

**MINUTES OF THE 13<sup>TH</sup> MEETING OF THE CENTRAL ADVISORY  
COMMITTEE (CAC) HELD ON 16<sup>TH</sup> JUNE , 2010  
AT NEW DELHI**

**VENUE : “AMALTAS” HALL, CONVENTION CENTRE  
INDIA HABITAT CENTRE, LODHI ROAD  
NEW DELHI – 110 003.**

The meeting was chaired by Dr. Pramod Deo, Chairperson, CERC. A list of participants is attached at ***Annexure-I***.

2. In his opening remarks, Chairperson, CERC referred to the main aspects of the short-term electricity markets in India and said that the provisions of the Electricity Act, 2003 required CERC to ensure reasonable prices of electricity in the period of shortages and at the same time to develop the electricity markets. He requested the members of the Committee to give their suggestions/views on the issues raised in the staff consultation paper circulated prior to the meeting.

3. Secretary, CERC made a presentation outlining the findings of the Market Monitoring Cell of the Commission and summarizing the issues for deliberations. A copy of the presentation is attached at ***Annexure-II***. Subsequent to the presentation by staff of CERC, the representatives of PXIL also made a small presentation suggesting allocation of larger transmission capacities to power exchanges and also introduction of permitting term ahead contracts of longer duration on the power exchanges.

4. Thereafter the members of the Committee were requested to express their views/suggestions. Briefly, the following views were expressed:

- i) Shri R.V. Shahi said that imposition of caps might affect the investment climate and therefore there was a need to watch the situation further before any intervention. He said that feasibility of regulatory interventions, if required, in the nature of circuit breakers on stock exchanges may be explored. He also suggested that CERC should come out with a roadmap for bringing term ahead contracts of different duration in the markets. He was of the view that electricity traders should focus on facilitating capacity addition by entering into contracts of more than one year period. He also supported the suggestion for allocating larger transmission capacities to power exchanges.
- ii) The representative of Ministry of Railways supported the suggestions for interventions in electricity markets. He also requested for reducing the additional surcharge on UI. He agreed that the Railways should set up more captive power plants and requested that the Regulatory Commissions should facilitate open access arrangements, for the same.

- iii) Shri R.K. Madan of Adani Power said that price caps should not be imposed which might affect the competitive rates being discovered in tariff based bidding. This is so because the developers would expect lower income from merchant sales. He said that prices in OTC market were higher because of extra liabilities like earnest money and LC charges.
- iv) Shri Satish Jindal said that if price cap is to be imposed at all, there should also be a floor price.
- v) Ms. Pamposh Bhat suggested that market interventions could be in the form of tradable certificates on the pattern of CDM mechanism.
- vi) Shri Amulya Charan of Tata Power Trading opposed the imposition of any price caps because prices have started showing a declining trend and any intervention might affect new investment. He said that the portfolio sellers were adding to the volumes in the markets and therefore there should not be undue concern on their profits.
- vii) The representative of Prayas said that there was a case for imposition of price caps because shortages were likely to continue. He said that new investments would not be affected by price caps because there would be adequate profits even within the proposed price cap of Rs.5 per unit.

He allayed the apprehensions about price caps affecting the investment sentiments as the investors would look at the 92% of the market which was based on long term contracts.

- viii) He added that high market prices were resulting in load shedding by seller discoms and it was also incentivizing breach of many existing contracts. He said that normal economic forces were not able to work because there are many fuel related policy issues hindering the new power projects. Distribution companies were also not acting responsively in power procurement because of 'agency problem'. He was also of the view that short-term market size should not be allowed to increase beyond a reasonable size. He was of the view that the OTC market being non-transparent needed to be capped. Prof. S.C. Srivastava of IIT Kanpur said that the comparison with the international prices should take into account peculiar situation of shortages in our country. He was of the view that price caps if imposed should be such that investment was not affected. He supported the price caps if required to prevent exploitation of shortages situation and suggested that cap level should be according to marginal cost of the costliest power.

- ix) Shri Jayant Deo, CEO, IEX was not in favour of price caps. He said that participation of open access consumers was moderating prices in the power exchanges. There was a need of introducing longer term contracts also. He also suggested that retail tariff structure should be such that open access consumers were charged the marginal costs of the utility.
- x) Shri Sushil Maroo of Jindal Power said that their average selling price in year 2009-10 was Rs.5.26 per unit and it had further come down to less than Rs.5/- in the last six months. He was opposed to any price caps because the expected future market trend indicated the declining prices. He suggested promoting open access for increasing depth of markets and also interventions by the SERCs on procurement of power by the distribution licensees. He explained that the prices in power exchanges were lower because the day ahead transactions were in the nature of desperate sale and last minute surpluses from captive power plants. He said that it was rational that day ahead prices were lower than the prices in OTC contracts of less than a year period. He also suggested that instead of taking a snapshot of electricity markets in international markets, we should examine their development trajectories.

- xi) Shri Shashi Shekhar, Director, PTC said that OTC prices were higher because it related to a firm contracts and discoms would prefer such product because no meaningful supply planning can be done on the basis of day ahead contracts. Referring to the National Electricity Policy and the new Hydro Policy, he said that CERC should encourage larger investments in merchant capacities. He was opposed to discrimination between OTC markets and power exchanges. He emphasized that OTC markets were not opaque as large number of sellers were participating in the bids floated by the distribution utility recently. He was of the view that it would be to premature to draw conclusion regarding prices in power exchanges. He expressed apprehension that price caps might increase the bids in long term competitive bidding. On the issue of portfolio sellers, he said that every state had discretion to utilize its resources in the best possible manner for the development of the state.
- xii) Shri Pradeep S. Mehta of CUTS suggested that the concerns regarding abnormal profits should be handled through appropriate taxation instead of market interventions. SERCs should insist on ploughing back of profits of portfolio sellers to rural electrification in the state. He also suggested that a long term policy paper be brought out by CERC on

possible market interventions. He supported the suggestions of caps on volumes and also need based price caps in the form of circuit breakers. He suggested for involving SERCs in the matter and requested for further monitoring the situation before any actual intervention.

