

# WEEKLY REPORTING OF OTC CONTRACTS: MONTHLY ANALYSIS

(JUNE 2012)

[An analysis of all weekly reports (reporting period 4<sup>th</sup> June – 1<sup>st</sup> July 2012) received from licensed-traders for the month of June 2012]

Prepared on 9<sup>th</sup> July 2012

Market Monitoring Cell, CERC

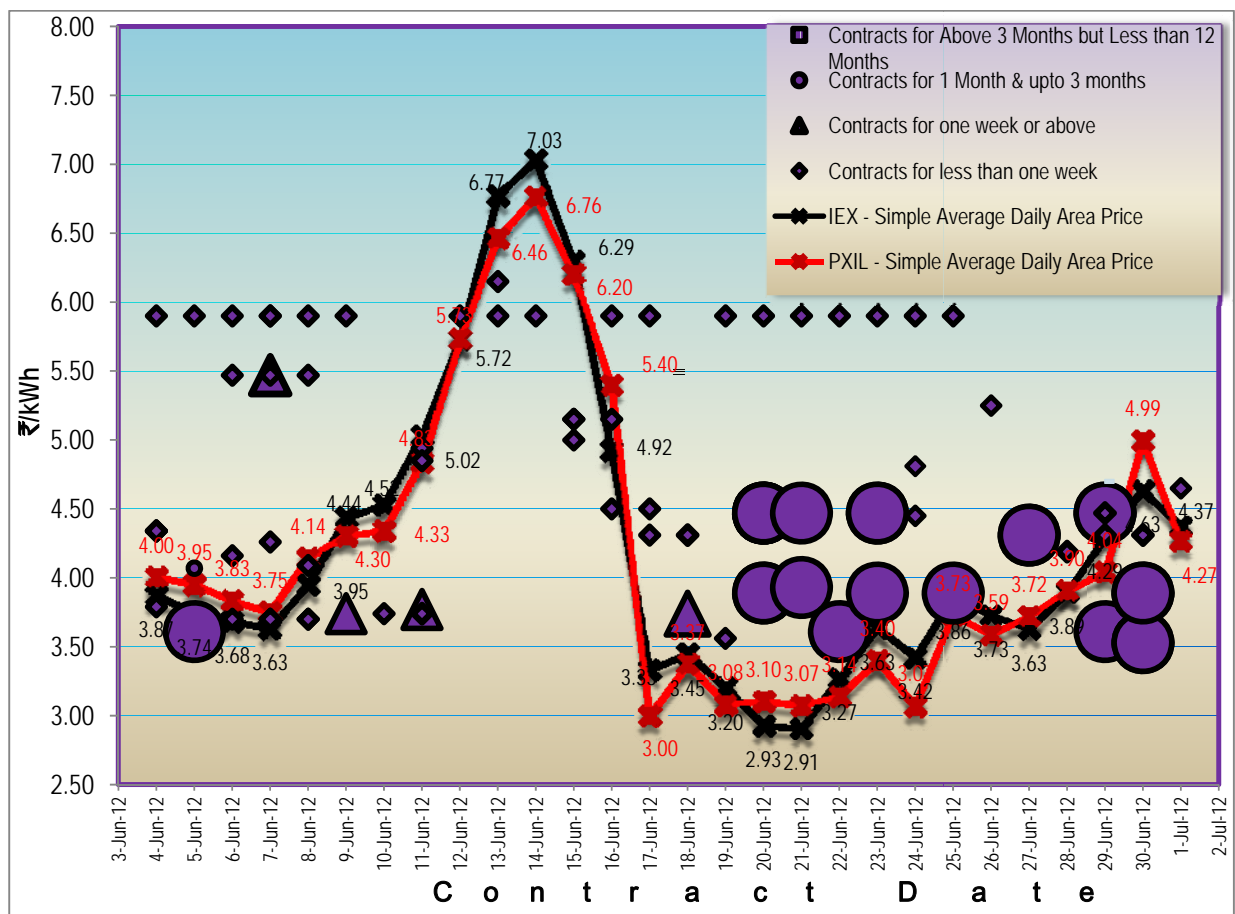
### Snapshot for June 2012

- ✓ The reported short-term contract volume for the month of June 2012 (analysis of four weeks) was 2234.09 MUs whereas the same was 2744.28 MUs for the month of May 2012 (analysis of five weeks). There is a 19% decrease in reported contract-volume.
- ✓ 36% of total volume has been contracted at above price of ₹ 4/kWh as compared to 37% during May 2012.
- ✓ Total number of contracts (including Swap & Banking) in June (analysis of four weeks) was 152 by 6 traders whereas in May (analysis of five weeks) it was 100 by 8 traders.

