

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

[An analysis of all weekly reports (reporting period 30th July – 26th August 2012) received from licensed-traders for the month of August 2012]



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Central Electricity Regulatory Commission

Prepared on 9th September 2012

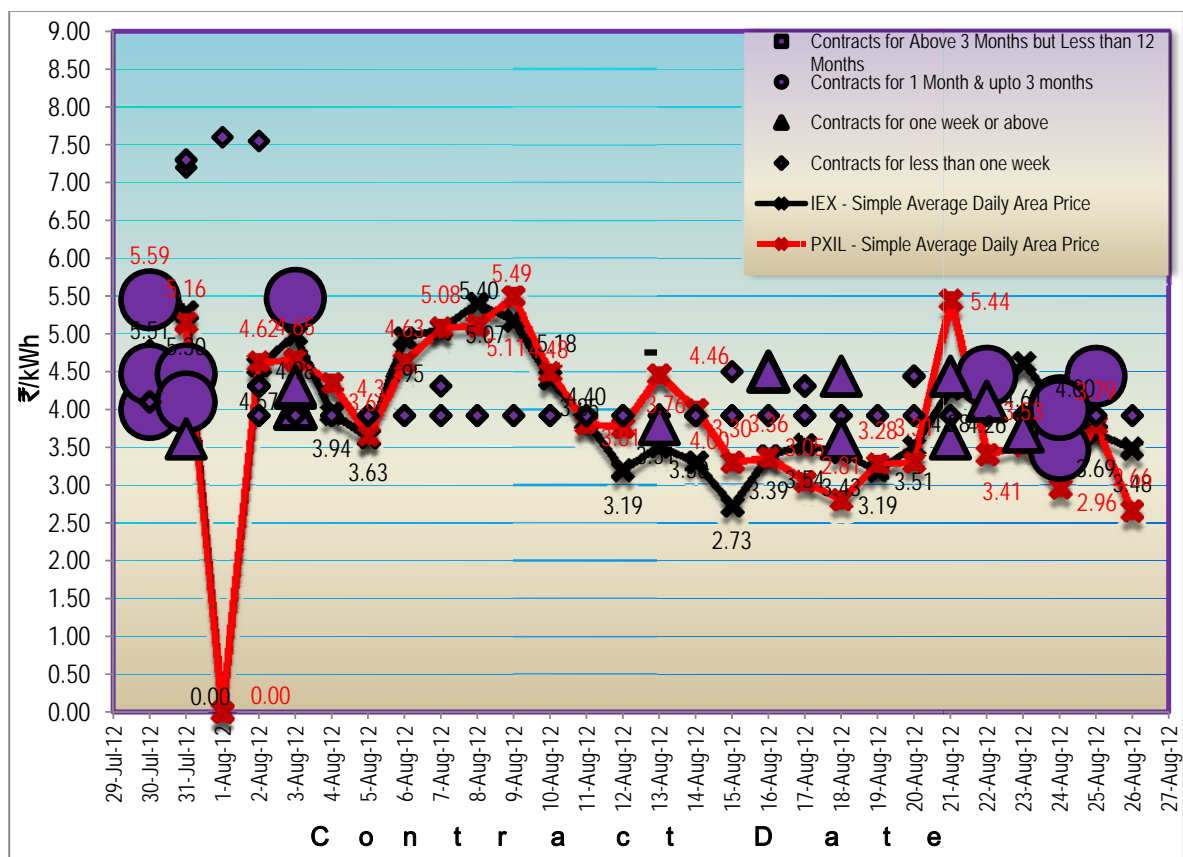
Snapshot for August 2012

- ✓ The reported short-term contract volume for the month of August 2012 (analysis of four weeks) was 1932.83 MUs whereas the same was 636.55 MUs for the month of July 2012 (analysis of four weeks). There is a 204% increase in reported contract-volume.
- ✓ 77% of total volume has been contracted at above price of ₹4/kWh as compared to 66% during July 2012.
- ✓ Total number of contracts (including Swap & Banking) in August (analysis of four weeks) was 115 by 6 traders whereas in July (analysis of four weeks) it was 120 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 30th July – 26th August 2012. As is seen from the scatter diagram, most of the contracts were concentrated in the first & last week of the reported period and the overall price was in a range of ₹3.46/kWh - ₹7.60/kWh. There were 75 contracts for less than a week and 19 contracts for a month & above period of power delivery. However there was no contract for above three months period of power delivery.

