Weekly Reporting of OTC Contracts: A Monthly Analysis

(February 2011)

[An analysis of all weekly reports (reporting period 31st Jan – 27th Feb) received from licensed-traders for the month of February 2011]

Prepared on 8th March 2011

Centre for Monitoring Indian Economy &
Market Monitoring Cell, CERC

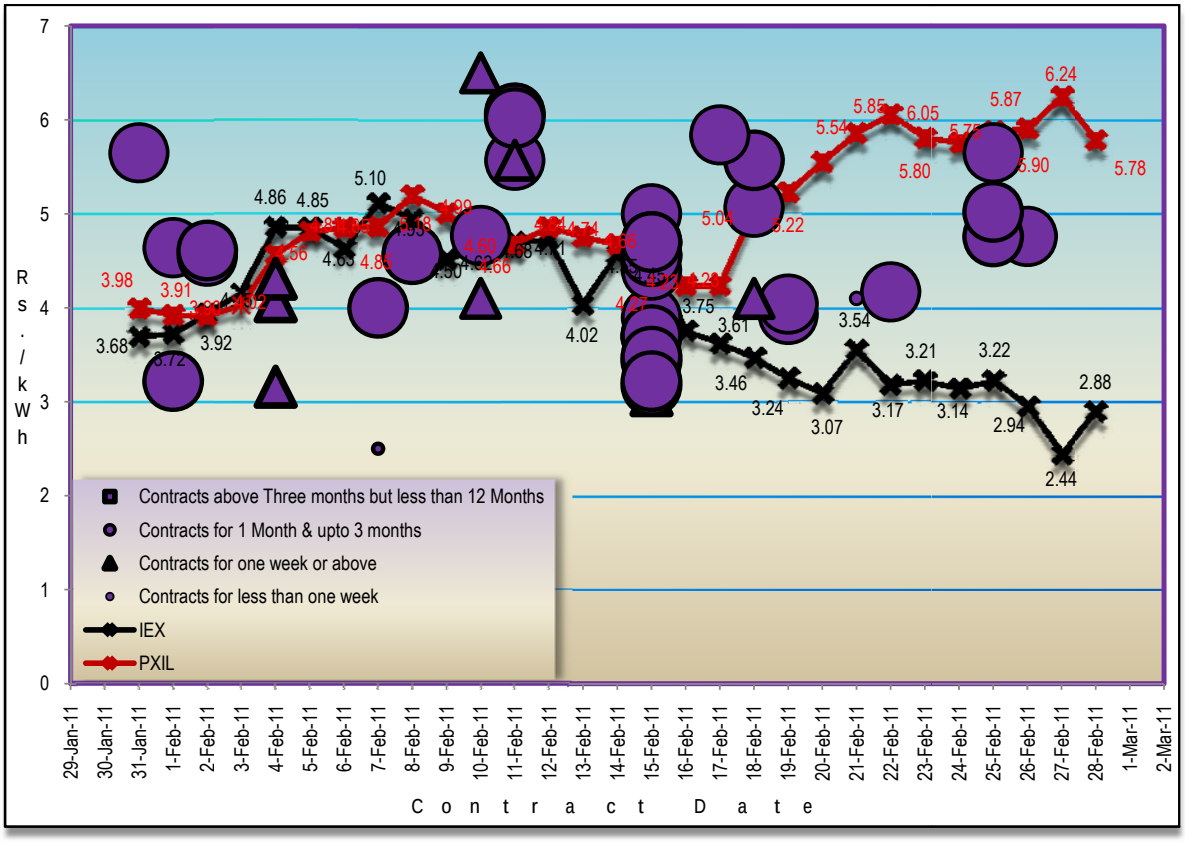
Snapshot for February 2011

- ✓ The reported short-term contract volume for the month of February was 3156.57 MUs whereas the same was 2392.19 MUs for the month of January. This is 26% increase in reported contract-volume.
- ✓ Only 34% of total volume reported has been contracted above price of Rs. 4/kWh.
- ✓ Total number of contracts (including swap & Banking) in February was 102 by 7 traders whereas in January it was 109 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 31st January 2011 to 27th February 2011. As is seen from the scatter diagram, the OTC contracts are well spread throughout the month and in a range of Rs. 2.5/kWh to Rs. 6.5/kWh. The contracts reported were mostly for one-month to upto two months 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 are 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		
31st January -6th February	5.65	3.16	4.45	245.67
7th - 13th February	6.50	2.50	5.45	398.41
14th -20th February	5.84	3.07	3.74	2379.68
21st - 27th February	5.65	4.10	5.20	132.81
Total	_			3156.57