## I. Comparison of Prices of Short Term OTC Contracts with Power Exchange Prices ( on Contracted Date)

The scatter diagram shows a comparative analysis of price movement in both the OTC and Power Exchange markets for the period of 4<sup>th</sup> June – 1<sup>st</sup> July 2012. As is seen from the scatter diagram, most of the contracts were concentrated in the 3<sup>rd</sup> week of the reported period and the overall price was in a range of ₹3.53/kWh to ₹6.15/ kWh. The contracts reported were mostly for less than a week (114 Contracts) and for a months and above (26 Contracts) period of power delivery. There has been no contract signed for more than three months duration of power delivery.

Chart 1: Scatter Diagram depicting Price of Electricity for OTC contracts and in Power Exchanges



Note: It may be noted that Power Exchange is a day ahead market with standardized contracts and no transmission corridor assurance while the OTC Contracts are weekly/monthly contracts with flexibility of customization and corridor assurance. The price comparison of OTC- Contracts and Power Exchanges should be seen in this light.

The following table shows the weighted average sale prices of all the contracts reported on a particular week and total contracted volume for the same. (Weights being the respective contracted volume).

**Table 1: Price and Volume of OTC Contracts**

Weeks	Range of Sale Price (₹/ kWh)		Weighted Average of Sale Price (₹/ kWh)	Total Volume (MUs)
	Min	Max		
4 <sup>th</sup> - 10 <sup>th</sup> June	3.61	5.90	4.05	91.54
11 <sup>th</sup> -17 <sup>th</sup> June	3.74	6.15	4.32	32.20
18 <sup>th</sup> - 24 <sup>th</sup> June	3.56	5.90	4.11	789.37
25 <sup>th</sup> June- 1 <sup>st</sup> July	3.53	5.25	4.02	1147.60
<b>Total</b>				<b>2060.71</b>

**Table 2: Comparison of Prices in Day Ahead Market with OTC Contracts**

(Includes Term Ahead Contracts at Power Exchanges)

Contract Date (2012)	4th June	5th June	6th June	7th June	8th June	9th June	10th June	11th June	12th June	13th June	14th June	15th June	16th June	17th June
IEX* (₹ / kWh)	3.87	3.74	3.68	3.63	3.95	4.44	4.52	5.02	5.72	6.77	7.03	6.29	4.92	3.33
PXIL* (₹ / kWh)	4.00	3.95	3.83	3.75	4.14	4.30	4.33	4.83	5.73	6.46	6.76	6.20	5.40	3.00
OTC Contracts** (₹ / kWh)	4.05							4.32						
	4 <sup>th</sup> -10 <sup>th</sup> June							11 <sup>th</sup> -17 <sup>th</sup> June						

Contract Date (2012)	18th June	19th June	20th June	21st June	22nd June	23rd June	24th June	25th June	26th June	27th June	28th June	29th June	30th June	1st July
IEX* (₹ / kWh)	3.45	3.20	2.93	2.91	3.27	3.63	3.42	3.86	3.73	3.63	3.89	4.29	4.63	4.37
PXIL* (₹ / kWh)	3.37	3.08	3.10	3.07	3.14	3.40	3.07	3.73	3.59	3.72	3.90	4.04	4.99	4.27
OTC Contracts** (₹ / kWh)	4.11							4.02						
	18 <sup>th</sup> -24 <sup>th</sup> June							25 <sup>th</sup> June-1 <sup>st</sup> July						

