Weekly Reporting of OTC Contracts: Monthly Analysis (May 2011)

[An analysis of all weekly reports (reporting period 2nd May – 5th June) received from licensed-traders for the month of May 2011]

Prepared on 30th June 2011

Market Monitoring Cell, CERC

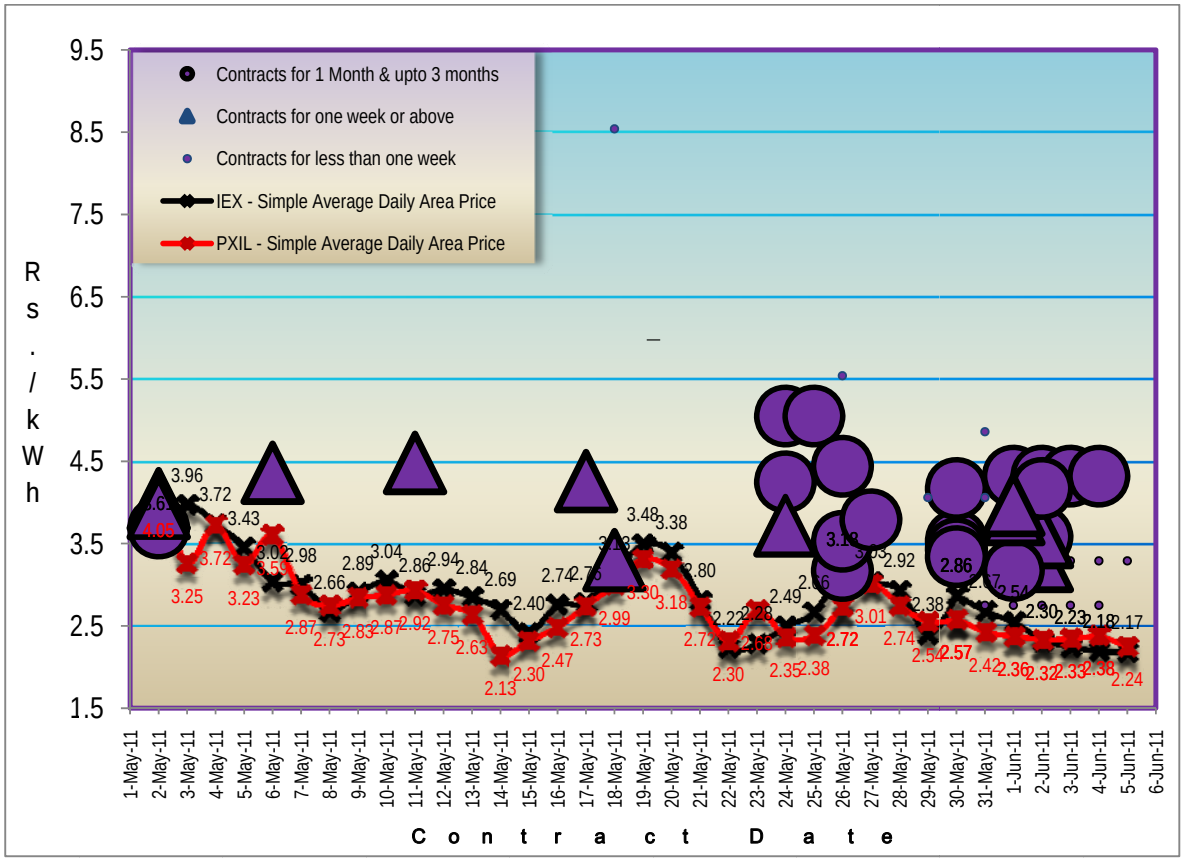
Snapshot for May 2011

- ✓ The reported short-term contract volume for the month of May was 2736.8 MUs whereas the same was 9324.62 MUs for the month of April. There is a 71% decrease in reported contract-volume.
- ✓ 28% of total volume has been contracted at above price of Rs. 4/kWh.
- ✓ Total number of contracts (including swap & Banking) in May was 122 by 6 traders whereas in April it was 78 by 7 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 2nd May 2011 to 5th June 2011. As is seen from the scatter diagram, the contracts were concentrated in last fortnight of the reported period and in the price was in a range of Rs. 2.75/kWh to Rs. 5.05/kWh. The contracts reported were mostly for one-month period of power delivery.