Source: Based on Electricity Traders' weekly reports

Table 2: Prices on Power Exchanges on OTC Contracts Dates

Contract Date (2010)	31st Jan	1st Feb	2nd Feb	4th Feb	7th Feb	8th Feb	10th Feb	11th Feb	15th Feb	17th Feb	18th Feb	19th Feb	21st Feb	22nd Feb	25th Feb	26th Feb
IEX (Rs. / kWh)	3.68	3.72	3.92	4.86	5.10	4.93	4.62	4.68	4.45	3.61	3.46	3.24	3.54	3.17	3.22	2.94
PXIL (Rs. / kWh)	3.98	3.91	3.90	4.56	4.85	5.18	4.60	4.66	4.27	4.23	5.04	5.22	5.85	6.05	5.87	5.90
OTC Contracts (Rs./ kWh)	Rs. 4.45/ kWh (31st Jan – 6th Feb)				Rs. 5.45/ kWh (7th – 13th Feb)				Rs. 3.74/ kWh (14th – 20th Feb)				Rs. 5.20/ kWh (21st – 27th Feb)			

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

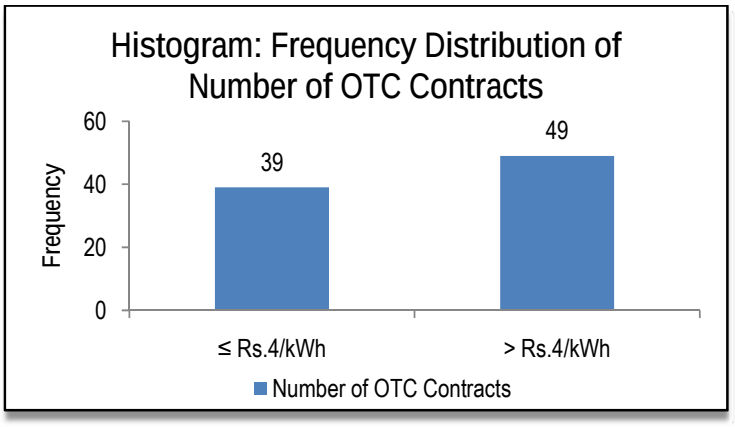
Observations

1. In month of February, the OTC contract prices were quite close to the power exchange spot prices. The minimum price in the exchange during 31st January – 27th February was Rs. 2.44/kWh (IEX, 27th Feb. 2011) while that of in the OTC market was Rs. 2.50/kWh. Maximum price at the exchange reached Rs. 6.24/kWh (PXIL, 27th Feb. 2011) and in the OTC market it was Rs. 6.50/kWh. Later in the month, PXIL prices were above the OTC contract prices.

2. In month of February, OTC contracts are mostly for a delivery period of a month or upto two months. The scheduling of these contracts is happening from one month after the contract date to even seven months after contract date.

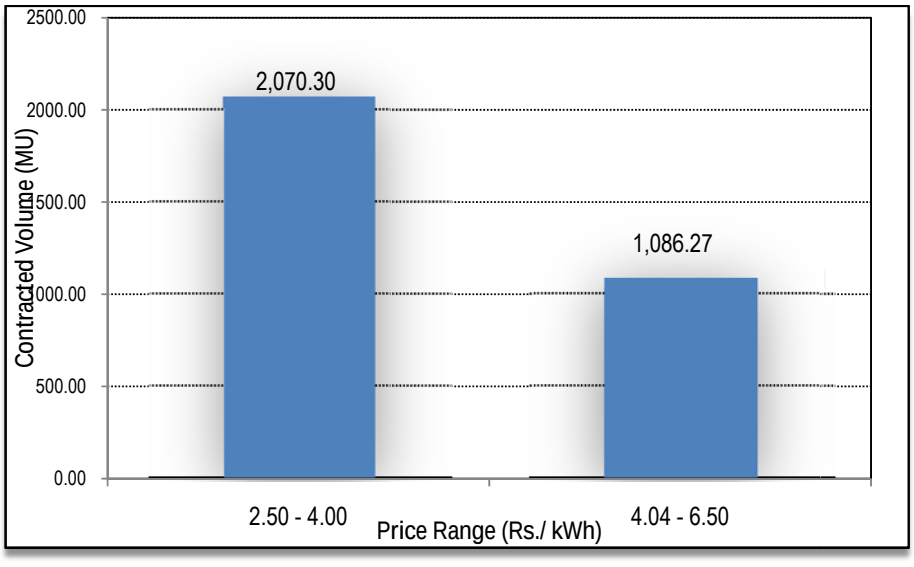
3. In February, the number of contracts entered above Rs. 4/kWh were 49 out of total 88[♣] contracts (total 102 contracts including swap & banking).

