

# WEEKLY REPORTING OF OTC CONTRACTS: MONTHLY ANALYSIS (MARCH 2012)

[An analysis of all weekly reports (reporting period 27<sup>th</sup> February -25<sup>th</sup> March2012) received from licensed-traders for the month of March 2012]

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

Market Monitoring Cell, CERC

#### Snapshot for March 2012

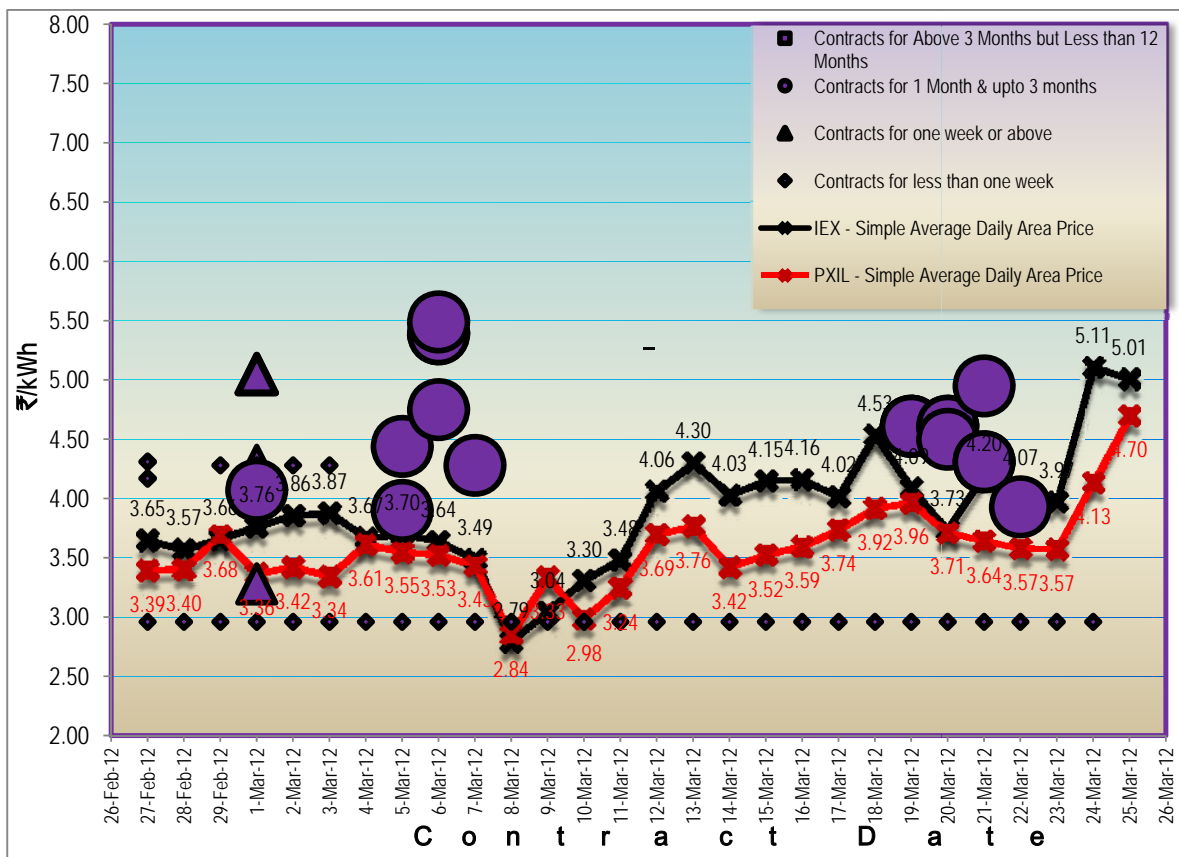
- ✓ The reported short-term contract volume for the month of March 2012 (analysis of four weeks) was 1647.71MUs whereas the same was 1158.14MUs for the month of February (analysis of four weeks). There is a 42% increase in reported contract-volume.
- ✓ 83% of total volume has been contracted at above price of ₹ 4/kWh.
- ✓ Total number of contracts (including Swap & Banking) in March (analysis of four weeks) was 110 by 3 traders whereas in February (analysis of four weeks) it was 107 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 27<sup>th</sup> February – 25<sup>th</sup> March 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 ₹5.49/ kWh. The contracts reported were mostly for less than a week (74 Contracts) and for a months and above (26 Contracts) period of power delivery. However 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.

