

WEEKLY REPORTING OF OTC CONTRACTS: MONTHLY ANALYSIS (JANUARY 2012)

[An analysis of all weekly reports (reporting period 26th December 2011 - 29th January 2012)
received from licensed-traders for the month of January 2012]

Prepared on 9th February 2012

Market Monitoring Cell, CERC

Snapshot for January 2012

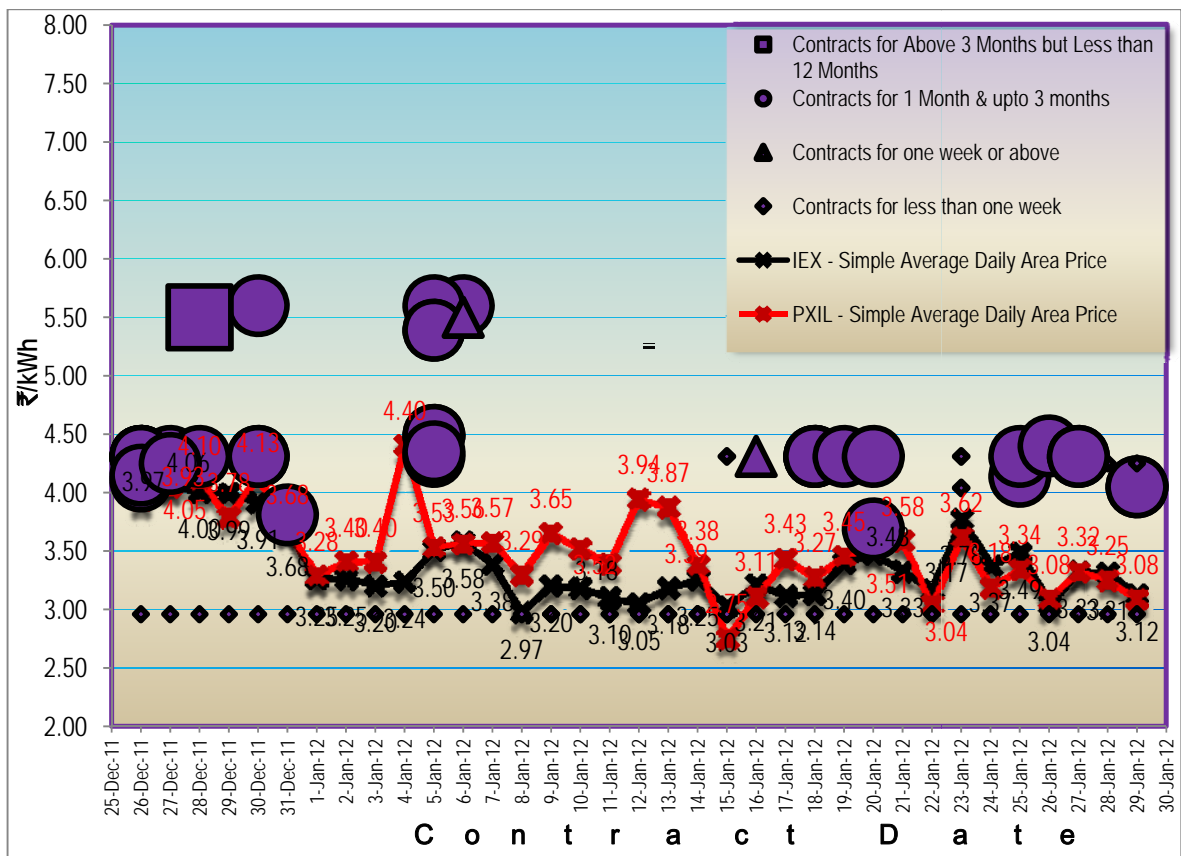
- ✓ The reported short-term contract volume for the month of January 2012 (analysis of five weeks) was 1895.48MUs whereas the same was 1611.92MUs for the month of December 2011 (analysis of four weeks). There is an 18% increase in reported contract-volume.
- ✓ 95% of total volume has been contracted at above price of ₹ 4/kWh.
- ✓ Total number of contracts (including Swap & Banking) in January 2012 (analysis of five weeks) was 137 by 6 traders whereas in December 2011 (analysis of four weeks) it was 120 by 5 traders.