- xiii) Shri Bhaskar U. Mete supported the price caps on OTC markets and said that caps should be for minimum possible period. Such caps may be required during the periods of high demand in a year.
- xiv) Shri S.K. Soonee, CEO, POSOCO said that very large short-term purchases by some utilities were causing the problems of transmission congestion and aggressive bidding. Price caps should trigger when the short-term volumes were increasing abnormally. He suggested an outer limit of 1-2% for UI volumes and about 9-10% of other short-term transactions. He emphasized on the need of imposing volume related caps and said that the price cap should apply to all areas in the country. He added that the new UI regulations were showing good results. He suggested introducing evening markets in power exchanges to utilize available sell bids and transmission corridors. Responding to a query, he added that the Commission had recently approved the detailed procedure for computing the

transmission transfer capability and there would be no more unbridled discretion with the system operator in the matter.

- xv) Shri K. Ramanathan, TERI said that situation was not imminent for interventions and the Commission should keep watch on price and volumes and formulate guidelines for interventions in the markets. To address the problem of profiteering by portfolio sellers, he suggested stricter enforcement of universal service obligation. He was of the view that the difference in prices between OTC markets and power exchanges was not so large so as to warrant discrimination in the matter of price caps.
- xvi) The representative of the Ministry of Consumer Affairs said that price caps should be used to the minimum extent possible. He was not in favour of power exchanges introducing term ahead contracts as these were in the nature of forward contracts.
- xvii) Shri Shirish Deshpande of Mumbai Grahak Panchayat strongly supported the regulatory interventions in the markets to protect the interests of the consumer as the markets were not perfect. While supporting the case of differential price caps, he suggested exploring price caps on power exchanges also. He was of the view that CERC could impose caps only for short periods and see the market



behaviour. He said that there was no need to worry about profits by portfolio sellers as these were the entities of State Governments. He suggested the use of provisions of section 23 of the Act to ensure equitable distribution of electricity.

xviii) Shri R.N. Nayak of PGCIL said that the size of short-term market should not be allowed to go beyond 10% if we have to avoid serious problems of congestion.

xix) Shri V.S. Verma, Member, CERC expressed his personal views and supported the case of market interventions in order to keep consumer tariffs at reasonable level. He said that it would be wrong to blame a specific state for not adding generation capacity because so far we had followed a model of pan India generation planning. He said that major investment was coming through competitive bidding for ultra mega power projects.

5. Concluding the discussions, Chairperson, CERC said that well functioning electricity markets were necessary for assuring payment security to the investors. There was a need to appreciate the circumstances prevailing at state level and the difficulties being faced by the SERCs in hiking tariffs or in imposing margins on intra-state trading, or for that matter in enforcing the standards of performance. He said that there were expectations from CERC to

intervene in the markets through price caps. He added that the success of any intervention would depend to the extent the Commission was able to enforce its UI regulations which were being challenged in many High Courts. Referring to the suggestions for price caps on the basis of short-term volumes, he said that many state distribution companies were being compelled by the State Governments to procure power on occasional basis and the government systems were not encouraging procurement on long term basis. He supported the suggestion that Regulatory Commissions should exercise powers under section 23 of the Act for ensuring equitable distribution of electricity.

The meeting ended with a vote of thanks to the Chair.

\*\*\*\*

**LIST OF PARTICIPANTS ATTENDED THE THIRTEENTH**  
**MEETING OF**  
**CENTRAL ADVISORY COMMITTEE (CAC)**  
  
**HELD AT INDIA HABITAT CENTRE, NEW DELHI**  
**ON 16<sup>TH</sup> JUNE, 2010**

<b>S. No.</b>	<b>NAME</b>	
01.	Dr. Pramod Deo Ex-Officio, Chairperson, CAC	Chairperson, CERC
02.	Shri S. Jayaraman Ex-Officio Member, CAC	Member, CERC
03.	Shri V.S. Verma Ex-Officio Member, CAC	Member, CERC
04.	Shri M. Deena Dalayan ExOfficio Member, CAC	Member, CERC
05.	Shri R.V. Shahi Secretary (Retd.)	Ministry of Power
06.	Shri Pradeep S. Mehta Secretary General	Consumer Unity & Trust Society (CUTS)
07.	Ms. Pamposh Bhat Chairperson	Jwala (NGO dealing in CDM & Renewables)
08.	Prof. S.C. Srivastav	Indian Institute of Technology (IIT)
09.	Shri R.K. Madan CEO (Power)	Adani Enterprises Limited
10.	Shri Satish Jindal Senior Vice-President	JSW Power Trading Company Limited
11.	Shri Bhasker U. Mete President, GEA	Maharashtra State Electricity Power Gen. Corpn. Limited
12.	Adv. Shirish V. Deshpande Chairman	Mumbai Grahak Panchayat

13.	Shri V.K. Dutt Additional Member (Electrical)	Representative of Railway Board
14.	Shri Brij Mohan Director	Representative of Dept. of Consumer Affairs
15.	Shri R.N. Nayak Director (Oprns.)	Representative of POWERGRID Limited
16.	Shri M.S. Babu Executive Director (Comml.)	Representative of NHPC Limited
17.	Shri Sabyasachi Dasmohapatra Director (Energy)	Representative of Confederation of Indian Industry (CII)
18.	Shri Shashi Shekhar Director	Representative of PTC India Limited
19.	Shri K. Ramanathan Distinguish Fellow	Representative of The Energy & Resources Institute (TERI)
20.	Shri Sushil Maroo Managing Director	Representative of Jindal Power Limited
21.	Shri Amulya Charan Managing Director	Representative of Tata Power Company Ltd.
22.	Shri Vijay Gulati AGM, NVVN	Representative of NTPC
23.	Shri Shantanu Dixit	Representative of Prayas (Energy Group), Pune
24.	Shri V.K. Malhotra Chief Engineer	Representative of Punjab State Power Corporation Limited (PSPCL)
25.	Shri Alok Kumar Secretary	CERC
	<b>SPECIAL INVITEES</b>	
26.	Shri S.K. Soonee CEO	POSOCO
27.	Shri Jayant Deo CEO	Indian Energy Exchange Limited (IEX)
28.	Shri S. Ganguly Vice-President	Power Exchange India Limited (PXIL)