## 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.		
27th Feb. - 4th March	2.96	5.05	4.23	158.20
5th-11th March	2.96	5.49	4.33	458.00
12th-18th March	2.96	2.96	2.96	3.67
19th-25th March	2.96	4.95	4.36	399.212
<b>Total</b>	-			<b>1019.08</b>

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

Contract Date (2012)	27th Feb.	28th Feb.	29th Feb.	1st Mar.	2nd Mar.	3rd Mar.	4th Mar.	5th Mar.	6th Mar.	7th Mar.	8th Mar.	9th Mar.	10th Mar.	11th Mar.
IEX* (₹/ kWh)	3.65	3.57	3.66	3.76	3.86	3.87	3.67	3.70	3.64	3.49	2.79	3.04	3.30	3.48
PXIL* (₹/ kWh)	3.39	3.40	3.68	3.36	3.42	3.34	3.61	3.55	3.53	3.43	2.84	3.33	2.98	3.24
OTC** Contracts (₹/ kWh)	4.23						4.33							
	27th Feb.-4th March						5th-11th March							

Contract Date (2012)	12th Mar.	13th Mar.	14th Mar.	15th Mar.	16th Mar.	17th Mar.	18th Mar.	19th Mar.	20th Mar.	21st Mar.	22nd Mar.	23rd Mar.	24th Mar.	25th Mar.
IEX* (₹/ kWh)	4.06	4.30	4.03	4.15	4.16	4.02	4.53	4.09	3.73	4.20	4.07	3.97	5.11	5.01
PXIL* (₹/ kWh)	3.69	3.76	3.42	3.52	3.59	3.74	3.92	3.96	3.71	3.64	3.57	3.57	4.13	4.70
OTC** Contracts (₹/ kWh)	2.96						4.36							
	12th -18th March						19th -25th March							

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

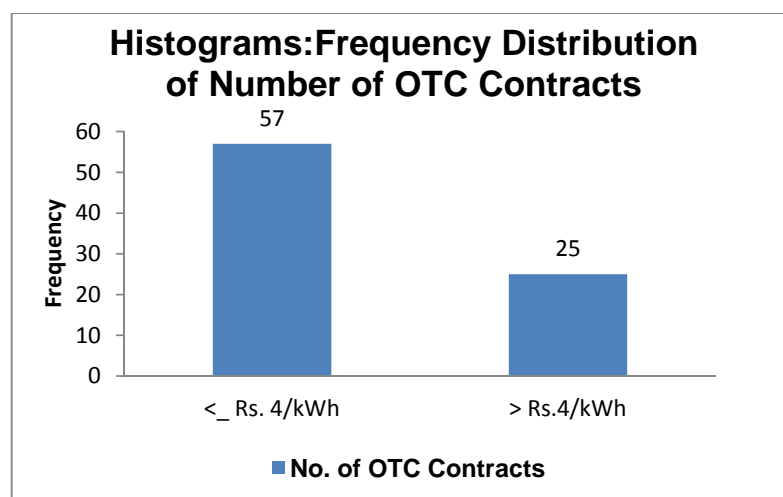
\*: Simple Average Area Prices for the Day for all the Bid Areas

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

### Observations

1. In the month of March, OTC contract prices were generally higher than the Indian Energy Exchange (IEX) and Power Exchange of India Ltd (PXIL) prices except in the 3<sup>rd</sup> week of reported period. 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.
2. The minimum price in the exchanges during reported period was ₹2.79/kWh (IEX, 8<sup>th</sup> March) while that in the OTC market was ₹2.96/kWh (27<sup>th</sup> February – 25<sup>th</sup> March 2012). Maximum price in Day-Ahead market at the exchange reached ₹5.11/kWh (IEX, 24<sup>th</sup> March) and in OTC Market it was ₹5.49/kWh (6<sup>th</sup> March) which was a ‘RTC’ power contract.
3. As for as the number of contracts are concerned, 25 out of totals 82\* contracts were entered above ₹4/kWh. There were a total 110 contracts including swap & banking during the month. However, the cumulative volume traded above ₹4/kWh was 849.58\* MUs which is 83% of total OTC contracts for the reported period 27<sup>th</sup> February – 25<sup>th</sup> March 2012).
4. There has been no contract signed for more than three months duration of power delivery.