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



Note 1: 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.

Note 2: On account of major grid disturbances National Load Despatch Centre (NLDC) cancelled all collective transactions on power exchange from 1300 hrs-2400 hrs for delivery on 31st July, 2012 and No collective transactions on power exchange were scheduled for delivery on 1st August, 2012.

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		
30 th July - 5 th August	3.61	7.60	4.39	1031.51
6 th - 12 th August	3.80	4.31	3.89	111.14
13 th - 19 th August	3.61	4.50	4.12	100.53
20 th - 26 th August	3.46	4.44	4.10	357.12
Total				1600.30

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

(Includes Term Ahead Contracts at Power Exchanges)

Contract Date (2012)	30th July	31st July	1st August	2nd August	3rd August	4th August	5th August	6th August	7th August	8th August	9th August	10th August	11th August	12th August
IEX* (₹ / kWh)	5.51	5.30	0.00	4.57	4.98	3.94	3.63	4.95	5.07	5.40	5.18	4.40	3.85	3.19
PXIL* (₹ / kWh)	5.59	5.16	0.00	4.62	4.65	4.34	3.64	4.63	5.08	5.11	5.49	4.48	3.81	3.76
OTC Contracts** (₹/ kWh)	4.39							3.89						
	30th July - 5th August							6th - 12th August						

Contract Date (2012)	13th August	14th August	15th August	16th August	17th August	18th August	19th August	20th August	21st August	22nd August	23rd August	24th August	25th August	26th August
IEX* (₹ / kWh)	3.51	3.30	2.73	3.39	3.54	3.43	3.19	3.51	4.28	4.26	4.61	4.00	3.69	3.48
PXIL* (₹ / kWh)	4.46	4.00	3.30	3.36	3.05	2.81	3.28	3.31	5.44	3.41	3.53	2.96	3.79	2.66
OTC Contracts** (₹/ kWh)	4.12							4.10						
	13th - 19th August							20th - 26th August						

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

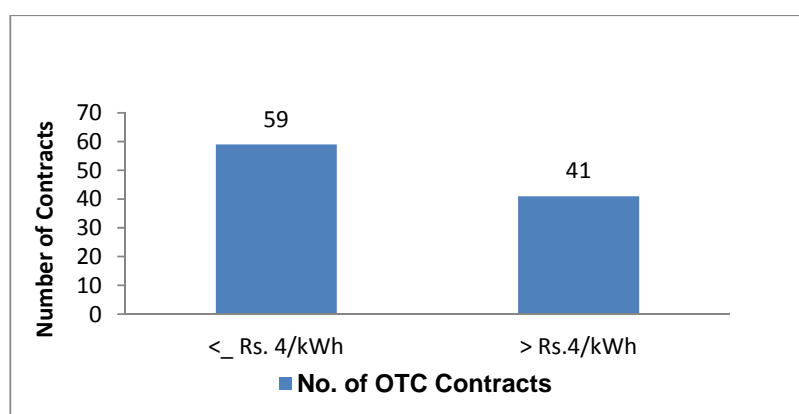
*: Simple Average Area Prices for the Day for all the Bid Areas

