	3396.75
4-June-18	127.95	29.83	179.20	0.00	61.17	3603.96
5-June-18	124.57	28.72	188.15	0.00	68.19	3640.54
6-June-18	125.57	37.58	169.87	0.00	75.81	3542.63
7-June-18	120.49	36.86	167.57	0.00	68.25	3470.77
8-June-18	128.57	43.32	181.93	0.00	63.28	3294.97
9-June-18	130.88	43.50	167.90	0.00	74.00	3010.54
10-June-18	129.12	35.35	148.41	0.14	76.88	2972.62
11-June-18	136.08	34.69	161.88	0.25	68.20	3255.92
12-June-18	133.92	36.98	176.24	0.29	65.81	3383.47
13-June-18	140.26	39.14	161.64	0.58	66.02	3274.20
14-June-18	148.28	41.78	169.87	0.73	61.61	3285.27
15-June-18	151.04	45.72	146.16	0.68	57.74	3455.33
16-June-18	188.72	35.25	152.75	0.68	62.26	3421.85
17-June-18	188.43	37.97	147.83	0.53	69.29	3177.84
18-June-18	187.18	40.67	152.82	0.00	63.46	3400.03
19-June-18	191.29	38.91	162.41	0.00	61.40	3519.52
20-June-18	187.80	40.75	193.80	0.16	59.59	3647.41
21-June-18	190.59	46.00	172.41	0.00	58.78	3713.24
22-June-18	183.41	45.33	172.00	0.00	63.11	3732.90
23-June-18	177.71	42.84	188.49	2.40	63.48	3694.95
24-June-18	178.00	43.03	150.42	0.00	64.68	3486.81
25-June-18	177.90	50.35	158.70	0.27	62.55	3566.61
26-June-18	176.27	47.70	135.93	0.30	62.73	3449.34
27-June-18	183.52	48.03	133.44	0.23	63.60	3369.43
28-June-18	185.90	49.44	144.90	0.31	68.76	3241.97
29-June-18	184.17	39.62	144.91	0.31	67.39	3340.85
30-June-18	189.06	41.15	155.01	0.31	62.27	3479.18
Total	4749.87	1189.33	4965.17	15.39	2007.24	102999.16
<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), JUNE 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-June-18	3.62	8.00	5.95	-	-	-	0.00	5.95	1.53
2-June-18	3.20	8.29	4.91	5.60	5.60	5.60	0.00	3.45	1.55
3-June-18	2.46	5.25	3.48	-	-	-	0.00	3.24	1.37
4-June-18	2.25	6.00	3.49	-	-	-	0.00	5.32	2.63
5-June-18	2.26	5.02	3.57	-	-	-	0.00	5.11	2.27
6-June-18	2.25	6.55	3.55	-	-	-	0.00	6.16	1.96
7-June-18	2.25	6.40	3.39	-	-	-	0.00	6.16	2.32
8-June-18	2.38	5.25	3.69	-	-	-	0.00	3.24	1.85
9-June-18	2.38	5.10	3.53	-	-	-	0.00	3.24	1.44
10-June-18	2.26	4.50	3.01	3.50	3.50	3.50	0.00	5.11	1.53
11-June-18	1.99	3.72	2.86	3.50	3.50	3.50	0.00	3.45	1.71
12-June-18	2.05	4.80	3.13	2.25	8.13	3.30	0.00	3.45	1.82