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



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 (Rs./ kWh)		Weighted Average of Sale Price (Rs./ kWh)	Total Volume (MU)
	Max	Min		
2nd May -8th May	4.36	3.69	4.04	71.06
9th May -15th May	4.48	4.48	4.48	4.80
16th May -22nd May	8.54	3.29	3.57	29.49
23rd May-29th May	5.54	3.17	4.18	471.22
30th May-5th June	4.86	2.75	3.58	1083.01
Total				1659.57

Source: Based on Electricity Traders' weekly reports

Table 2: Prices on Power Exchanges on OTC Contracts Dates

Contract Date (2011)	2nd May	6th May	11th May	17th May	18th May	24th May	25th May	26th May	27th May	28rd May	29th May	30th May	31th May	1st June	2nd June	3rd June	4th June	5th June
IEX (Rs. / kWh)	3.61	**3.02**	**2.86**	**2.76**	**3.13**	**2.49**	**2.66**	**3.18**	**3.03**	**2.92**	**2.38**	**2.86**	**2.67**	**2.54**	**2.30**	**2.23**	**2.18**	**2.17**
PXIL (Rs. / kWh)	4.05	**3.59**	**2.92**	**2.73**	**2.99**	**2.35**	**2.38**	**2.72**	**3.01**	**2.74**	**2.54**	**2.57**	**2.42**	**2.36**	**2.32**	**2.33**	**2.38**	**2.24**
OTC Contracts (Rs./ kWh)	4.04 (Rs./ kWh) (2nd-8th May)		4.48 (Rs./kwh) (9th-15th May)	3.57 (Rs./kwh) (16th-22nd May)		4.18 (Rs. /kWh) (23rd – 29th May)						3.58 (Rs./ kWh) (30th May- 5th June)						

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

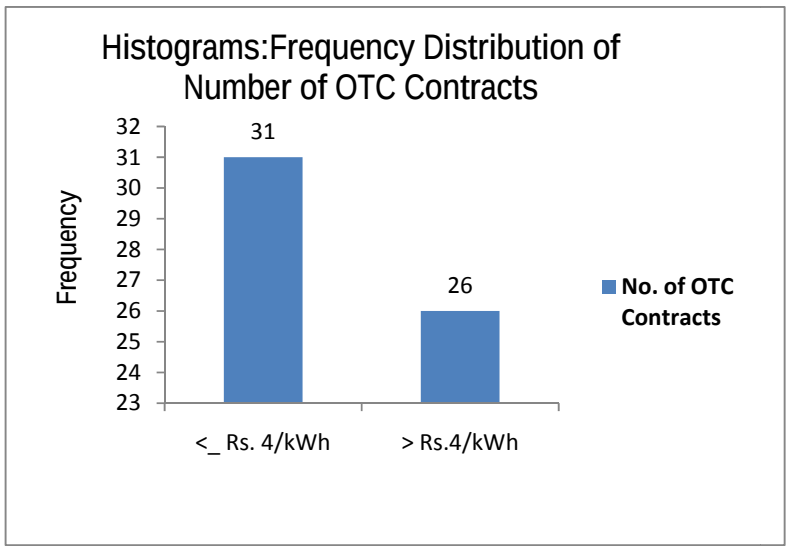
Observations

1. In the beginning of May, OTC contract prices were quite close to the Indian Power Exchange (IEX) and Power Exchange of India Ltd spot prices. But later in the month, both the exchanges' followed a downward trajectory. The minimum price in the exchanges during 2nd May – 5th June 2011 was Rs. 2.13/kWh (PXIL, 14th May 2011) while that in the OTC market was Rs. 2.75/kWh. Maximum price at the exchange reached Rs. 4.05/kWh (PXIL, 2nd May 2011); however there was one contract in the range of Rs. 8.54/kWh happened for one day during that period.

2. OTC contracts mostly are for a delivery period of one month. The scheduling of these contracts is generally happening from one day to one month after the contract date.