# Framework for Intervention in Short Term Power Market



Central Advisory Committee Meeting  
16 June 2010



## Presentation Outline

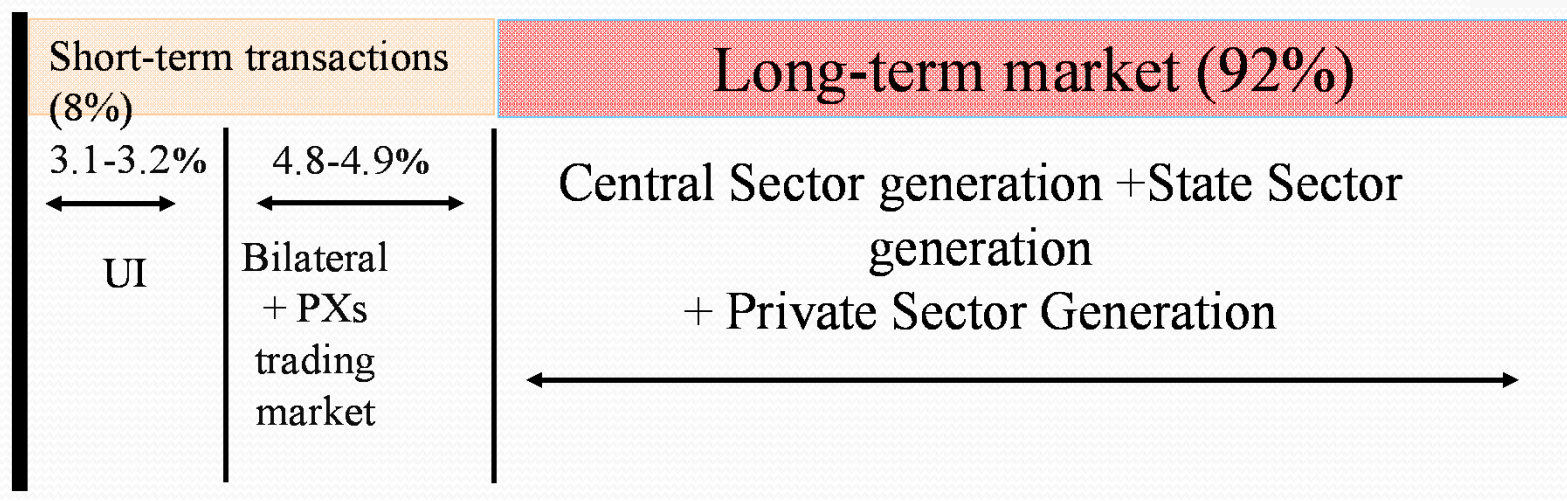
- Market Data Analysis and Findings
- Reasons for High prices
- Impact of High price and Concerns
- Legal Position
- Market Intervention Principles
- Price Cap Levels and Timing
- Implementation issues
- Alternatives suggested
- Issues for discussion