Source: Indian Energy Exchange & Power Exchange of India Ltd. Websites,

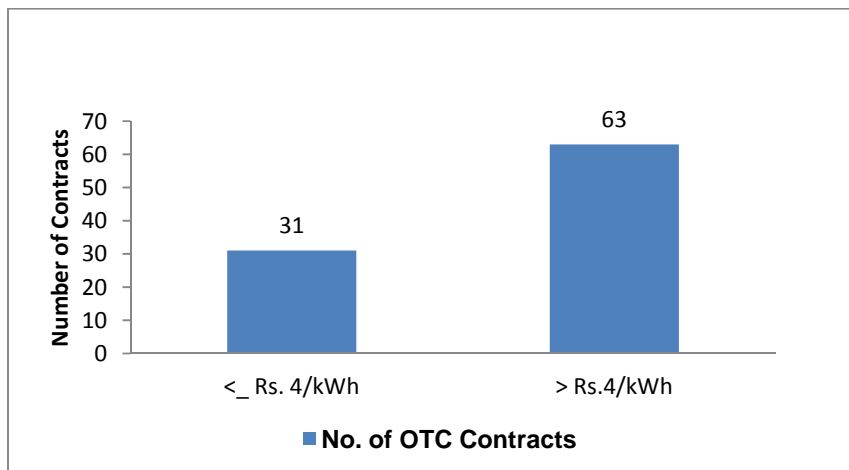
\*: Simple Average Area Prices for the Day for all the Bid Areas

\*\*.: Weekly Weighted Average Prices for OTC- Contracts

## Observations

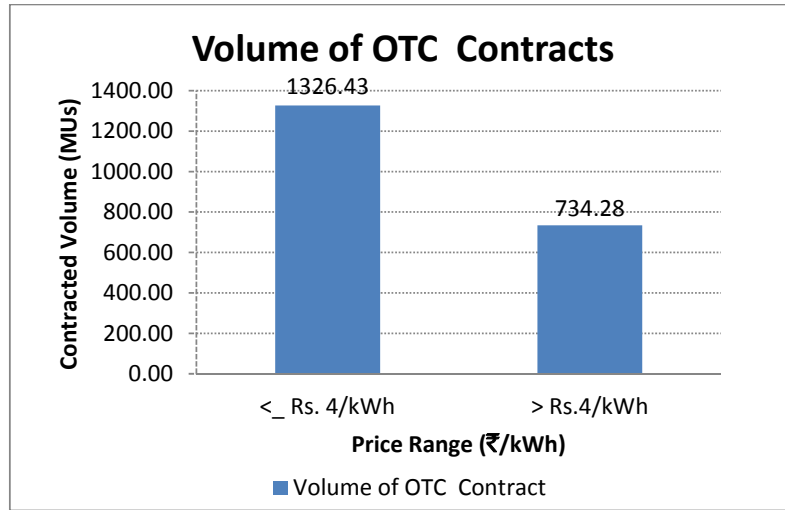
1. It is observed that IEX and PXIL prices were below the average OTC contract prices except in the 2nd week of reported period. It may be noted that Power Exchange is a day ahead market with standardized contracts and no transmission corridor assurance while the OTC Contracts are weekly/monthly contracts with flexibility of customization and transmission corridor assurance. The price comparison of OTC- Contracts and Power Exchanges should be seen in this light.
2. The minimum price in the exchanges during reported period was ₹2.91/kWh (IEX, 21<sup>st</sup> June) while that in the OTC market was ₹3.00/kWh (17<sup>th</sup> June 2012). Maximum price in Day-Ahead market at the exchange reached ₹6.76/kWh (PXIL, 7<sup>th</sup> June) and in OTC Market it was ₹6.15 (13<sup>th</sup> June) which was a 'RTC' power contract.
3. As far as the number of contracts is concerned, 63 out of totals 94\* contracts were entered at above ₹4/kWh. There were a total 152 contracts including swap & banking during the month. However, the cumulative volume traded above ₹4/kWh was 734.28\* MUs which is 36% of total OTC contracts for the reported period 4<sup>th</sup> June – 1<sup>st</sup> July 2012.
4. It is also observed that there are large number of banking and swapping contracts (68) undertaken by Northern States recently. This may be to meet the unexpected and extended demand for power during prolonged summer season.