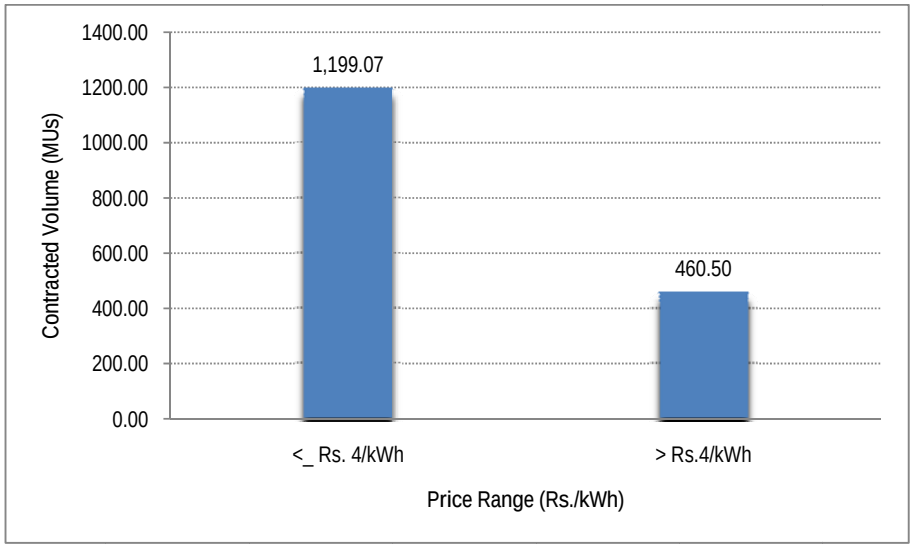
3. As for the number of contracts, 26 out of total 57♣ contracts were entered above Rs. 4/kWh (total 122 contracts including swap & banking).

Chart 2: Histogram of Number of OTC Contracts



4. The cumulative volume traded above Rs. 4/kWh was 460.50♣ MUs which is 28% of total OTC contracts for May 2011.

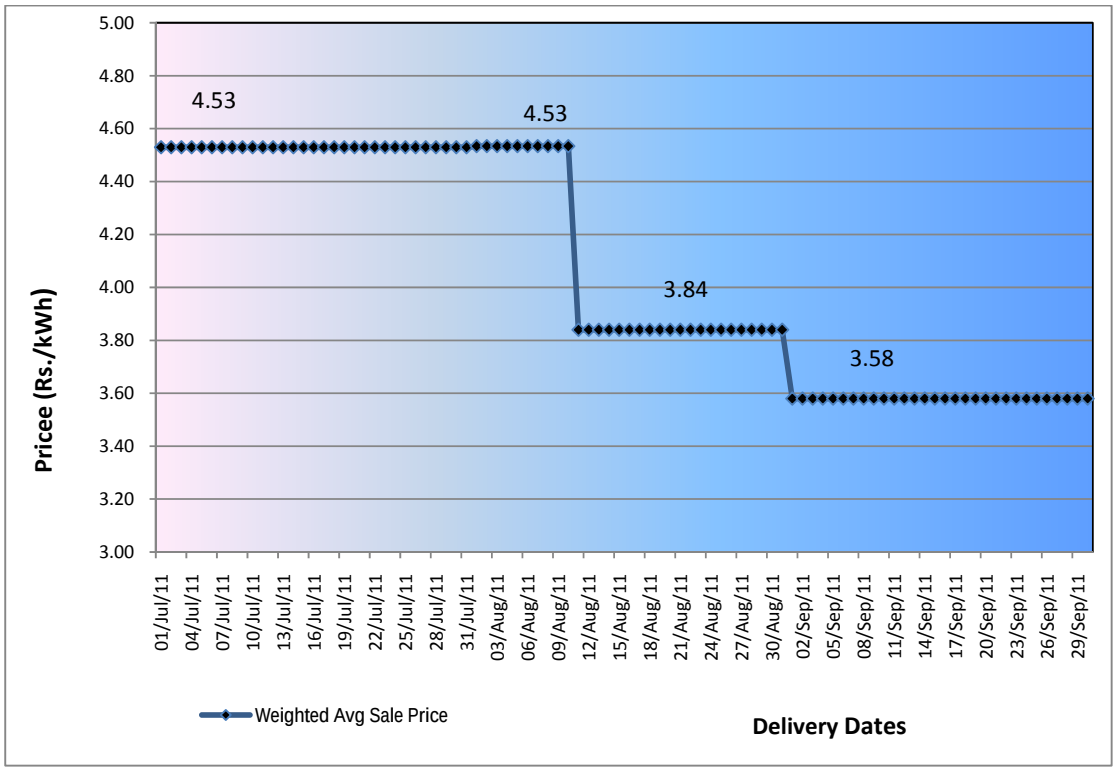
Chart 3: Cumulative Volume Traded below and above Rs. 4/kWh during 2nd May-5th June 2011



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

II. Three-Month Forward Curve of Power Prices

Chart 4: Forward Curve for 1st July- 30th September 2011



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 for supply of power from 1st July 2011 to 30th September 2011, i.e. 90 days ahead period of power supply. This forward curve has been made on 29th June but is based on 57 contract prices reported by trader's upto 5th June 2011.