Weekly Reporting of OTC Contracts: Monthly Analysis

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 26th December 2011 – 29th January 2012. As is seen from the scatter diagram, most of the contracts were concentrated in the first and last week of the reported period and the price was in a range of ₹ 2.96/kWh to ₹5.60/ kWh. The contracts reported were mostly for less than a week (85 Contracts) and for a months and above (44 Contracts) period of power delivery.

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



It may be noted that Power Exchange is a day ahead market with standardized contracts and no 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.

Weekly Reporting of OTC Contracts: Monthly Analysis

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		
26th December 2011 - 1st January 2012	2.96	5.60	4.71	655.83
2nd - 8th January	2.96	5.60	5.00	422.38
9th - 15th January	2.96	4.31	3.02	3.35
16th - 22nd January	2.96	4.31	4.24	182.16
23rd - 29th January	2.96	4.40	4.17	187.95
Total	-			1451.69

Table 2: Comparison of Prices in Day Ahead Market with OTC Contracts (Includes Term Ahead Contracts at Power Exchanges)

Contract Date (Dec. 2011- Jan. 2012)	26th Dec.	27th Dec.	28th Dec.	29th Dec.	30th Dec.	31st Dec.	1st Jan.	2nd Jan.	3rd Jan.	4th Jan.	5th Jan.	6th Jan.	7th Jan.	8th Jan.	9th Jan.	10th Jan.	11th Jan.	12th Jan.	13th Jan.	14th Jan.	15th Jan.
IEX (₹ / kWh)	3.97	4.06	4.00	3.99	3.91	3.68	3.25	3.25	3.20	3.24	3.50	3.58	3.38	2.97	3.20	3.18	3.10	3.05	3.18	3.25	3.03
PXIL (₹ / kWh)	3.93	4.05	4.10	3.78	4.13	3.68	3.28	3.40	3.40	4.40	3.53	3.56	3.57	3.29	3.65	3.52	3.39	3.94	3.87	3.38	2.75
OTC Contracts (₹ / kWh)	4.71						5.00						3.02								
	26th December 2011 - 1st January 2012						2nd - 8th January						9th - 15th January								

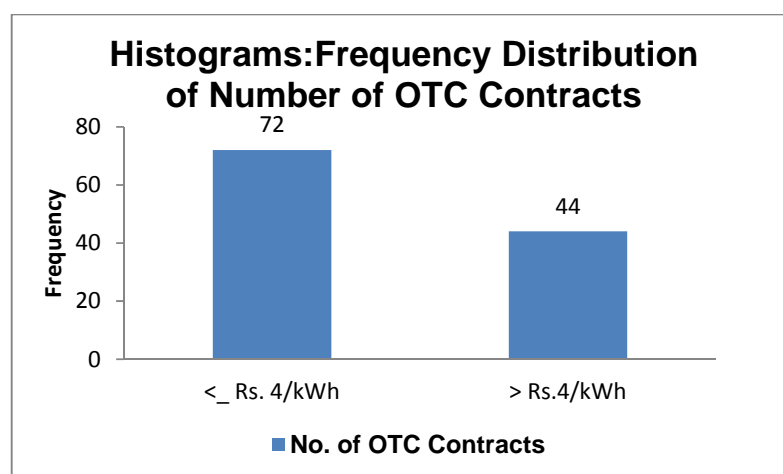
Contract Date (Dec. 2011- Jan. 2012)	16th Jan.	17th Jan.	18th Jan.	19th Jan.	20th Jan.	21st Jan.	22nd Jan.	23rd Jan.	24th Jan.	25th Jan.	26th Jan.	27th Jan.	28th Jan.	29th Jan.
IEX (₹ / kWh)	3.21	3.12	3.14	3.40	3.48	3.33	3.17	3.78	3.37	3.49	3.04	3.33	3.31	3.12
PXIL (₹ / kWh)	3.11	3.43	3.27	3.45	3.51	3.58	3.04	3.62	3.18	3.34	3.08	3.32	3.25	3.08
OTC Contracts (₹ / kWh)	4.24							4.17						
	16th - 22nd January							23rd - 29th January						

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

Observations

1. In the month of January, OTC contract prices were higher than the Indian Energy Exchange (IEX) and Power Exchange of India Ltd (PXIL) spot prices except in the third week of the reported period where prices at Power Exchanges were slightly higher than that of OTC.
2. The minimum price in the exchanges during reported period was ₹2.75/kWh (PXIL, 15th January 2012) while that in the OTC market was ₹2.96/kWh (26th December 2011 – 29th January 2012). Maximum price in Day-Ahead market at the exchange reached ₹4.40/kWh (PXIL, 4th January 2012) and in OTC Market it was ₹5.60/kWh (30th December 2011) which was a 'peak' power contract. It may be noted that Power Exchange is a day ahead market with standardized contracts and no 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.
3. As for as the number of contracts are concerned, 44 out of totals 116* contracts were entered above ₹4/kWh. There were a total 137 contracts including swap & banking during the month.