Chart 2: Histogram of Number of OTC Contracts



4. In February, the cumulative volume traded above Rs. 4/kWh was 2070.30 MUs which is 34% of total OTC contracts reported for February 2011.

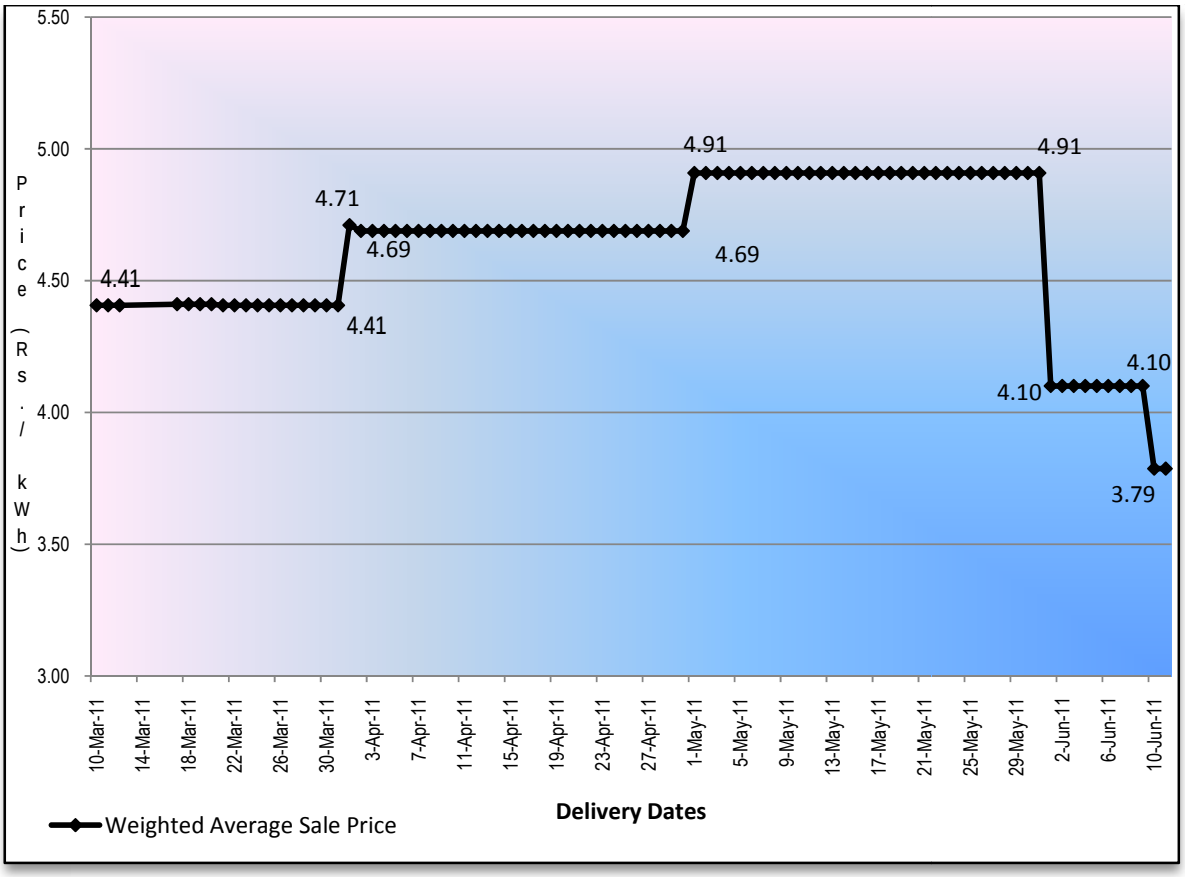
Chart 3: Cumulative Volume Traded below and above Rs. 4/kWh during January 2011



[♣] *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 10th March- 11th June 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 10th March 2011 to 11th June 2011, i.e. 90 days ahead period of power supply.

Observations

1. The forward curve for the next three month period i.e. from 10th March 2011 to 11th June 2011 is initially upward sloping and thereafter downward sloping. For March delivery the power price is Rs.4.41/kWh which rises to Rs. 4.71/kWh on 1st April 2011. For May delivery, once again price rises to Rs.4.91/kWh and till 31st May it remains at this price level. For power delivery in June, the price fell to Rs. 4.10/kWh and remains at this level till 9th June 2011. It fell further to Rs. 3.79/kWh on 10th June. This forward curve made in February is based on 103 contract prices reported by traders.