Chart 2: Frequency Distribution of Number of OTC Contracts



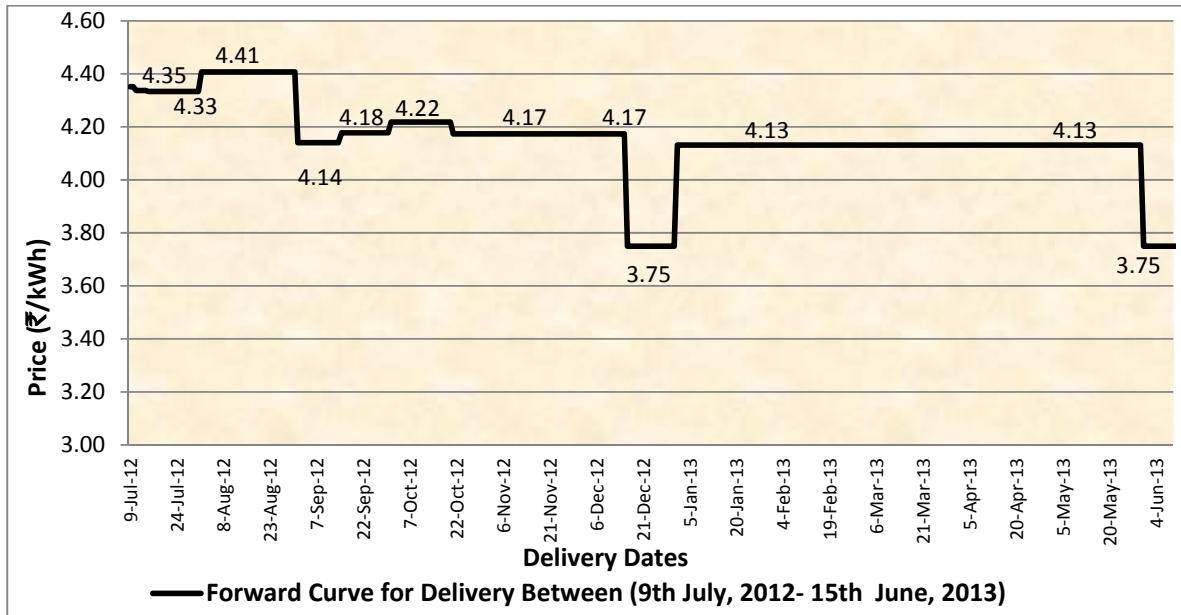
\* Excluding swap /banking contracts since they do not have any sale price.

Chart 3: Cumulative Volume Traded below and above ₹4/kWh 4<sup>th</sup> June – 1<sup>st</sup> July 2012



## II. Forward Curve of Power Prices

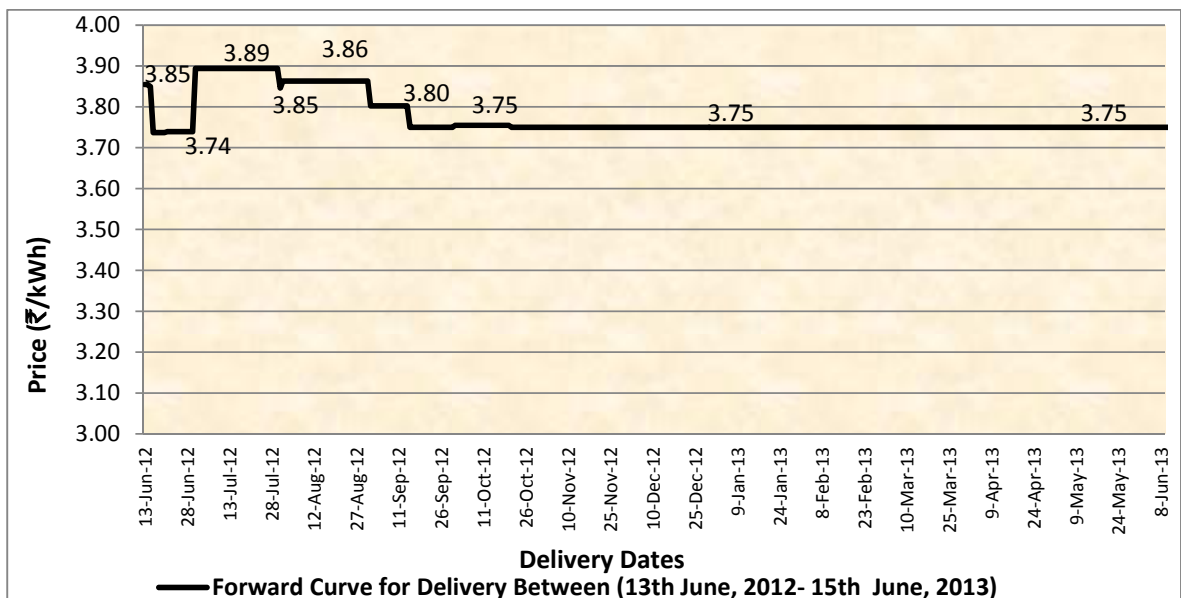
**Chart 4: Forward Curve for the period July 2012 - June 2013 as on 9<sup>th</sup> July 2012**