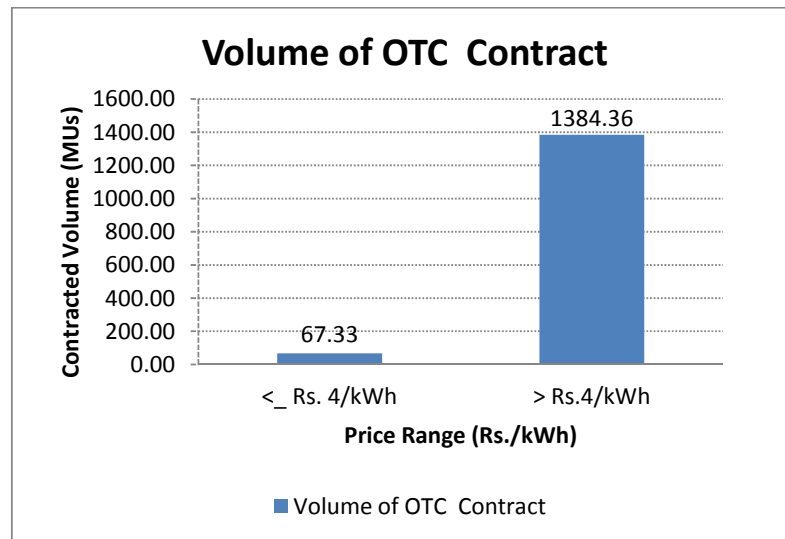
Chart 2: Histogram of Number of OTC Contracts



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

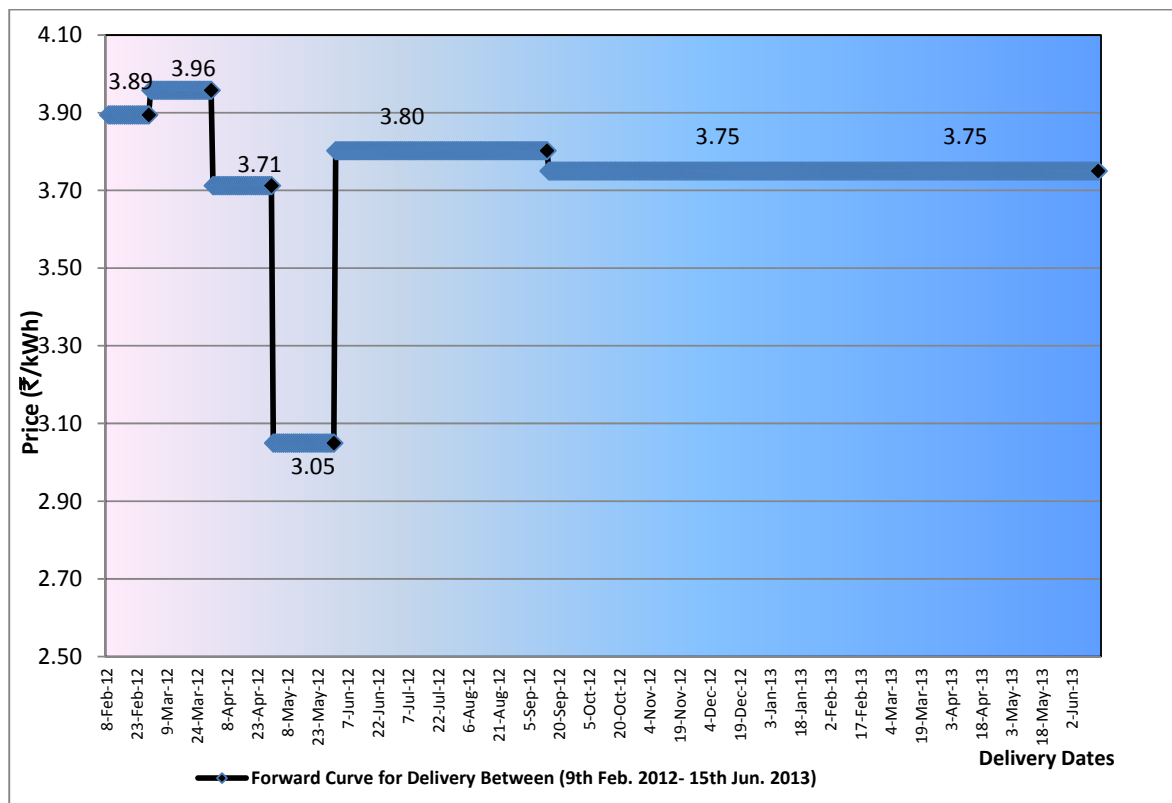
4. The cumulative volume traded above ₹ 4/kWh was 1384.36* MUs which is 95% of total OTC contracts for the reported period 26th December 2011 – 29th January 2012).