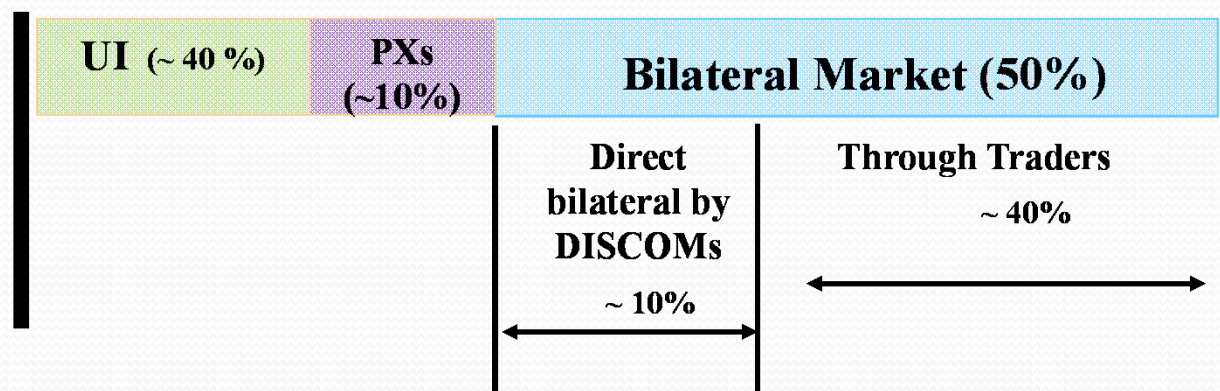
# Market Data Analysis



# Market Breakup



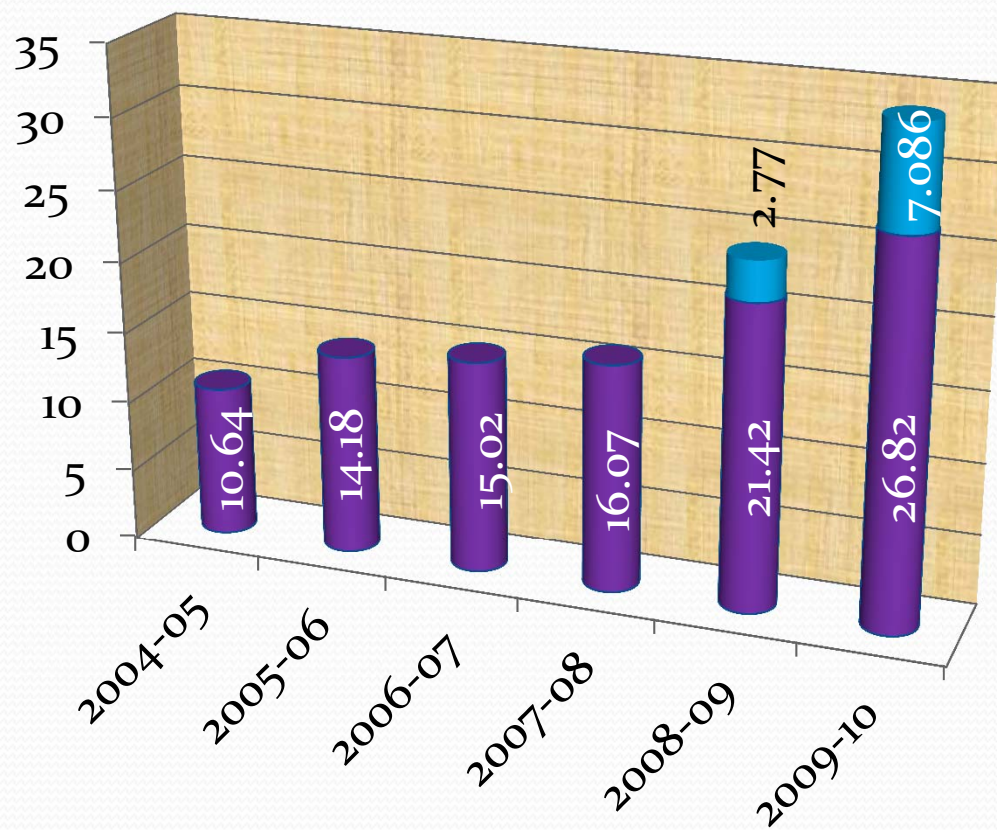
## Short-term transactions



DISCOMS procure about 5 % of their power requirement from Market at Market Determined Price



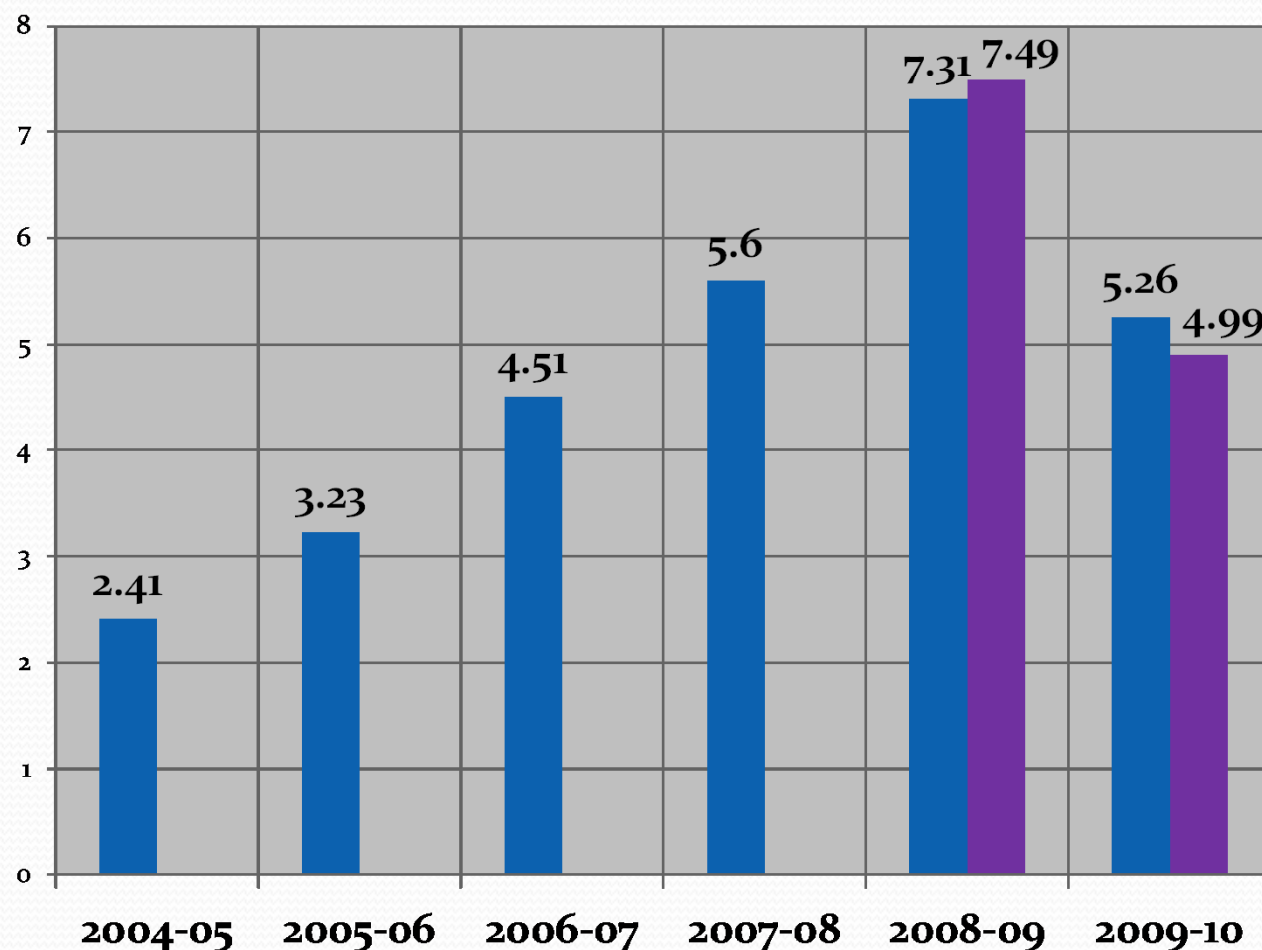
## Volume of Transactions through Short Term Market in Billion kWh (units)



- Volume of Transaction through Power Exchanges in Billion Units
- Volume of transactions through traders in Billion Units

Short term volumes are increasing

## Yearly Average Price in OTC (through traders) and Power Exchange



- Traders: Weighted Average Price (Rs/kWh)
- Power Exchanges: Weighted Average Price (Rs/kWh)

Short term prices showing downward trend



## Monthly weighted average price in short term market 2009 -10

Month	Weighted Average Price of Power Transacted Through Traders (Rs/kWh)	Weighted Average Price of Power Transacted Through Power Exchanges (Rs/kWh)
April	7.21	10.11
May	6.82	6.94
June	5.05	7.60
July	4.75	4.81
August	4.64	7.23
September	4.73	4.03
October	5.07	4.80
November	5.33	3.20
December	4.99	3.20
January	5.26	3.44
February	5.05	3.53
March	4.94	5.68
Weighted Average for 2009- 10	5.26	4.99
Weighted Average Price for past 10 months, excluding pre General Election months	4.96	4.56