13-June-18	2.08	5.00	2.95	2.25	8.64	3.50	0.00	6.36	2.15
14-June-18	2.21	5.10	3.24	2.25	4.50	2.53	0.00	6.36	2.98
15-June-18	2.15	6.00	3.53	2.38	4.83	3.33	0.00	5.32	2.18
16-June-18	2.20	7.08	3.84	2.54	5.47	3.35	0.00	3.24	1.81
17-June-18	2.08	6.26	3.42	2.75	5.75	3.50	0.00	3.45	1.58
18-June-18	2.25	8.40	3.89	-	-	-	0.00	5.95	2.56
19-June-18	2.70	9.50	4.34	-	-	-	0.36	8.24	3.12
20-June-18	3.10	9.50	4.82	3.60	3.60	3.60	0.71	8.03	3.48
21-June-18	3.10	9.85	5.29	-	-	-	0.00	6.16	3.01
22-June-18	3.30	10.91	5.99	-	-	-	0.00	5.74	2.54
23-June-18	2.64	9.50	5.43	5.36	5.36	5.36	0.00	5.11	2.06
24-June-18	2.23	8.51	3.29	-	-	-	0.00	3.45	1.91
25-June-18	2.26	9.50	3.81	3.60	3.60	3.60	0.00	3.45	1.72
26-June-18	2.05	9.50	3.33	3.50	3.50	3.50	0.00	4.91	1.60
27-June-18	2.02	7.90	3.24	3.50	3.50	3.50	0.00	3.45	1.90
28-June-18	2.30	4.20	3.07	3.30	3.30	3.30	0.00	5.11	1.62
29-June-18	2.13	4.20	3.03	3.25	3.25	3.25	0.00	5.95	2.43
30-June-18	2.17	4.80	2.90	3.20	3.20	3.20	0.00	7.20	2.37
	1.99#	10.91#	3.86	0.00#	8.64#	4.70	0.00#	8.24#	2.10
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), JUNE 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	0.00	897.93	897.93	0.80	38.40	37.60	27.04	80.93	-53.89	881.64
HARYANA	29.05	664.14	635.09	31.46	40.11	8.66	112.64	32.43	80.21	723.96
RAJASTHAN	37.75	1.71	-36.03	107.66	75.23	-32.43	133.15	42.43	90.71	22.25
DELHI	4.22	791.32	787.10	296.23	20.15	-276.08	11.10	53.27	-42.17	468.86
UP	0.00	1368.35	1368.35	23.04	114.90	91.86	87.81	62.49	25.31	1485.53
UTTARAKHAND	72.50	41.91	-30.58	9.31	117.71	108.41	42.40	22.30	20.11	97.93
HP	865.26	84.37	-780.89	145.72	54.55	-91.17	50.08	18.07	32.01	-840.05
J & K	748.04	2.60	-745.44	0.37	414.23	413.85	32.03	58.02	-25.99	-357.58
CHANDIGARH	0.00	0.00	0.00	1.26	10.66	9.41	22.37	3.23	19.14	28.54
MP	423.11	8.60	-414.50	872.13	8.17	-863.96	28.54	96.40	-67.85	-1346.32
MAHARASHTRA	31.57	202.76	171.19	63.36	413.71	350.35	57.93	107.96	-50.03	471.51
GUJARAT	69.47	264.44	194.97	87.30	1470.47	1383.17	49.13	98.28	-49.15	1528.99
CHHATTISGARH	17.52	124.84	107.32	22.11	8.26	-13.86	36.71	22.59	14.11	107.58
GOA	0.00	11.88	11.88	13.83	17.59	3.76	8.80	12.34	-3.54	12.10