Note: Two contracts for previous month have been included in this month's forward curve. Those contracts are reported in June 2012.

A forward curve reflects present day's expectation of spot prices for a future period. Accordingly a forward curve has been drawn based on prices of contracts executed now for supply of power from 9<sup>th</sup> July 2012 - 15<sup>th</sup> June 2013, i.e. eleven months ahead period of power supply. This forward curve is as on 9<sup>th</sup> July 2012 but based on 94 contract prices reported by trader's upto 1<sup>st</sup> July 2012.

**Chart 4.1: Forward Curve for the period June 2012 - June 2013 as on 13<sup>th</sup> June 2012**



## Observations

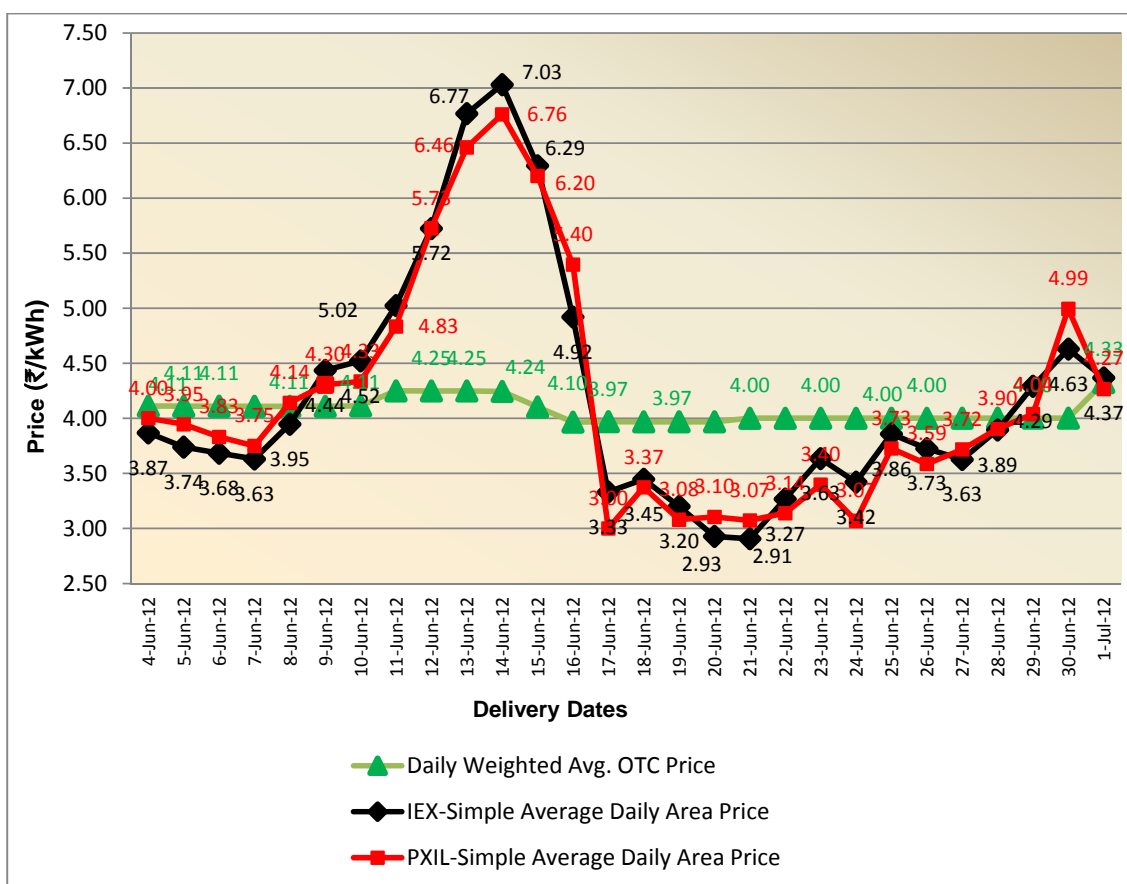
1. The Forward Curve for the next eleven months period i.e. July 2012 - June 2013 as on 9<sup>th</sup> July 2012 is generally flat in the range of ₹3.75-₹4.41/kWh. Thereafter in June 2013 the curve drops down since certain higher priced contracts are getting completed in May 2013.
2. The Forward Curve as on 9<sup>th</sup> July 2012 has been formulated for a period of eleven months based on reported contracts (for 9<sup>th</sup> July 2012 - 15<sup>th</sup> June 2013 period of power delivery). The numbers of contracts reported for the initial months (July and August 2012) were higher (30 to 8 contracts) than those of later months i.e. October 2012 to June 2013. It is in alignment with the general trend that liquidity is higher for nearer months compared to farther months.
3. A comparison of forward curves (Chart 4 & Chart 4.1) gives us a picture of expected delivery price for July 2012- June 2013 as on 13<sup>th</sup> June (Chart 4.1) and as on 9<sup>th</sup> July (Chart 4). It is possible that the prices for the same delivery period are different during different periods of time which gets captured in this comparison. For instance prices for expected delivery for July and August 2012 have marginally increased from ₹3.85/kWh (May) to ₹4.41/kWh (June).