Power Exchange price lower than OTC market prices since September 09

International Electricity Prices					
Wholesale Exchange	Country	Units	Delivery	Base Price	Peak Price
Nordpool	Norway	Euro/ MWH	May-10	49	51
		Rs/ MWH		2806.72	2921.28
APX	UK	Pound/ MWH	May-10	54	61
		Rs/ MWH		3600.72	4067.48
EEX	Germany	Euro/ MWH	May-10	50	54
		Rs/ MWH		2864	3093.12
EEX	France	Euro/ MWH	May-10	50	57
		Rs/ MWH		2864	3264.96
PJM	US East Coast	\$/MWH	May-10	38	44
		Rs/ MWH		1715.32	1986.16
Market Monitoring Report	India		Avg of	Power Exchange	Electricity Trader
		Rs/ MWH	2009	5730	6410

Short Term power prices in India higher than other markets , in PPP terms prices will be even higher

## Short Term Market Size

Year	Transactions through Traders		Transactions through Power Exchanges		Size of Market through Traders (Rs. Crore)	Size of Market for Exchanges (Rs. Crore)	Total Size of Short Term Market Excluding UI, Bilateral Through DISCOMs, and Input from Bhutan (Rs. Crore)
	Volume in Billion Units*	Weighted Average Price (Rs/kWh)	Volume in Billion Units	Weighted Average Price (Rs/kWh)			
2004-05	10.64	2.41	-	-	2564		2564
2005-06	14.18	3.23	-	-	4580		4580
2006-07	15.02	4.51	-	-	6774		6774
2007-08	16.07	5.6	-	-	8999		8999
2008-09	21.42	7.31	2.77	7.49	15658	2075	17733
2009-10	26.82	5.26	7.086	4.99	14107	3536	17643

\* = *Excludes imports from Bhutan and banking volumes*

Short Term market size is large ,although in % term it looks small (4%)



## Short Term Power Procurement Cost as % of total generation or purchase

Year	Total Cost of Power Purchase and Generation (Rs. Crore)	Cost of Power Transacted through Traders (Rs. Crore)	Cost of Power Transacted through Power Exchanges (Rs. Crore)	Total Cost of Power transacted through Short Term market**	Short Term Power Cost as a % of Total Cost of Power Purchase and Generation
2005-06*	161404	4580		4580	3 %
2006-07*	180200	6774		6774	4 %
2007-08*	204136	8999		8999	4 %
2008-09#	229571	15658	2075	17733	8 %
2009-10#	258176	14107	3536	17643	6.83 %

*\*=Actual Costs; # = Assumed 12% increase over previous year; \*\* = Excludes UI, Bilateral Between DISCOMS, and imports from Bhutan (actual cost data from PFC Report on Performance of State Power Utilities, June 2009)*

Short Term Power Procurement cost has increased over years



## Top Ten Buyers of Short Term Power from OTC market in 2009

State/DISCOM	Volume Bought in Million Units, excluding Banking Volumes	Percentage of Total Volume transacted Through Trading Licensees (excluding Banking)	Weighted Average Cost of Procurement Rs/kWh
Haryana Power Procurement Centre (HPPC), Haryana	3059	13.20%	5.95
Rajasthan Power Procurement Centre (RPPC), Rajasthan	2629	11.40%	6.69
Punjab State Electricity Board (PSEB), Punjab	2440	10.60%	4.78
Jaipur Vidyut Vitaran Nigam Limited (JVVNL), Rajasthan	2363	10.20%	6.79
Andhra Pradesh Power Coordination Committee (APPCC), Andhra Pradesh	1932	8.40%	6.88
Maharashtra State Electricity Distribution Company Limited (MSEDCL), Maharashtra	1411	6.10%	6.36
Tamil Nadu Electricity Board (TNEB), Tamil Nadu	1360	5.90%	7.02
Reliance Infrastructure Limited (RInfra), Maharashtra	1229	5.30%	7.09
Himachal Pradesh State Electricity Board (HPSEB), Himachal Pradesh	904	3.90%	4.33
BESCOM, Karnataka	856	3.70%	8.05

Buying States have been paying high purchase price

Total= 78.7%



## Sale Volumes and Prices of Top Ten Sellers Through Traders in 2009

S.No.	Seller	Volume Sold in million kWh, excluding banking	Weighted Average Sale Price (Rs/kWh)	Nature of Seller/ Fuel Type of Generator
1	Jindal Power Limited (Chhattisgarh)	2987	7.18	Domestic Coal
2	Govt. of Himachal Pradesh	2845	5.91	Hydro
3	JSW Energy Limited, (Karnataka)	2328	5.76	Domestic Coal
4	State Power Development Corporation of J&K	1160	4.65	Hydro
5	Nav Bharat Ventures Limited, (AP and Orissa)	1151	6.46	Domestic Coal
6	West Bengal State DISCOM	988	6.06	Portfolio Seller
7	Chhattisgarh State DISCOM	844	8.00	Portfolio Seller
8	Chhattisgarh State Trading Company	653	6.40	Portfolio Seller
9	Gujarat Urja Vikas Nigam Limited (GUVNL)	609	7.14	Portfolio Seller
10	Bharat Aluminum Company Limited (Chhattisgarh)	542	6.26	Domestic Coal
	TOTAL			

Abnormal Profits made by sellers without undertaking much risk



## Findings

- Weighted Average power price in 2009 less than 2008

	2008	2009
Trader	7.31	5.26
PX	7.49	4.99

- Although prices are showing a downward trend, prices are still on higher side
  - Internationally prices in the range of Rs 2.50 - 3.50 / kwh
- Average price through Traders higher than price in Power Exchange in 2009
  - Contrary to normal perception
    - Desperation to procure in day ahead power exchange market higher than procurement weeks ahead through traders
  - Exchange provides equal bargaining power as is anonymous platform unlike negotiated market where parties conditions are well known
  - Is worrisome as Traders market is 3 times PX market