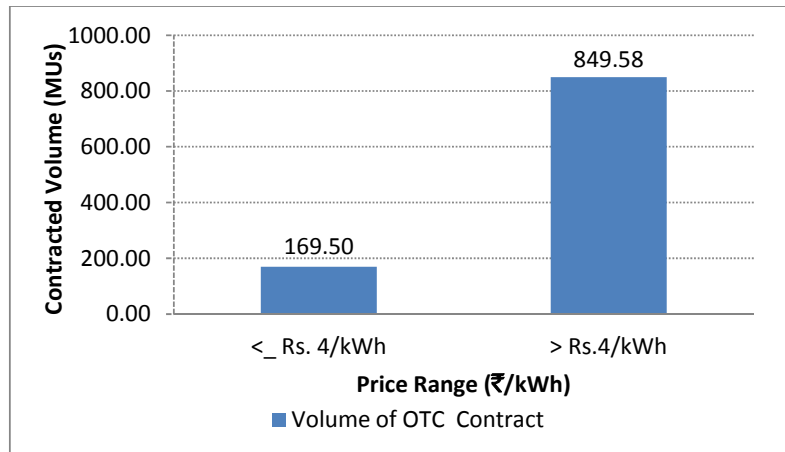
Chart 2: Histogram of Number of OTC Contracts



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

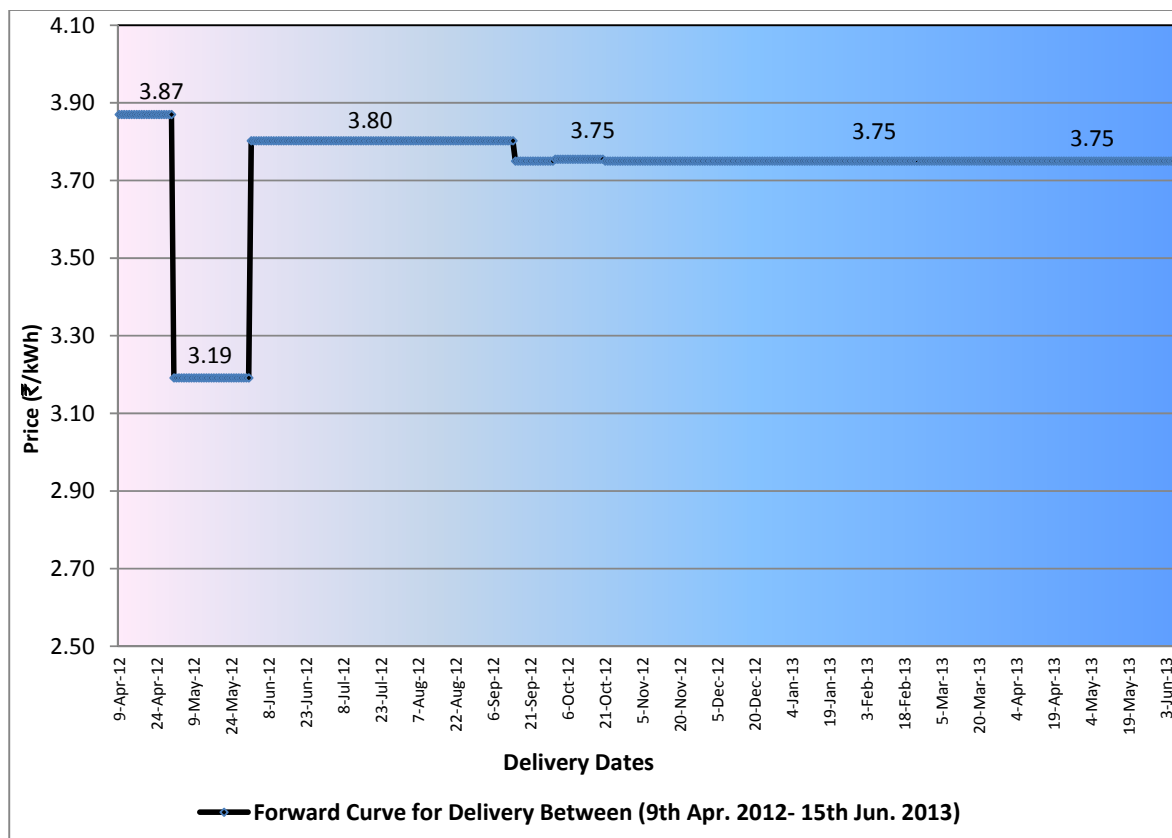
## Weekly Reporting of OTC Contracts: Monthly Analysis