2. It may be noted that, the nature of the forward curves drawn for January and February are different. The curve drawn in January showed an upward trend in power prices whereas that of drawn in February shows a downward trend. Prices for deliveries in March and April period in the two forward curves are different. This is due to new contracts reported during this period increased the average sale prices from Rs. 4.35/kWh earlier to Rs. 4.41/kWh this time for the month of March deliveries and from Rs.4.60/kWh to Rs. 4.69/ kWh for the month of April deliveries. For the month of May deliveries, the price increases to Rs. 4.91/kWh in February from Rs. 4.84/kWh in January. The new contracts executed for June deliveries are at a lower price making the curve go down.

Chart 4: Forward Curve in February for OTC Market, March-June 2011

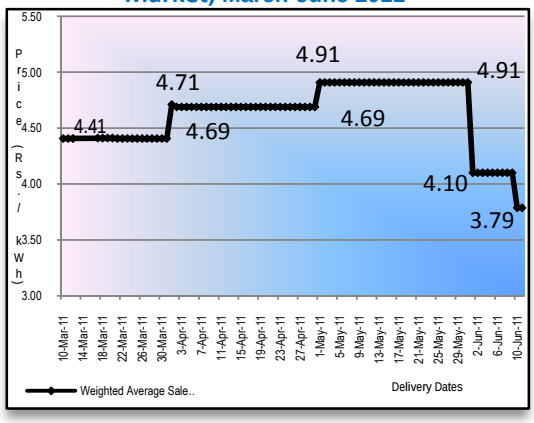
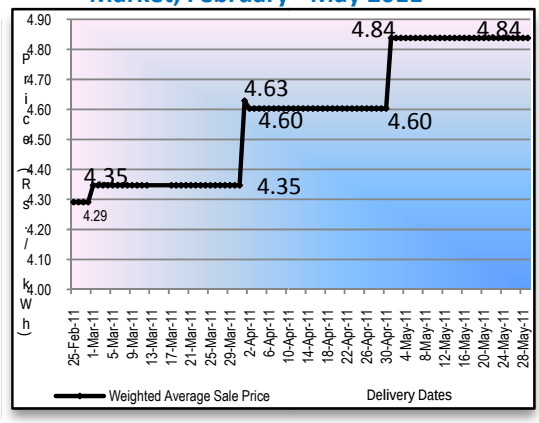