** : Weekly Weighted Average Prices for OTC- Contracts

Observations

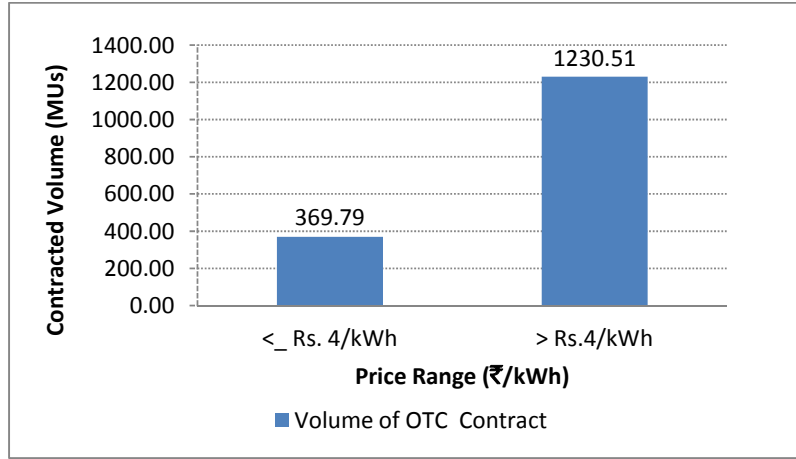
1. It is observed that IEX and PXIL prices were generally below the average OTC contract prices except in the 2nd week of reported period where some OTC - contracts were signed at a rate lower than PX prices. The overall OTC-price range was ₹3.46-₹7.60/kWh. It may be noted that Power Exchange is a day 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. In light of the grid disturbance and criticism received by Northern states on UI overdrawal, it is observed that some northern states (Haryana and J& K) have started to move from Unscheduled market (UI) to Scheduled market (OTC) by signing numerous one day's OTC - contract to reduce UI overdrawal.
3. The minimum price in the exchanges during reported period was ₹2.66/kWh (PXIL, 26th August) while that in the OTC market was ₹3.46/kWh (24th August). Maximum price in Day-Ahead market at the exchange reached ₹5.59/kWh (PXIL, 30th July) and in OTC Market it was ₹7.60/kWh (1st August) which was a 'Round-the-Clock' power contract.
4. As far as the number of contracts is concerned, 41 out of totals 100* contracts were entered at above ₹4/kWh. There were a total 115 contracts including swap & banking during the reported period. However, the cumulative volume traded above ₹4/kWh was 1230.51* MUs which is 77% of total OTC contracts for the reported period 30th July – 26th August 2012.

Chart 2: Frequency Distribution of Number of OTC Contracts



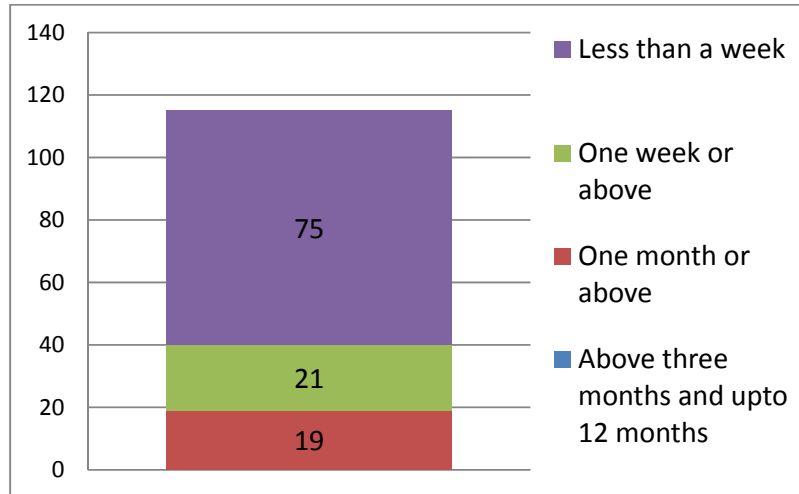
* Excluding swap/banking contracts since they do not have any sale price.