### III. Post-facto Comparison of Prices in OTC Contracts and Power Exchanges (on Power Delivery Dates)

The post facto graph shows the average OTC price vis-à-vis power exchanges prices for the last month's power deliveries. Hence this compares the spot delivered prices with OTC deliveries (OTC contracts may have been executed earlier but delivered on these same days). The process of calculating the data points is same as in the forward curve.

Chart 5: Comparison OTC deliveries and Power Exchange Spot Delivery Price for June 2012



#### Observations

- The prices in power exchanges have fluctuated over a wide range ( ₹ 2.91 to 7.03 / kWh ) over the month and, the 2<sup>nd</sup> week witnessed very high prices . However, OTC contract prices were generally constant in the range of ₹3.97 to 4.33/ kWh

over this period. It may be noted that Power Exchange is a day ahead market with standardized contracts with no transmission corridor assurance while the OTC - Contracts are weekly/monthly contracts with flexibility of customization and transmission corridor assurance. The price comparison of OTC- Contracts and Power Exchanges should be seen in this light.

## Overall Comparative View between May and June 2012

Following table shows the number of contracts reported during May and June 2012 categorized according to the period of power supply.

**Table 3: Number of Contracts Reported in May and June 2012<sup>ψ</sup>**

	May-12 (five weeks)	Jun-12 (four weeks)
Above three months and upto 12 months	0	0
One month or above	34	26
One week or above	20	12
Less than a week	46	114
<b>Total</b>	<b>100</b>	<b>152</b>

From the above table it is clear that the total numbers of contracts for power deliveries for the category one month or above; were lesser in June (26 Contracts) than in May (34 Contracts).

A comparative table to represent maximum and minimum prices at both the exchanges vis-à-vis OTC contracts prices is given below:

**Table 4: Maximum and Minimum Prices - A Comparative View ₹/ kWh (Dates)**

	May 2012 (30th April- 3rd June)		June 2012 (4th June - 1st July)	
	Maximum	Minimum	Maximum	Minimum
IEX	4.98 (28th May)	3.30 (1st May)	7.03 (14th June)	2.91 (21st June)
PXIL	5.63 (26th May)	3.26 (1st May)	6.76 (14th June)	3.00 (17th June)
OTC Contracts	4.47 (30th April,28-30th May)	2.96 (30th April)	6.15 (13th June)	3.53 (30th June)

<sup>ψ</sup> Including swap/banking contracts between different DISCOMS

## Overall Inferences

1. From Chart-1 i.e. Comparison of prices of Short-term OTC Contracts with Power Exchange Prices (on Contracted Date), it is observed that for most of OTC contract prices were higher than the IEX and PXIL spot prices during the month.
2. Form Table -3 it is observed that there are large number of banking and swapping contracts (68) undertaken by Northern States recently. This may be to meet unexpected and extended demand for power during prolonged summer season.
3. The forward curve for July and August 2012 have moved up from ₹3.85/kWh in May to ₹4.41/kWh in June.