Chart 3: Cumulative Volume Traded below and above ₹ 4/kWh during 27<sup>th</sup> February – 25<sup>th</sup> March 2012



## II. Forward Curve of Power Prices

**Chart 4: Forward Curve for 9<sup>th</sup> April 2012 - 15<sup>th</sup> 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 now for supply of power from 9<sup>th</sup> April 2012 - 15<sup>th</sup> June 2013, i.e. fourteen months ahead period of power supply. This forward curve is as on 9<sup>th</sup> April 2012 but based on 82 contract prices reported by trader's upto 25<sup>th</sup> March 2012.

### Observations

1. The forward curve for the next fourteen months period i.e. 9<sup>th</sup> April 2012 - 15<sup>th</sup> June 2013 generally followed a declining trend till May 2012 and then followed a flat trajectory till June 2013 after a rise in June 2012, though the number of contract were lesser in later months.
2. The Forward Curve has been formulated for a period of fourteen months based on reported contracts (for 9<sup>th</sup> April 2012 - 15<sup>th</sup> June 2013 period of power delivery). The

## Weekly Reporting of OTC Contracts: Monthly Analysis

price followed a declining trend during April 2012 to May 2012 during which price declined from ₹3.87 to ₹3.19/kWh. The prices rose in June 2012 to ₹3.80/kWh and thereafter remained flat in the range of ₹3.75 - ₹3.80/kWh till June 2013. The numbers of contracts reported for the initial months (April and May) were higher (19 to 32 contracts) than those of later months; April to June 2012 (1 or 2 contracts). It is in alignment with the general trend that liquidity is higher for nearer months compared to farther months.