Chart 3: Cumulative Volume Traded below and above ₹4/kWh 30th July – 26th August 2012



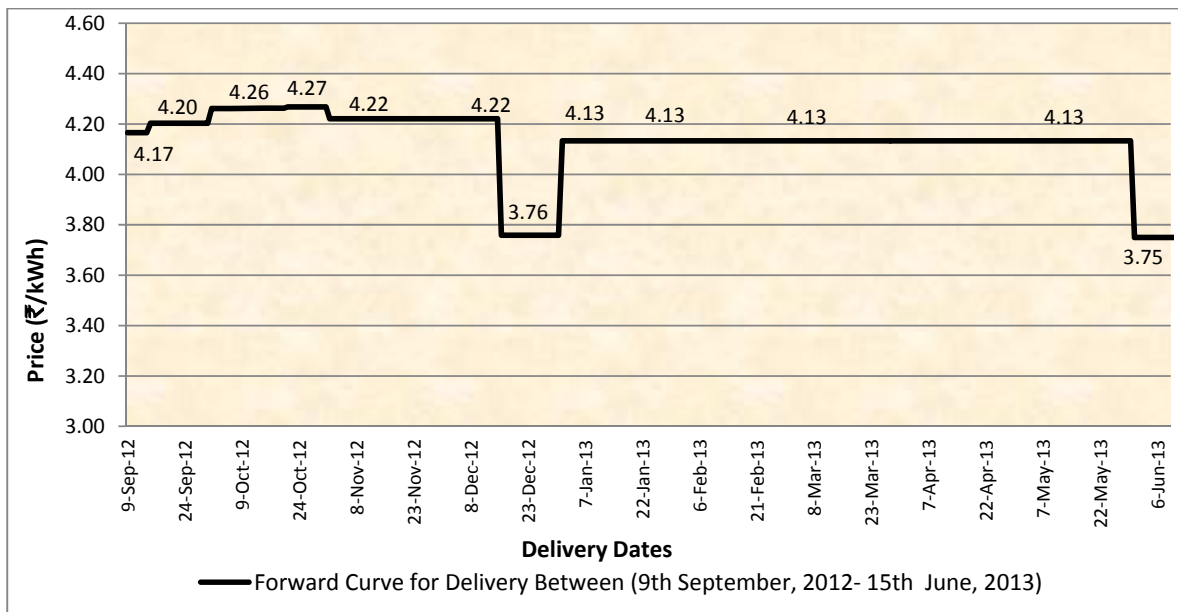
Following chart shows the number of contracts reported during August 2012, categorized according to the period of power supply.