*Annexure-I*

**Table 5: List of Trading Licensees who have undertaken Contracts in  
the period 4<sup>th</sup> June – 1<sup>st</sup> July 2012\***

Sr.No.	Name of Licensee	4th- 10th June	11th-17th June	18th- 24th June	25th June- 1st July
1	PTC India Ltd.	Y(36)	Y(17)	Y(24)	Y(7)
2	NTPC Vidyut Vyapar Nigam Ltd.	Y(6)	Y(6)	Y(20)	Y(19)
3	GMR Energy Trading Ltd.	Y(1)	Y(1)	NIL	Y(2)
4	Adani Enterprises Ltd.	NIL	NIL	Y(1)	NR
5	JSW Power Trading Company Ltd.	Y(1)	NIL	Y(2)	Y(3)
6	Jaiprakash Associates Limited	NIL	Y(4)	Y(2)	NR
Total No. of Contracts		44	28	49	31
Total for month for all traders		152			


Note 1: Y(): Contracts had been struck (Number of Contracts)

NIL: No Contracts was made during the week

NR: Not Reported

\*Note 2: This table shows list of traders who have reported & undertaken at least one contracts during the reported period. There could be some traders who have reported but did not undertake any contracts.

## I. The Scatter Diagram: Comparison of prices of Short Term OTC Contracts with Power Exchange Prices ( on Contracted Date)

 *Process of Formulation:* The scatter diagram represents the details of OTC contracts undertaken by traders during any particular time period (e.g. for last four or five weeks) for short-term (upto less than a year) transactions of electricity. Each data-point represents contract sale-price on a particular contract date.

The varied shapes are to depict contracts for different time-span, e.g. the squares are for contracts of more than three months but less than a year, largest circles are for contracts which have been made for one or upto three months ahead, the triangles are to represent contracts made for a week or more but for less than one month and smallest ones (daimond shaped) are for one day or more but less than a week period of contracts. In this diagram, no distinction has been made among the traders. The black and red markers connected with lines show the spot prices at the two power exchanges, viz. the Indian Energy Exchange (IEX) and the Power Exchange of India Ltd. (PXIL) on the respective contract dates.

## II. The Forward Curve of Power Price

 *Process of Formulation*

The forward curve has been made based on OTC sale prices reported every week by the traders. For a contract of a full month, the average monthly contract price is considered discretely as the price for each day. Finally, the average daily price for the forward curve is the weighted average daily price for all contracts existing in these days. (Weights being the respective contracted daily volume).

## III. The Post-Facto Graph: Post-facto Comparison of Prices in OTC Contracts and Power Exchanges (on Power Delivery Dates)

 *Process of Formulation*

The post facto graph shows the average OTC price vis-à-vis power exchanges prices for the last month's power deliveries. Hence this compares the spot delivered prices with OTC deliveries (OTC contracts may have been executed earlier but delivered on

these same days). The process of calculating the data points is same as in the forwards curve.

IV. The difference between Scatter Diagram and Post Facto Graph is as follows:

- a) The scatter diagram represents the details of OTC contracts undertaken by traders during any particular time period (e.g. for last five weeks) for short-term (upto less than a year) transactions of electricity. Each data-point represents contract sale-price on a particular contract date.
  - b) The post facto graph shows the average OTC price vis-à-vis power exchanges prices for the last month's power deliveries. It gives a comparison between the spot delivered prices and OTC deliveries (OTC contracts may have been executed earlier but delivered on these same).
- V. The 96 Blocks (24 hour) simple average prices of the 12 bid areas is being termed as simple average daily area price. The Power Exchanges' prices used in the report are calculated using following formulas:

Hourly Average (Hn) = (A1+ A2+ E1+E2+N1+N2+N3+W1+W2+W3+S1+S2) /12  
for Hour 1 to 24

Simple Average Area Price = (H1 + H2 +... +H23+ H24) / 24 for the full day.