DAMAN DIU	0.00	0.00	0.00	0.00	20.83	20.83	24.82	0.23	24.59	45.41
D&N HAVELI	0.45	0.00	-0.45	1.32	31.59	30.27	15.89	1.43	14.46	44.29
AP	423.68	95.62	-328.06	43.04	159.81	116.77	59.99	63.84	-3.84	-215.13
KARNATAKA	14.40	2.28	-12.12	118.68	135.60	16.92	51.52	97.72	-46.20	-41.40
KERALA	27.88	0.00	-27.88	116.54	31.32	-85.23	28.16	5.66	22.50	-90.61
TAMIL NADU	331.74	42.26	-289.48	14.20	136.29	122.08	79.73	72.21	7.52	-159.88
PONDICHERRY	0.00	0.00	0.00	0.00	0.00	0.00	3.64	7.66	-4.02	-4.02
TELANGANA	46.87	25.50	-21.37	367.78	141.87	-225.92	48.93	50.07	-1.14	-248.43
WEST BENGAL	189.22	254.64	65.42	6.50	388.83	382.33	92.50	16.63	75.88	523.63
ODISHA	7.04	147.76	140.72	69.06	374.28	305.21	116.85	4.55	112.30	558.23
BIHAR	0.03	290.58	290.55	0.13	486.01	485.88	30.49	58.74	-28.26	748.17
JHARKHAND	3.15	121.20	118.06	2.91	21.58	18.67	30.99	12.40	18.59	155.31
SIKKIM	41.24	0.38	-40.87	24.51	0.00	-24.51	1.99	4.50	-2.51	-67.88
DVC	187.11	0.29	-186.82	197.55	0.24	-197.31	42.80	22.45	20.35	-363.78
ARUNACHAL P.	0.00	0.00	0.00	0.00	0.00	0.00	4.74	13.00	-8.26	-8.26
ASSAM	2.08	96.53	94.45	23.92	134.70	110.77	18.32	29.75	-11.43	193.79
MANIPUR	28.15	0.04	-28.11	2.80	0.73	-2.07	2.82	6.62	-3.80	-33.98
MEGHALAYA	53.06	2.16	-50.90	32.23	14.89	-17.34	2.08	9.66	-7.58	-75.83
MIZORAM	7.84	0.00	-7.84	19.47	0.00	-19.47	1.31	9.34	-8.03	-35.34
NAGALAND	9.89	0.32	-9.58	0.01	0.51	0.50	4.70	3.55	1.15	-7.93
TRIPURA	0.00	0.00	0.00	29.52	1.01	-28.52	10.06	9.95	0.11	-28.40
NTPC -NR	0.00	0.00	0.00	4.70	0.00	-4.70	90.28	62.53	27.75	23.04
NJPC	0.00	0.00	0.00	0.00	0.00	0.00	4.93	14.24	-9.30	-9.30
AD HYDRO	12.62	0.00	-12.62	78.01	0.00	-78.01	12.08	5.94	6.15	-84.49
KARCHAM WANG	83.39	0.00	-83.39	18.31	0.00	-18.31	5.62	17.42	-11.80	-113.51
SHREE CEMENT	32.98	0.00	-32.98	62.73	0.00	-62.73	5.34	1.26	4.08	-91.63
LANCO BUDHIL	41.91	0.00	-41.91	5.52	0.00	-5.52	0.00	3.24	-3.24	-50.67
MALANA	0.00	0.00	0.00	5.07	0.00	-5.07	0.26	0.35	-0.08	-5.16
URI-2	0.00	0.00	0.00	0.00	0.00	0.00	0.28	3.03	-2.75	-2.75
SAINJ HEP	0.00	0.00	0.00	32.92	0.00	-32.92	0.00	0.00	0.00	-32.92
KISHAN GANGA	2.60	0.00	-2.60	20.95	0.00	-20.95	0.00	0.00	0.00	-23.54