## Impact of high prices on Buyer Discoms

- At aggregate national level, DISCOMs procure ~5% of requirement from short-term market
  - Translates into 7 to 8 % of total cost
- For certain DISCOMS volume of power purchase from short term market much higher
  - JVVNL ~ 25-30%; Haryana DISCOMs ~ 10-12%; Reliance Infra ~ 13-15%
- Higher consumer tariffs wherever higher costs could be passed on
- Even where higher costs could be passed on
  - Liquidity crunch ( fixed tariffs on consumer side, but rising procurement costs and as truing up is annual exercise)
- Higher DISCOM losses where these costs could not entirely be passed on to consumers
- Higher load shedding where DISCOMS could not afford higher prices



## Impact of high prices on Sellers

- Portfolio sellers /generators made more than normal level of profits
- Considering 2008-09 weighted average price for OTC transaction(Rs. 7.31/kWh) as base:
  - For entire OTC trade, average generation/procurement price of Rs. 3 to 3.3 per unit, profit for 2008-09 around Rs. 10,755 to Rs. 11, 559 crore
  - For a portfolio seller, average power procurement cost of Rs 2.76, profit = Rs. 4.55 to 4.73 / unit ;
  - States selling free hydro power assuming economic valuation of resources at Re.1/- per unit ,profit = Rs.6.31 to 6.49 /unit
  - New imported coal based power plant with cost of generation of Rs.3.50 per unit, profit = Rs.3.81 to 3.99 / unit



## Major Concerns

- High price burdening buying state distribution utilities
  - Financial health of discom further deteriorating
  - Share of short term purchase in portfolio low but rising
- Profiteering by some market participants
  - Portfolio Sellers - Certain State Discoms, State Trading Companies
    - Have low generation cost or procurement cost
    - Making abnormal profit
    - May be used to keep retail tariff low in state
    - Not investing in new capacity addition
  - Private Gencos
    - Mostly ploughing back to increase generation capacity
- Perverse incentive for states to stymie open access to embedded generators

It is alleged that there is a regulatory capture and Commission has turned Nelsons Eye





## Role of CERC

- SERC concerned with consumer in their state only and not looking beyond respective states
- CERC cannot intervene in intra state markets
- Harmonious development of national / Pan India market responsibility of CERC
- CERC can intervene in Interstate markets
  - Impose Minimum and Maximum tariff in shortage for a temporary period
- CERC imposed price cap in Sep 2009 when prices rose significantly
- Power to intervene in interstate markets upheld by APTEL

## Legal Provision

- **Proviso to Sec 62**

**(Determination of tariff):** - (1) *The Appropriate Commission shall determine the tariff in accordance with the provisions of this Act for –*

*(a) supply of electricity by a generating company to a distribution licensee:*

*Provided that the Appropriate Commission may, in case of shortage of supply of electricity, fix the minimum and maximum ceiling of tariff for sale or purchase of electricity in pursuance of an agreement, entered into between a generating company and a licensee or between licensees, for a period not exceeding one year to ensure reasonable prices of electricity; ”*

- **Sec 66** – “ *The Appropriate Commission shall endeavour to promote the development of a market (including trading) in power in such manner as maybe specified and shall be guided by the National Electricity Policy referred to in section 3 in this regard.*”

Proviso empowers Commission to regulate tariffs by fixing the maximum and minimum tariff of electricity in case of shortages of supply of electricity to ensure reasonable price  
Commission mandated to develop competitive power markets including trading



## Market Intervention Framework

- Framework for intervention versus Ad-hoc (as and when felt necessary) intervention
- Framework provides
  - Regulatory certainty and predictability
  - Investor confidence
  - On the other hand, it would provide benchmark for prices and may affect the operation of the “market” in true sense
- Could define basic principles but no figures (*e.g. Laying down guidelines on when the price cap becomes warranted/gets triggered*)

## What will price cap achieve ?

- **Positives: price cap will:**
  - Keep consumer prices just and reasonable in buyer States
  - Reduce financial burden on DISCOMs/state governments
  - Mitigate liquidity crunch faced by DISCOMs
  - Rationalise profits made by portfolio sellers / generators
- **Negatives : price cap may:**
  - Reduce flow of generation investment
  - Reduced market volumes
  - Increase price of power in States who are major sellers (portfolio sellers)
  - Disincentivise DISCOMs in improving operating efficiencies
  - Disincentivise DSM, including energy efficiency, demand response and fuel substitution programme
  - Increase long term power purchase rates as investors try to recover intended returns through long term power purchase rates



## Why are prices in short-term market high?

- Excessive profit motive or rent seeking behaviour by portfolio sellers and generators
  - Not likely in our situation as:
    - Generally buyers (being mostly Govt. Or Govt. Owned entities) float tenders for purchase
    - Generally ,sellers (especially portfolio sellers – who are either Govt. Or Govt. Owned entities) float tenders for identifying buyers
  - Top ten sellers who have market power have sold at price that is lower than total weighted average price



## Why are prices in short-term market high?

- Reflection of market condition
  - Demand-supply mismatch → *Generally present in Indian condition*
  - No option for buyers, but to buy → *Not generally true in Indian condition*
    - Universal service obligation not stipulated (no load shedding not mandatory )
    - Can undertake load levelling
    - Can undertake DSM
    - Bring higher operational efficiency
    - Bring Time of day tariff
  - Less liquidity → *Generally true*
  - Imperfect markets/no competition (few sellers/buyers) → *Generally true*
  - Congestion experienced for transacting through power exchanges → *Some times true*



## Why are prices in short-term market high ?

- Preliminary analysis shows that high prices is more a reflection of market condition, which has allowed sellers to make excessive profits
  - Prices have not remained high continuously
  - Have varied, depending on demand/supply situation (higher in times of transient events such as elections, draught, etc;
  - Have come down at the conclusion of transient events →
- Due to shortages, there is competition among buyers to purchase scarce resource (power)
  - Quoting higher prices in times of “need” due to transient events such as elections, low rain fall, etc.