Chart 4.1: Forward Curve in January for OTC Market, February - May 2011

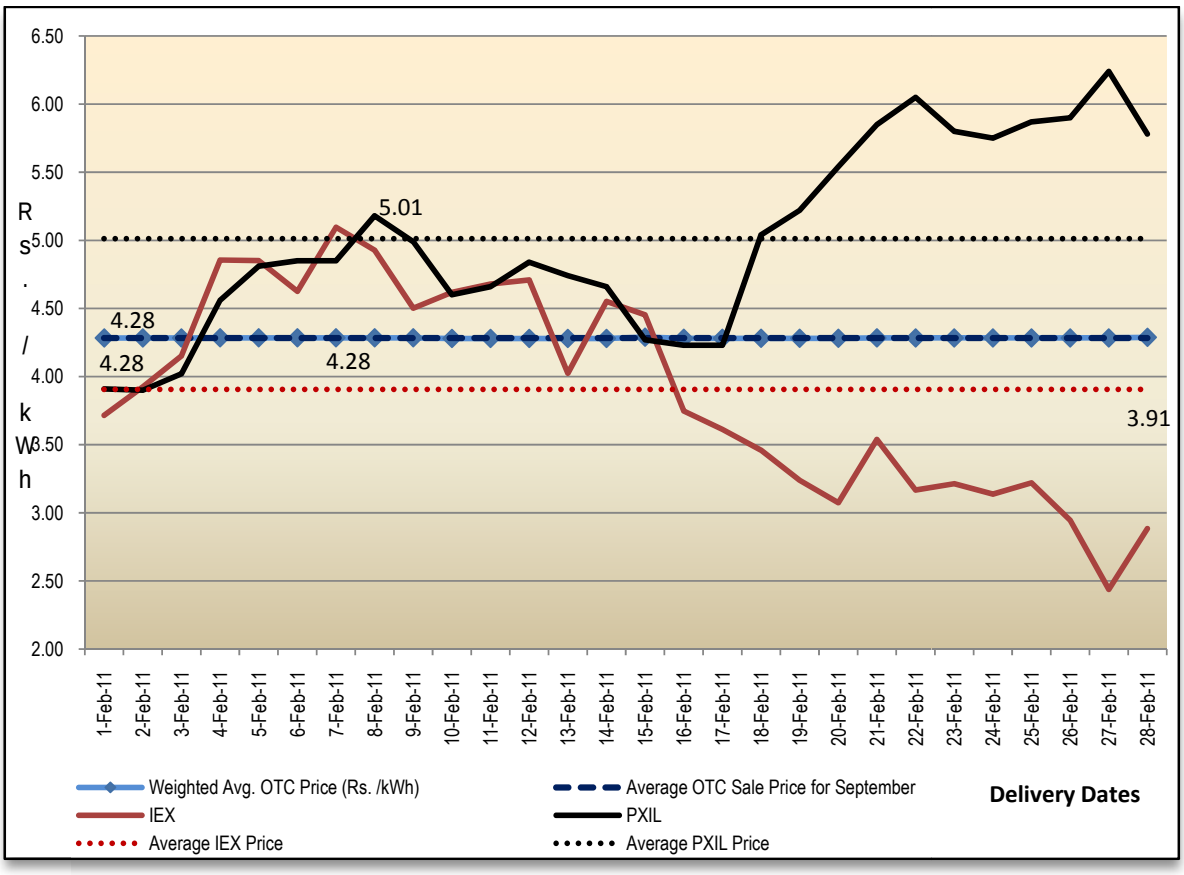


III. Post-facto Comparison of Prices in OTC Contracts and Power Exchanges (on Power Delivery Dates)

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 forwards curve.

This month's graph is in variance from the earlier months' graphs. It is observed that in some days power exchange prices were higher compared to OTC delivery prices. For instance, in the beginning of the month, both power exchanges prices were above the average OTC prices. However, later in the month IEX price went below and PXIL price went above the OTC average price.

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



Overall Comparative View between January and February2011

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

Table 3: Number of Contracts Reported in January and February 2010[Ψ]

	January-11	February-11
One month or above	72	72
One week or above	13	27
Less than a week	24	3
Total	109	102

From the above table it is clear that the total numbers of contracts in January 2011 and in February 2011 are almost same. The number of contracts undertaken for one month or above was same (72) in January and February. The contracts undertaken for less than a week in January was 24 whereas the same was only 3 in February 2011.

2. 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)

	January 2011		February 2011	
	Maximum	Minimum	Maximum	Minimum
IEX	4.06 (22nd)	2.34 (2nd)	5.10 (7th)*	2.44 (27th)
PXIL	4.13 (21st)	3.11 (3rd)	6.24 (27th)	3.9 (2nd)
OTC Contracts	5.87 (31st Dec)	2.56 (11th)	6.50 (10th)	2.50 (7th)

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

Overall inferences

1. From Chart-1 (Contracted date price analysis), it is observed that the OTC contracts executed during 31st January - 27th February period, large number of OTC contract prices (though delivery of these contracts are in the period of March-October 2011) were close to the power exchange spot prices.

2. From Chart-5 (post facto power delivery date analysis), this time it is seen that the average OTC sale price and the power exchange average price were closer to each other in the beginning of the month and then PXIL price went above the average OTC price while IEX price came down below it. Difference between the two was only Rs. 0.73/kWh (PXIL & OTC) and Rs. 0.37/kWh (IEX & OTC). This means that convergence of forward price with spot prices did not happen.

3. In Chart 4, the forward curve for the next three month period i.e. from 10th March 2011 to 11th June 2011 is initially upward sloping and thereafter downward sloping. This is counter intuitive considering that in the summer months like May, June, demand is generally high in North India and prices are expected to be showing upward trend.

Annexure-I

Table 4: List of Trading-Licensees who have undertaken Contracts in February 2011*

	Name of Licensee	31st Jan – 6th February	7th -13th February	14th-20th February	21st – 27th February
1	NTPC Vidyut Vyapar Nigam Ltd.	Y (5)	Y(3)	Y (7)	Y (11)
2	PTC India Ltd.	Y (6)	Y (2)	Y (35)	Y (2)
3	Tata Power Trading Company Pvt. Ltd.	NIL	Y (9)	Y (6)	NR
4	GMR Energy Trading Ltd.	NIL	NIL	Y (2)	NIL
5	Lanco Electricity Utility Limited (NETS)	NIL	NIL	Y (3)	NIL
6	JSW Power Trading Company Ltd.	NIL	Y (1)	NIL	NR
7	Reliance Energy Trading Ltd.	NIL	Y (10)	NIL	NIL
Total No. of Contracts		11	25	53	13
Total for month for all traders					102

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 atleast 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.