Chart 4: Number of Contracts Reported in August 2012



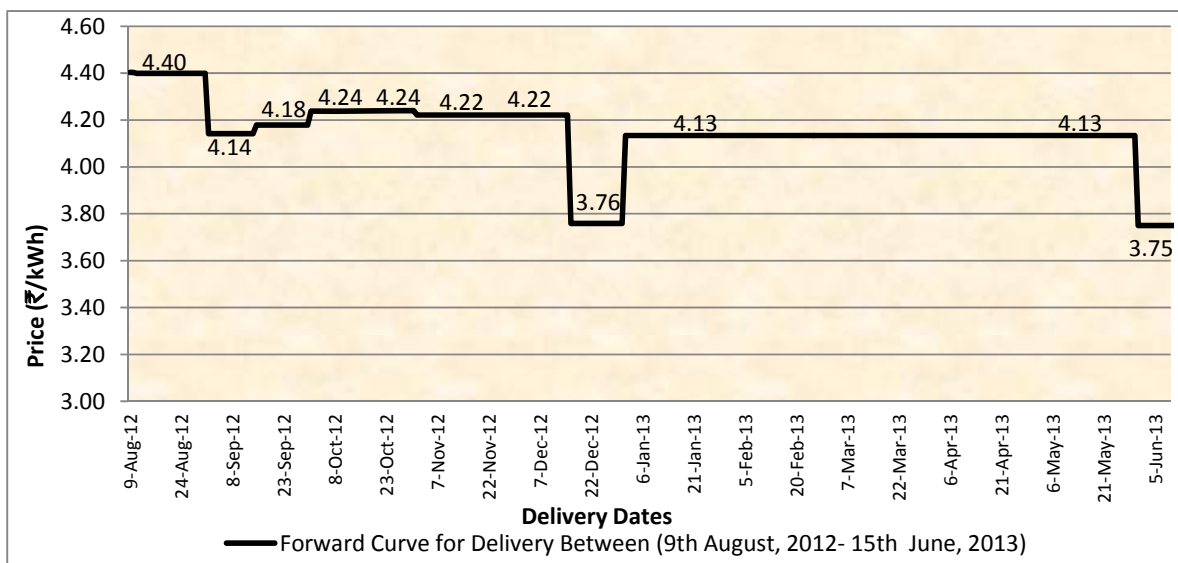
II. Forward Curve of Power Prices

**Chart 5: Forward Curve for the period September 2012 - June 2013
as on 9th September 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 9th September 2012 - 15th June 2013, i.e. nine months ahead period of power supply. This forward curve is as on 9th September 2012 but based on 100 contract prices reported by trader's upto 26th August 2012.

Chart 5.1: Forward Curve for the period August 2012 - June 2013 as on 9th August 2012