Observations

1. The forward curve for the next three month period i.e. from 1st July 2011 to 30th September 2011 is downward sloping. For August delivery, power price falls from Rs.4.53/kWh to Rs. 3.84/ kWh which falls further to Rs. 3.58/kWh on 1st September 2011 and remains at that level till the end of September.
2. It may be noted that, the nature of the forward curves drawn in April and May are same. The curve drawn in April shows a downward trend in prices of power deliveries from 13th May-9th August 2011which is similar to the one drawn presently which shows a downward trend for power deliveries in 1st July to 30th September 2011. Prices for power

deliveries in the month of August are different in two graphs. This is due to the fact that new contracts reported during this period decreased the average sale price from Rs. 4.58/kWh earlier to Rs. 3.84/kWh for the month of August deliveries. However price for July deliveries still remains the same.

Chart 4: Forward Curve in June for OTC Market, July- September 2011

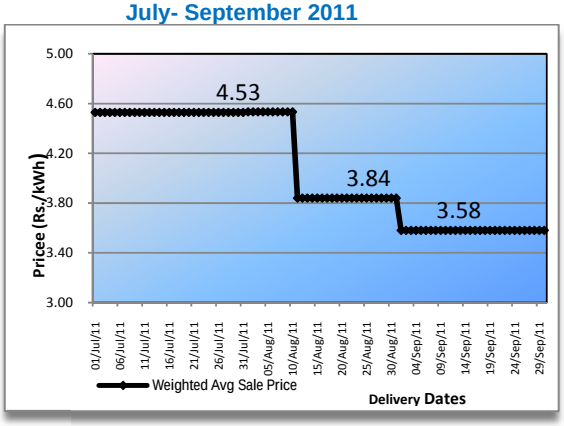
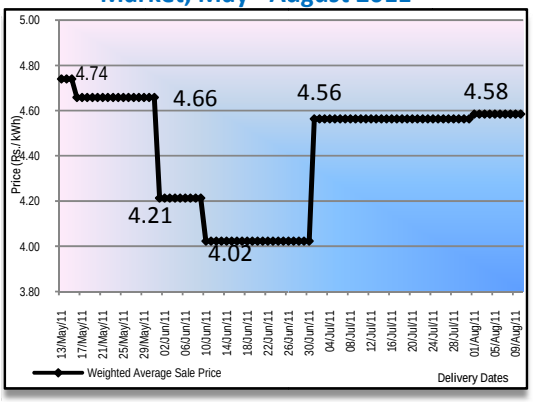