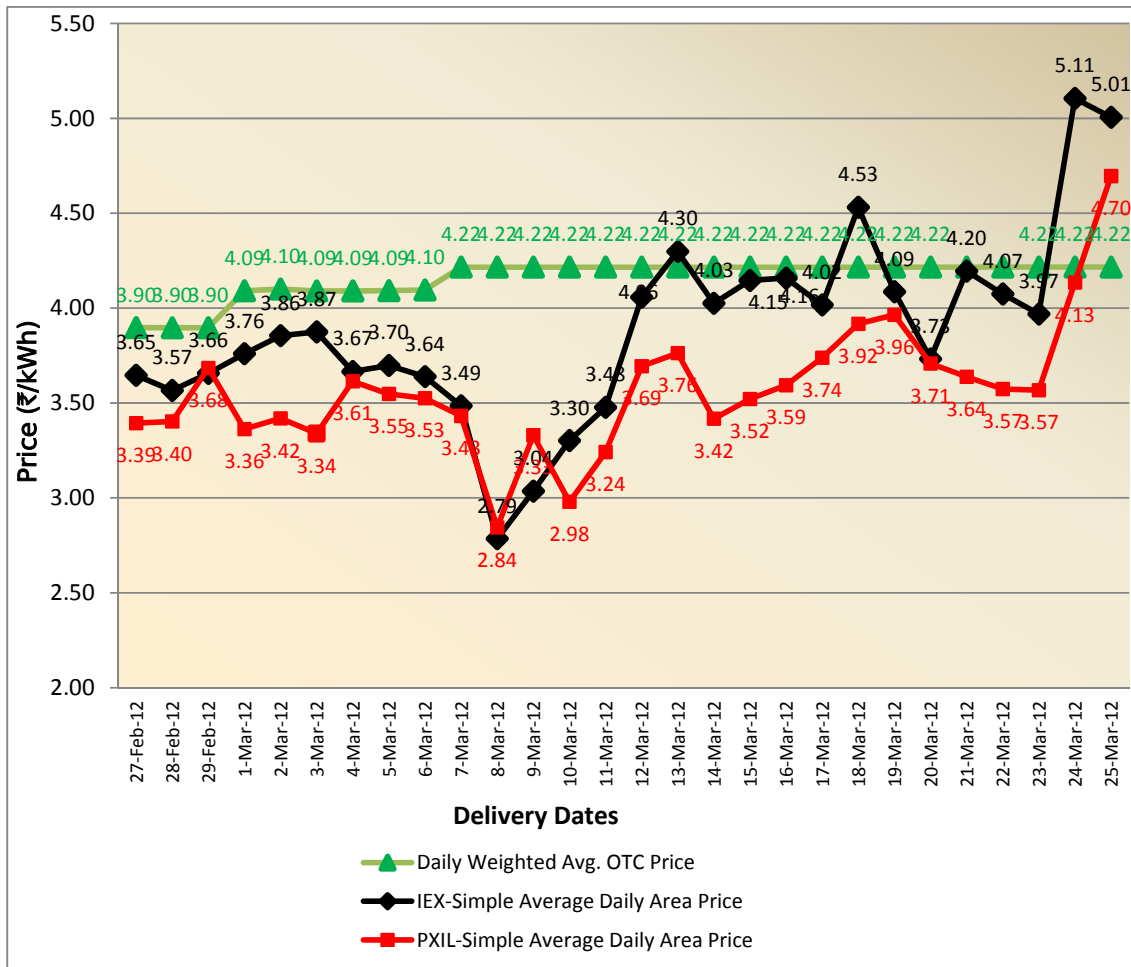


### III. Post-facto Comparison of Prices in OTC Contracts and Power Exchanges (on Power Delivery Dates)

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 March 2012



### Observations

1. The Post-Facto graph shows that generally power exchanges' prices remained lower than OTC-contracts' prices during the reported period except in the last week of the reported period. 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 February and March 2012

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

**Table 3: Number of Contracts Reported in February and March 2012<sup>Ψ</sup>**

	Feb-12 (four weeks)	Mar-12 (four weeks)
Above three months and upto 12 months	0	0
One month or above	25	26
One week or above	10	10
Less than a week	72	74
<b>Total</b>	<b>107</b>	<b>110</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 more in March (26 Contracts) than in February (25 Contracts).

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

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)**

	February 2012 (30th January - 26th February)		March 2012 (27th February - 25th March)	
	Maximum	Minimum	Maximum	Minimum
IEX	4.06 (2 <sup>nd</sup> February)	3.16 (20 <sup>th</sup> January)	5.11 (24 <sup>th</sup> March)	2.79 (8 <sup>th</sup> March)
PXIL	3.76 (6 <sup>th</sup> February)	3.01 (31 <sup>st</sup> January)	4.70 (25 <sup>th</sup> March)	2.84 (8 <sup>th</sup> March)
OTC Contracts	5.60 (5 <sup>th</sup> February)	2.96 (30 <sup>th</sup> Jan. - 26 <sup>th</sup> February)	5.49 (6 <sup>th</sup> March)	2.96(27 <sup>th</sup> February - 24 <sup>th</sup> March)

### 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. 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.
2. 83% of total volume has been contracted at above price of ₹ 4/kWh.
3. It is also seen that there have been a large number (74) of contracts for less than week period of delivery in the reported period.
4. The forward curve is generally flat from May 2012 to June 2012.

*Annexure-I*

**Table 4: List of Trading Licensees who have undertaken Contracts in the period 27<sup>th</sup> February - 25<sup>th</sup> March 2012\***

Sr.No.	Name of Licensee	27th Feb.-4th March	5th-11th March	12th -18th March	19th -25th March
1	PTC India Ltd.	Y(22)	Y(23)	Y(15)	Y(18)
2	NTPC Vidyut Vyapar Nigam Ltd.	Y(10)	Y(4)	Y(2)	Y(15)
3	National Energy Trading & Services Ltd.	NIL	Y(1)	NIL	NIL
Total No. of Contracts		32	28	17	33
Total for month for all traders		110			

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.
- V. The 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.