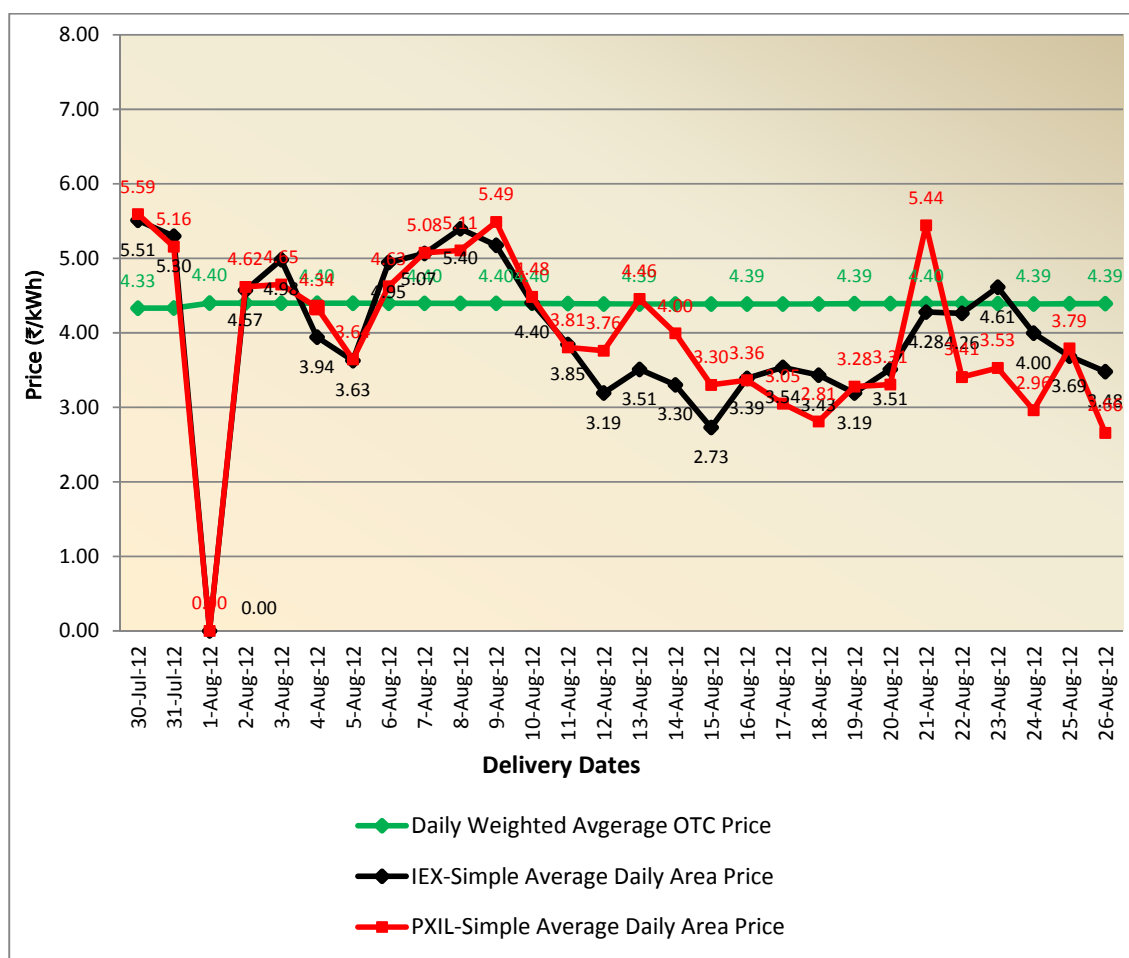
Observations

1. The Forward Curve for the next nine months period i.e. September 2012 - June 2013 as on 9th September 2012 is generally flat in the range of ₹3.75 - ₹4.27/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 9th September 2012 has been formulated for a period of nine months based on reported contracts (for 9th August 2012 - 15th June 2013 period of power delivery). The numbers of contracts reported for the initial months (September and October 2012) were higher (17 and 13 contracts respectively) than those of later months i.e. November 2012 to June 2013 (3 and 1 contracts respectively). 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 5 & Chart 5.1) gives us a picture of expected delivery price for August 2012 - June 2013 as on 9th August (Chart 5.1) and as on 9th September (Chart 5). It is possible that the prices for the same delivery period are different in the forward curves constructed on 9th August and 9th September since the prices of contracts signed could be different at different points in time. For instance prices for expected delivery for November 2012 have increased from ₹4.24/kWh (in July) to ₹4.27/kWh (in August) though marginally.

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 August 2012



Note: Note 2: On account of major grid disturbances National Load Despatch Centre (NLDC) cancelled all collective transactions on power exchange from 1300 hrs-2400 hrs for delivery on 31st July, 2012 and No collective transactions on power exchange were scheduled for delivery on 1st August, 2012.

Observations

1. The prices in power exchanges have fluctuated over a wide range (₹ 2.66 to ₹5.59/ kWh) over the month. However the OTC - contracts delivery prices have fluctuated over a narrower range of ₹4.33 to ₹4.40/ kWh during the month. 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.
2. Since the average OTC prices were lower in the 2nd week of the month, one can conclude that the buyer would have been better-off had they procured power from the OTC-Market in the 2nd week of the reported period.

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 IEX and PXIL prices were generally below the average OTC contract prices except in the 2nd week of reported period. There were some OTC-contracts signed at higher prices in the 1st week, however the overall OTC- price range was ₹3.46-₹7.60/kWh.
2. In light of the grid disturbance and criticism received by Northern states on UI overdrawal, it is observed that some northern states (Haryana and J& K) have started to move from Unscheduled market (UI) to Scheduled (OTC) market by signing numerous one day's OTC-contract to reduce UI overdrawal.

Annexure-I

**Table 5: List of Trading Licensees who have undertaken Contracts in
the period 30th July – 26th August 2012***

Sr.No.	Name of Licensee	30th July - 5th August	6th - 12th August	13th - 19th August	20th -26th August
1	PTC India Ltd.	Y(19)	Y(14)	Y(18)	Y(13)
2	NTPC Vidyut Vyapar Nigam Ltd.	Y(10)	Y(2)	Y(7)	Y(15)
3	GMR Energy Trading Ltd.	Y(8)	Y(2)	NIL	NIL
4	Adani Enterprises Ltd	NIL	Y(1)	NIL	Y(1)
5	National Energy Trading & Services Ltd	NIL	NIL	NIL	Y(1)
6	JSW Power Trading Company Ltd	Y(4)	NR	NIL	NIL
Total No. of Contracts		41	19	25	30
Total for month for all traders		115			


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.