NTPC -WR	0.00	0.00	0.00	15.25	0.00	-15.25	86.27	80.66	5.61	-9.64
JINDAL POWER	62.97	0.00	-62.97	131.04	0.00	-131.04	3.66	18.91	-15.25	-209.27
LANCO_AMK	9.55	0.00	-9.55	0.00	0.00	0.00	0.82	7.19	-6.36	-15.92
ACBIL	0.74	0.00	-0.74	47.46	0.00	-47.46	4.74	2.08	2.65	-45.55
BALCO	0.13	0.00	-0.13	12.47	0.00	-12.47	5.98	3.83	2.15	-10.46
RGPL	0.00	0.00	0.00	0.00	0.00	0.00	4.52	1.51	3.01	3.01
CGPL	0.00	0.00	0.00	0.00	0.00	0.00	29.41	5.59	23.81	23.81
DCPP	0.00	0.00	0.00	0.00	0.00	0.00	12.44	0.00	12.44	12.44
EMCO	0.00	0.00	0.00	0.00	0.00	0.00	4.59	2.45	2.14	2.14
ESSAR STEEL	0.00	155.02	155.02	0.00	96.36	96.36	26.26	19.91	6.35	257.73

KSK MAHANADI	0.00	0.00	0.00	0.00	0.00	0.00	0.33	3.39	-3.06	-3.06
ESSAR POWER	153.32	0.00	-153.32	56.20	0.00	-56.20	1.55	2.20	-0.65	-210.17
JINDAL STG-II	12.26	0.00	-12.26	2.86	0.00	-2.86	9.01	6.20	2.81	-12.31
DB POWER	172.24	0.00	-172.24	93.09	0.00	-93.09	1.64	5.03	-3.39	-268.72
DHARIWAL POWER	0.00	0.00	0.00	0.56	0.00	-0.56	0.24	0.83	-0.59	-1.15
JAYPEE NIGRIE	185.94	0.00	-185.94	89.77	0.00	-89.77	3.86	13.77	-9.91	-285.62
GMR CHATTISGARH	269.85	0.00	-269.85	27.16	0.00	-27.16	11.64	4.28	7.36	-289.65
MB POWER	51.20	0.00	-51.20	127.13	0.00	-127.13	11.66	7.28	4.38	-173.95
MARUTI COAL	0.00	0.00	0.00	38.81	0.00	-38.81	0.00	0.00	0.00	-38.81
SPECTRUM	0.00	0.00	0.00	59.67	0.00	-59.67	0.00	0.00	0.00	-59.67
JHABUA_MP	8.19	0.00	-8.19	54.72	0.00	-54.72	9.41	3.60	5.81	-57.10
SASAN UMPP	0.00	0.00	0.00	0.00	0.00	0.00	1.57	59.34	-57.77	-57.77
TRN ENERGY	8.83	0.00	-8.83	3.12	0.00	-3.12	0.38	2.01	-1.62	-13.57
RKM POWER	0.00	0.00	0.00	0.00	0.00	0.00	3.87	0.92	2.95	2.95
SKS POWER	51.77	0.00	-51.77	140.90	0.00	-140.90	7.77	1.15	6.61	-186.06
NTPC-SR	0.00	0.00	0.00	6.89	0.00	-6.89	49.03	23.21	25.82	18.93
COASTGEN	0.00	0.00	0.00	0.00	0.00	0.00	1.95	0.00	1.95	1.95
THERMAL POWER	125.90	0.00	-125.90	7.81	0.00	-7.81	19.32	2.64	16.68	-117.03
ILF&S	0.00	0.00	0.00	8.09	0.00	-8.09	5.13	1.01	4.13	-3.96
NLC	0.00	0.00	0.00	199.81	0.00	-199.81	12.81	47.30	-34.48	-234.30
SEBPCORP	449.76	0.00	-449.76	285.93	0.00	-285.93	11.94	44.52	-32.58	-768.27