## Is price cap the only option ?

- Price high mostly due to market conditions
- Market conditions cannot be changed immediately and since prices indeed are high
  - Short term response has to be cap on prices
- Cap will only help in addressing the *symptom (high price)* and not help in mitigating the *cause (market conditions)* behind high prices
- *Imperative that cap is simultaneously followed with efforts to change market conditions -increase supply and reduce demand:*
  - Incentivise further capacity creation
  - Undertake Demand Side Management
  - Undertake operational efficiency measures
  - Time of Day tariff ,Linkage between market determined short-term whole sale price and retail price



## Price Cap: Issues to be Addressed

- What should be the basic principle for deciding on the level of cap?
- At what level of price of power per kWh should price cap be imposed?
- When should price cap be imposed?
- How long should price cap remain in place?

## Price Cap: Basic Principle for Deciding Cap Level

- Marginal cost of most expensive unit
  - Does not exclude any generation capacity – important in times of shortages
  - Addition of peaking capacity not discouraged
  - May provide opportunities for abnormal profits for some generators (coal, or hydro based generators)
  - Easy to implement in OTC and power exchanges as it does not differentiate between generators
- Cost plus principle with appropriate assumptions for ROE, heat rate, capacity utilisation, fuel cost, fuel source, etc.
  - Multiple cap levels, depending on fuel types, source, etc.
  - What percent of total sale of short-term power comes from coal, liquid fuels, gas, etc. will need to be ascertained
  - May strand some generation capacity and thus reduce availability and increase shortages



## Price Cap: Basic Principle for Deciding Cap Level

- Cap based on historical prices/bidding behaviour
  - Spikes caused by transient events (elections, draught)
  - Decision about caps not to be based on transient events
- Cap based on consumer opportunity cost
  - Cost of power outages OR cost of strategy to avoid power outage OR willingness to pay are proxies for opportunity cost
  - Different consumers have different power outage costs, power outage mitigation costs or willingness to pay
- Full control on profits
  - No more market determined price , same as regulated pricing regime

## Price Cap: Deciding Cap Level

- Marginal cost of most expensive unit
  - Price Ranges between Rs. 9.7/kWh or Rs. 8.33/kWh, depending on whether cap on total (variable+ fixed) price or just variable price
- Cost plus principle
  - Coal based generation, depending upon coal type, source, and distance from mine, cost varies between Rs. 3.6 to Rs. 6.91 /kWh
- Historical Prices
  - Caps based on 3 month moving averages for:
    - Transactions through traders – Rs. 4.71 to Rs. 6.36/kWh
    - IEX – Rs. 3.28 to Rs. 8.42 per kWh
    - PXIL – Rs. 3.23 to Rs. 9.51 per kWh
- Opportunity cost
  - Variable cost of diesel generation ~ Rs. 11/kWh
  - House holds – inverter ~ Rs. 17 per kWh
  - Those who do not take any power outage mitigation measure ~ ZERO





## Price Cap: When & How Long to Impose?

- When to impose?
  - Even once level of price cap is decided, question of when should one start imposing price cap remains
    - Should price cap be triggered as soon as price reaches cap level?
    - Should it be triggered when prices remain above cap level for sustained period of time?
    - What should be that sustained period? One week, two weeks, one month?
- How long to impose?
  - When prices go below the level? How long should it be below the level to lift the cap?

## Implementation Issues

- Price cap and rationing
  - Price cap will mean demand out stripping supply at cap price
  - Ensuring equitable allocation of scarce resource at cap price level will be a challenge
- Differential price cap difficult to implement, especially on power exchanges
- Putting price cap on short term OTC sales will lead to trade shifting to power exchanges
  - If congestion persists, it may lead to stranded generation assets
- Challenge of imposing cap on OTC markets which are 3 month ahead markets
  - What happens to existing contracts
  - Will take 3 months for cap to be fully effective



## Issues For Discussion

- How to address abnormal profits of portfolio sellers ?
  - Price cap is one alternative, Is there any other alternative ?
- Prices have come down during 2009-10
  - However with higher UI rates notified in May 2010, possibility of short-term power prices rising
    - CERCs' recent *sou motu* order asked inter-state traders to weekly report new contracts entered
    - CERC Is monitoring and studying the impact, if any, of higher UI notified rates on short-term price of power through traders
  - Price of power being contracted through traders (OTC market) generally observed to be higher than PX prices





## Issues For Discussion

- Alternative 1
  - Consider imposing price cap of R. 5/kWh on Coal / Hydro/Lignite based generators
  - Leave Liquid Fuel Generators out
  - Consider imposing price cap on prices in OTC market (power transacted through traders)
  - Leave power exchanges out
- Alternative 2
  - Uniform price cap on all markets
  - Based on most expensive unit