Chart 4.1: Forward Curve in April for OTC Market, May - August 2011

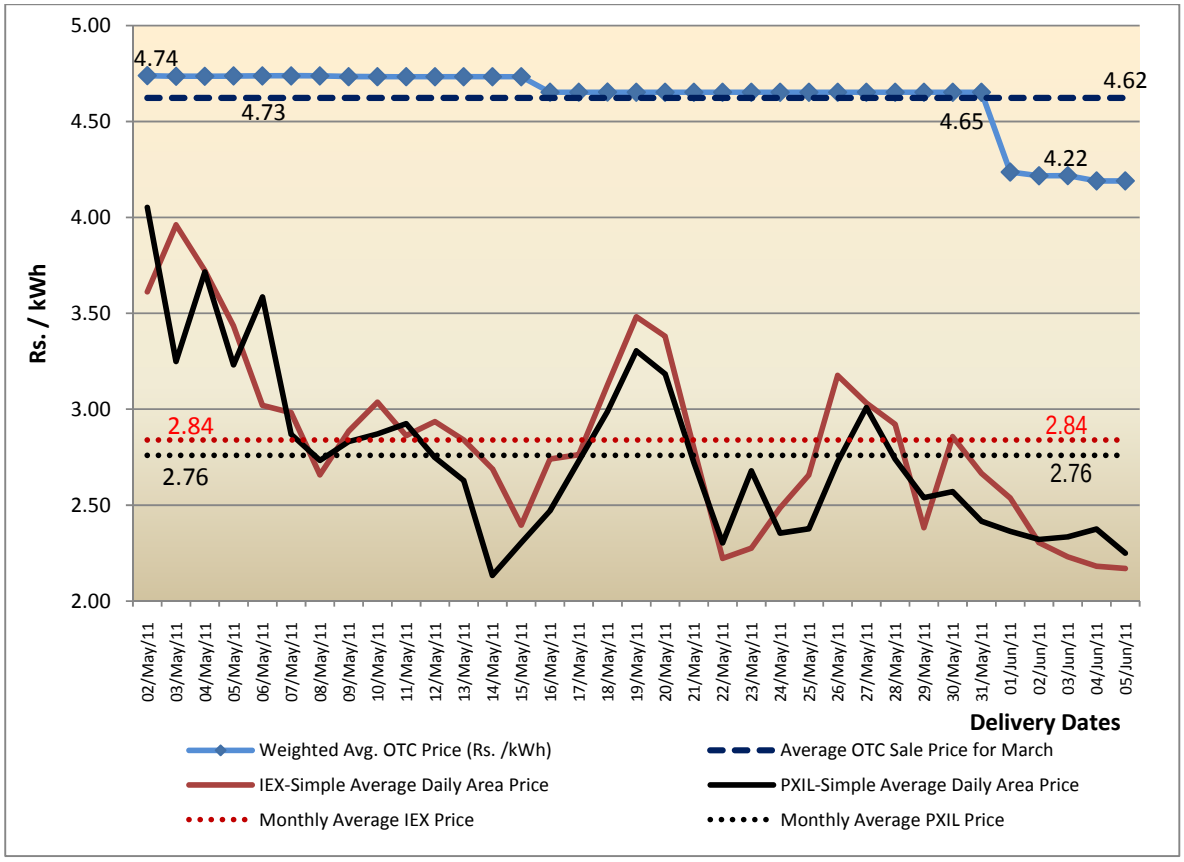


III. Post-facto Comparison of Prices in OTC Contracts and Power Exchanges (on Power Delivery Dates)

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.

It is observed that IEX and PXIL prices were below the average OTC throughout the month of May.

Chart 5: Comparison OTC deliveries and Power Exchange Spot Delivery Price for May 2011



Overall Comparative View between April and May 2011

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

Table 3: Number of Contracts Reported in April and May 2011[Ψ]

	April- 2011	May-2011
Above three months and upto 12 months	5	0
One month or above	58	39
One week or above	3	20
Less than a week	12	63
Total	78	122

From the above table it is clear that the total numbers of contracts for power deliveries for one month or above were lesser in May than in April 2011.

A comparative table to represent maximum and minimum prices at both the exchanges vis-à-vis OTC contracts prices.

Table 3: Maximum and Minimum Prices-A Comparative View Rs/ kWh (Dates)

	April 2011 Report		May 2011(2nd May-5th June)	
	Maximum	Minimum	Maximum	Minimum
IEX	5.94 (13th)	2.84 (24th)	3.96 (3rd)	2.17 (5th June)
PXIL	6.71 (28th Mar)	2.82 (1st May)	4.05 (2nd)	2.13 (14th)
OTC Contracts	5.65 (26th)	3.17 (29th)	8.54 (18th)	2.75 (31st)

[Ψ] *Including swap/ banking contracts between different DISCOMS*

Overall inferences

1. From Chart-1 (Contracted date price analysis), it is observed that a number of OTC contract prices were close to the IEX and PXIL spot prices in the beginning of the month though later both the exchange prices went below the OTC contract prices. (it may be pertinent to highlight that OTC contracts are for delivery over a 1- 3 month period of whereas spot price are day ahead contracts)

2. From Chart-5 (post facto power delivery date analysis), it is seen that the average OTC sale price was higher than the average exchange prices. Difference between the two was Rs. 1.86/kWh (PXIL & OTC) and Rs. 1.78/kWh (IEX & OTC).

3. In Chart 4, the Forward curve for 90 days ahead period (for 1st July- 30th September 2011 period of power delivery) is showing a descending trend throughout the period.

Annexure-I

Table 4: List of Trading-Licensees who have undertaken Contracts in the period 2nd May- 2th June 2011*

	Name of Licensee	2nd -8th May	9th-15th May	16th-22nd May	23rd-29th May	30th-5th May
1	NTPC Vidyut Vyapar Nigam Ltd.	Y (12)	Y(1)	Y (3)	Y (12)	Y (16)
2	PTC India Ltd.	Y (10)	Y(8)	Y (10)	Y (3)	Y (21)
3	GMR Energy Trading Ltd.	NIL	NIL	NIL	Y (6)	Y (3)
4	Tata Power Trading Co. Ltd.	NIL	NIL	Y (1)	Y (4)	Y (2)
5	Lanco (NETS)	Y (1)	NIL	Y (1)	Y (2)	Y (5)
6	JSW Power Trading	Y (1)	NIL	NIL	NIL	NIL
Total No. of Contracts		24	9	15	27	47
Total for month for all traders						122

Note 1: *NR: Not Reported*

NIL: No Contracts was made during the week

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

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

Annexure-II

I. The Scatter Diagram

- ***Process of Formulation***: 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.

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 (like dots) 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

- ***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

- ***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.