NETCL VALLUR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15	-1.15	-1.15
NTPC -ER	0.00	0.00	0.00	0.21	0.00	-0.21	57.12	32.85	24.27	24.07
MAITHON	0.00	0.00	0.00	0.00	0.00	0.00	5.05	2.90	2.15	2.15
ADHUNIK	114.46	0.00	-114.46	30.81	0.00	-30.81	3.80	2.65	1.15	-144.13
CHUZACHEN	47.49	0.00	-47.49	7.23	0.00	-7.23	1.38	2.41	-1.03	-55.75
RANGIT HEP	0.00	0.00	0.00	0.00	0.00	0.00	0.40	1.63	-1.23	-1.23
GMR KAMALANGA	1.81	0.00	-1.81	25.87	0.00	-25.87	18.19	4.81	13.38	-14.30
JITPL	134.58	0.00	-134.58	12.28	0.00	-12.28	1.82	2.47	-0.64	-147.50
TEESTA HEP	0.00	0.00	0.00	0.00	0.00	0.00	1.04	6.47	-5.43	-5.43
DAGACHU	56.69	0.00	-56.69	0.00	0.00	0.00	32.62	1.00	31.62	-25.07
JORETHANG	45.33	0.00	-45.33	6.00	0.00	-6.00	3.31	3.78	-0.47	-51.79
NEPAL(NVVN)	0.00	73.59	73.59	0.00	0.00	0.00	4.99	4.94	0.05	73.65
BANGLADESH	0.00	166.18	166.18	0.00	0.00	0.00	4.14	9.21	-5.07	161.10
TEESTA STG3	33.64	0.00	-33.64	417.79	0.00	-417.79	1.47	8.90	-7.43	-458.87
DIKCHU HEP	0.00	0.00	0.00	63.84	0.00	-63.84	1.19	2.82	-1.63	-65.47
TASHIDENG	41.45	0.00	-41.45	6.17	0.00	-6.17	4.91	4.41	0.51	-47.11
NTPC -NER	0.00	0.00	0.00	26.50	0.00	-26.50	0.00	0.00	0.00	-26.50
NEEPCO	0.00	0.00	0.00	0.00	0.00	0.00	1.10	10.29	-9.19	-9.19
RANGANADI	0.00	0.00	0.00	0.00	0.00	0.00	0.67	3.84	-3.17	-3.17
ONGC PALATANA	46.80	0.00	-46.80	1.40	0.00	-1.40	0.00	0.00	0.00	-48.20

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 July, 2018

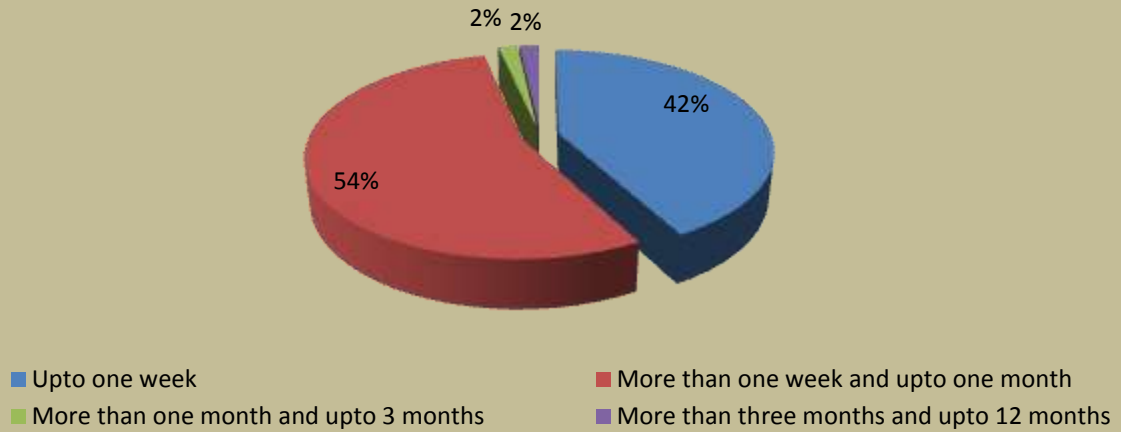


Figure-8: Forward Curve based on Prices of Bilateral Contracts

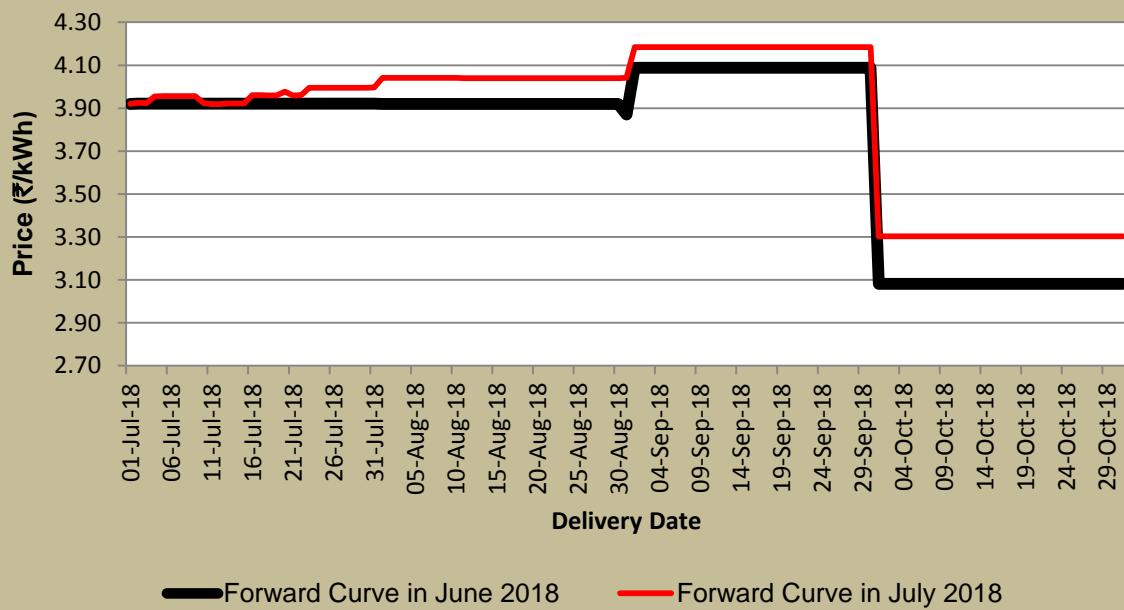


Table-20 : VOLUME AND PRICE OF RENEWABLE ENERGY CERTIFICATES (RECs) TRANSACTED THROUGH POWER EXCHANGES, JUNE 2018					
Sr.No.	Details of REC Transactions	IEX		PXIL	
		Solar	Non-Solar	Solar	Non Solar
A	Volume of Buy Bid	288070	856844	304331	254391
B	Volume of Sell Bid	2540984	295070	1634392	89676
C	Ratio of Buy Bid to Sell Bid Volume	0.11	2.90	0.19	2.84
D	Market Clearing Volume (MWh)	288070	221674	304331	82154
E	Weighted average Market Clearing Price (₹/MWh)	1000	1150	1000	1050

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)
	<i>Solar</i>	<i>2500.00</i>
	<i>Non-Solar</i>	<i>2900.00</i>