Chart 3: Cumulative Volume Traded below and above ₹ 4/kWh during 26th December 2011- 29th January 2012



II. Forward Curve of Power Prices

Chart 4: Forward Curve for 9th February - 15th June 2013



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 9th February 2012 - 15th June 2013, i.e. sixteen months ahead period of power supply. This forward curve is as on 9th February 2012 but based on 137 contract prices reported by trader's upto 29th January 2012.

Observations

1. The forward curve for the next sixteen months period i.e. 9th February 2012 - 15th June 2013 generally followed a declining trend till May 2012 and then followed an upward trend till June 2013.
2. The Forward Curve has been formulated for a period of sixteen months based on reported contracts (for 9th February 2012 - 15th June 2013 period of power delivery).

Weekly Reporting of OTC Contracts: Monthly Analysis

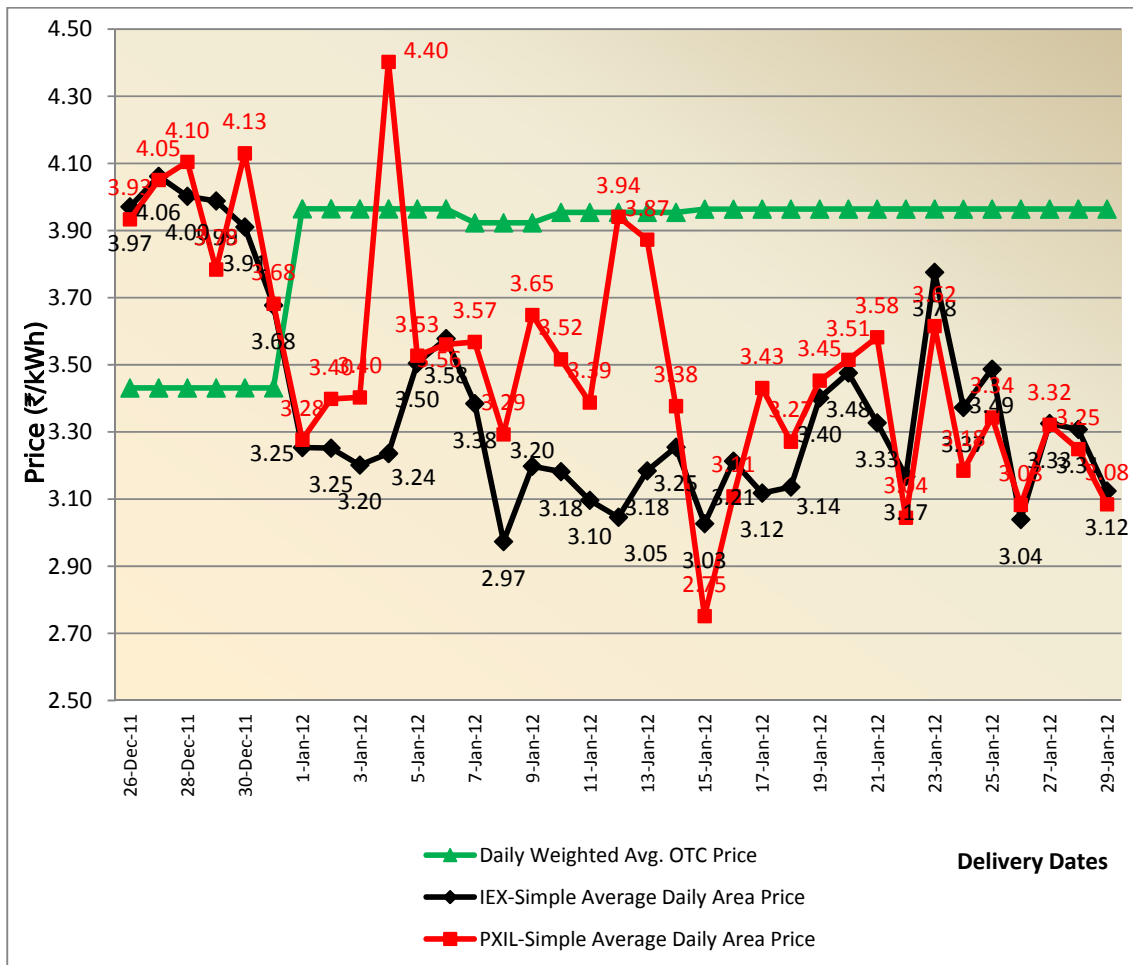
The price followed a declining trend during February 2012 to May 2012 during which price declined from ₹3.89 to ₹3.05/kWh. The curve followed a rising trend till June 2013 during which price increased from ₹3.05 to ₹3.75/kWh. The numbers of contracts reported for the initial months (Feb. and March) were higher (23 to 26 contracts) than those of later months (1 or 2 contracts). It is in alignment with the general trend that liquidity is higher for nearer months compared to farther months.