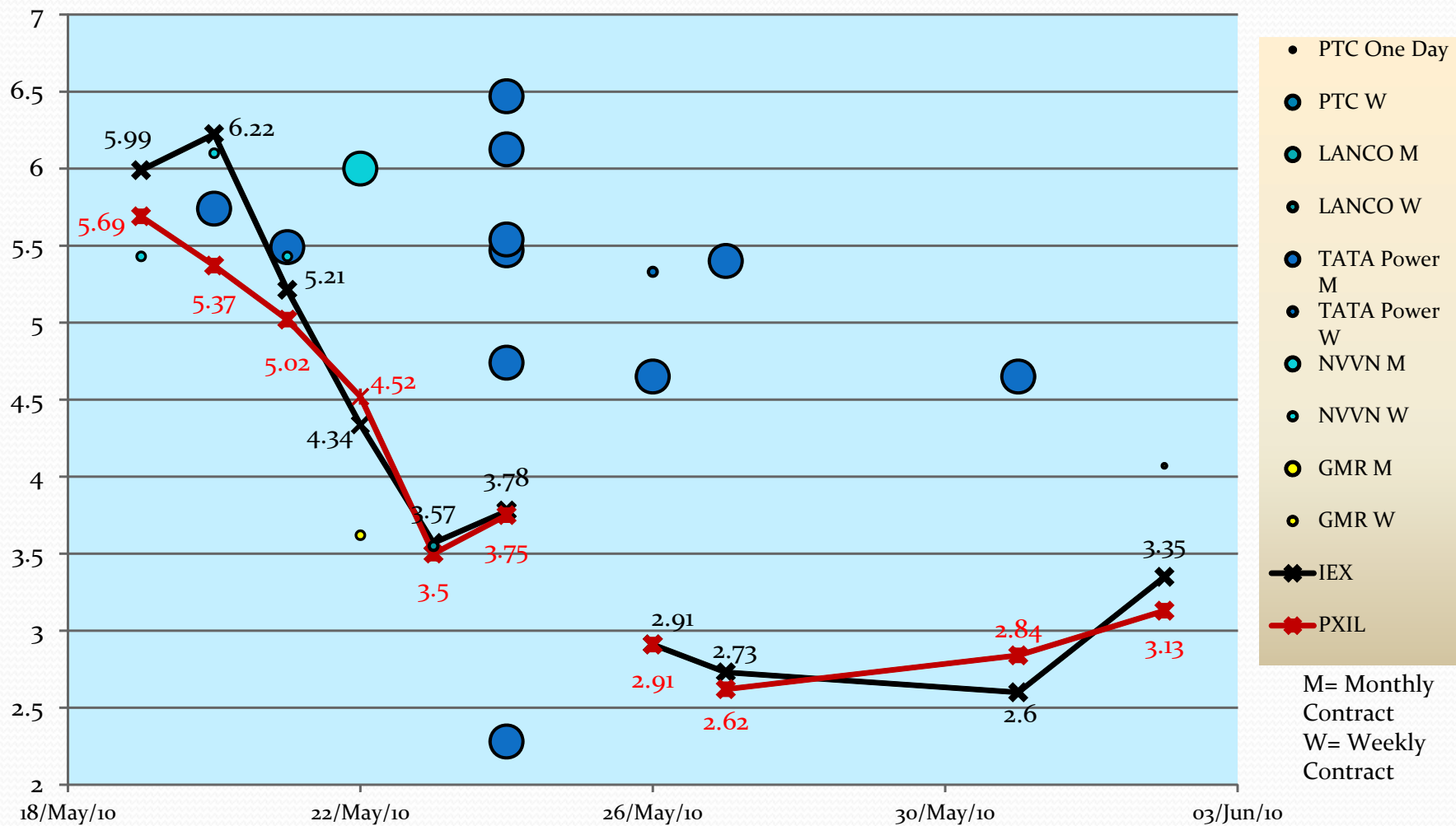
*Any market intervention has to be seen as a step towards orderly market development in view of the imperfections in the market presently*



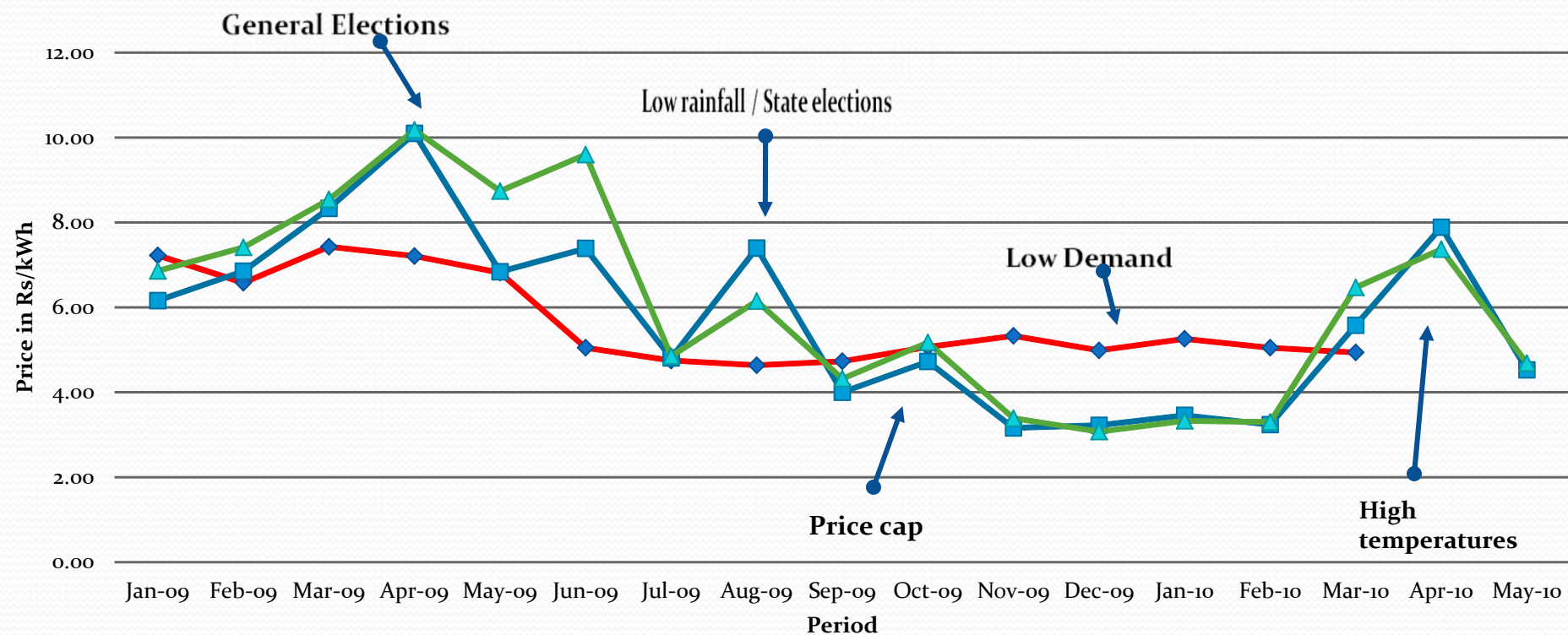


Thank You

## OTC ( Trader's ) Sale Prices - Exchange Prices ( RTC Contracts)



## Plot of Monthly weighted Average Price of Power in the Short term Market For the Period January 2009 to May 2010



◆ Price of Power transacted through Trders (OTC Trade) 
 ■ Price of Power transacted through IEX 
 ▲ Price of Power transacted through PXIL





## Weighted Average Price of Power Sold Through Traders: Top Ten Sellers Verses Other Sellers in the Year 2009

Description	As a percentage of total sale excluding banking	Weighted Average Price (Rs/kWh)
Sale by Top 10 (by Volume) sellers	60.70%	6.32
Sale by other than Top 10 (by Volume) sellers	39.30%	6.55
Total	100%	6.41