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 above the average OTC contract prices except at the end of the reported period.

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



Observations

1. The Post-Facto graph shows that for the first week of the reported period the power exchanges' prices remained lower than OTC-contracts' prices however for the next weeks the trend was reverse. It may be noted that Power Exchange is a day ahead market with standardized contracts with no 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.

Overall Comparative View between December 2011 and January 2012

2. Following table shows the number of contracts reported during December 2011 and December categorized according to the period of power supply.

Table 3: Number of Contracts Reported in December 2011 and January 2012^ψ

	Dec-11 (four weeks)	Jan-12 (five weeks)
Above three months and upto 12 months	1	1
One month or above	28	43
One week or above	15	8
Less than a week	76	85
Total	120	137

From the above table it is clear that the total numbers of contracts for power deliveries for the category one month or above; were more in January 2012 (44 Contracts) than in December, 2011(29 Contracts).

^ψ Including swap/banking contracts between different DISCOMS

Weekly Reporting of OTC Contracts: Monthly Analysis

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

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

	December 2011 (28th November - 25th December)		January 2012 (26th December 2011 - 29th January 2012)	
	Maximum	Minimum	Maximum	Minimum
IEX	4.77 (7th Dec.)	3.16 (18th Dec.)	4.06 (27th Dec. 2011)	2.97 (8th Jan. 2012)
PXIL	4.87 (6th Dec.)	3.28 (20th Dec.)	4.40(4th Jan. 2012)	2.75 (15th Jan. 2012)
OTC Contracts	5.60 (23rd Dec.)	2.96 (28th Nov.- 25th Dec.)	5.60 (30th Dec. 2011 & 6th Jan. 2012)	2.96 (26th Dec. 2011 - 29th Jan. 2012)

Overall inferences

1. From Chart-1 (Contracted date price analysis), it is observed that for most of OTC contract, prices were higher than the IEX and PXIL spot prices during the month.
2. From Chart-5 (post facto power delivery date analysis), it is observed that for the first week of the reported period the power exchanges' prices remained lower than OTC-contracts' prices however for the next weeks the trend was reverse.
3. It is also seen that there have been a large number (85) of contracts for less than week period of delivery in the reported period.

Annexure-I

Table 4: List of Trading Licensees who have undertaken Contracts in the period 26th December 2011 – 29th January 2012*

Sr.No.	Name of Licensee	26th December 2011 - 1st January 2012	2nd - 8th January	9th - 15th January	16th - 22nd January	23rd - 29th January
1	PTC India Ltd.	Y(23)	Y(25)	Y(14)	Y(14)	Y(18)
2	NTPC Vidyut Vyapar Nigam Ltd.	Y(9)	Y(1)	Y(6)	Y(11)	Y(10)
3	National Energy Trading & Services Ltd.	Y(2)	NIL	NIL	NIL	NIL
4	JSW Power Trading Ltd.	NIL	Y(2)	NIL	NIL	NIL
5	RPG Power Trading Co. Ltd.	Y(1)	NIL	NIL	NIL	NIL
6	GMR Energy Trading Ltd.	NIL	NIL	NIL	NIL	Y(1)
Total No. of Contracts		35	28	20	25	29
Total for month for all traders						137

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.

Annexure-II

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 four 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.