

POWER EXCHANGE INDIA LIMITED

PARIVARTAN



Power Sector in India in transition from a regulated to competitive sector: PXIL as knowledge infrastructure

Dear Readers,

As we start this New Year 2010, it is also time to look back at the key events of the year gone by, which have furthered the development of a competitive and efficient power market in the country

The power exchanges completed a year of operation during 2009, demonstrating the benefits provided to all kinds of participants by such organized marketplaces. It is the presence of the exchanges that has helped small captive power producers across the country as well as a few industrial consumers avail of Open Access to participate directly in the national market.

Last year also saw the launch of longer tenure products on the exchanges, wherein the regulator allowed the two exchanges to come up with two different methodologies for price matching. A significant stand, which allowed the market to create innovative products and systems that are in sync with the realities of the Indian power market.

The prices reflected on the exchanges have also seen a complete cycle, with the similar period last year seeing high prices compared to the absolutely low prices prevailing this year. This only demonstrates the deep linkage of electricity with the social sector in India, where specific socio-political events have deep impact on the power economy. The prices on the exchanges now, in the absence of such events, have also seen a high degree of correlation with the prevailing UI prices, thus implying the need to delink the two, so that participants do not price their demand-supply situation on the basis of an artificial price band.

Transaction of electricity through the exchanges has unfortunately suffered a jolt due to continued congestion on inter-

regional transmission lines. Since exchange transactions constitute a minor part of the overall usage of such transmission lines, the commercial implications of the current congestion management methodology are creating an impetus for innovation in this area.

The emergence of power exchanges as organized marketplaces which have enabled another set of sector entities to come and participate has also changed the overall dynamics of the sector, which in a way is being resolved by entities seeking clarity on functioning and roles of such entities.

In this regard the draft power market regulations have been a significant step forward. A widespread consultative approach has been undertaken by the Central Regulator in capturing the views of a wide cross-section of the participating entities, through seminars, advisory committee meetings as well as a public hearing on the subject.

The draft power market regulation seeks to lay out some key precepts for the market. These have been in the areas of defining the

principles of market design, risk management through defining prudential capital norms for exchanges as well as participants, creation of a separate clearing corporation to identify, isolate and manage market risks, demutualization of exchanges and overall governance issues.

The draft regulations have sought to create a framework on which participants can continue to innovatively address the needs of their stakeholders.

We look forward to the continued growth of the power market through the fillip provided by these power regulations and other policy/regulatory measures in the days to come.

I would like to take this opportunity to wish our readers a very Happy and Prosperous New Year and I hope the continued development of a competitive and efficient power market allows us to quickly reach our collective desire of Power for All.

Warm Regards,

Rupa Devi Singh
MD & CEO

TRADING DATA

DECEMBER 2009

Total Buy Bids (MUs)	141.496
Total Sell Bids (MUs)	388.26
Total Market Cleared Volume (MUs)	96.628
Total Unconstrained Market Cleared Volume (MUs)	106.354
Max MCP (Rs/KWh)	4.2
Min MCP (Rs/KWh)	0.6
Avg. MCP (Rs/KWh)	3.1
Max Volume in a day (MUs)	5.82
Total Market Clearing Volume (MUs till 31st Oct '09)	759.578

Development of Power Markets



The power sector in India has seen significant developments post the enactment of the Electricity Act 2003. The policy and regulatory environment has been very conducive to the development of the power markets within the country.

The Electricity Act 2003 ushered in and legitimised the concept of trading of electricity within the country and also suggested the development of power markets within the country to be developed by the Appropriate Regulator and in accordance with the National Electricity Policy. The National Electricity Policy drafted by the Government of India is a seminal work on giving shape and policy direction to the development of the power sector as also the power market within the country. Under Section 5.7 of the NEP, the Government of India underscored that the development of power market would need to be undertaken by the Appropriate Commission in a time-bound manner.

In view of the above and also in pursuance to Section 66 of the EA 2003, the CERC issued a discussion paper for setting up a common platform for trading of electricity. After sector-wide debates and discussions, the plans for

setting up power exchanges within the country were formulated and by October 2008, two exchanges were successfully running with active participation from various utilities across the country.

With the development of organised marketplaces in the form of power exchanges, the power market in the country has undertaken a completely new trajectory of development. Additionally, new regulatory developments as also policy measures are being formulated which would transform the landscape of the power market in the country.

Structure and Schedule

This training program has been structured to provide a thorough understanding from the basic principles of markets and market design to specifics of trading in the current day-ahead and term-ahead markets in the country. The three day residential program has been developed by IIM Ahmedabad in association with Power Exchange India limited to provide a complete market theory foundation, power market development worldwide and in India as well as hands-on training on current trading systems.

The training course has been specifically designed for senior functionaries from Central and State utilities, Regulators, System Operators and Load Despatchers, Distribution Companies, Trading Companies, Power Generators, Captive Power Plants, Industrial Consumers, Banks / Financial Institutions / Development Institutions and Consulting firms across India as also other South Asian countries.

DAY-1

Registration Introductory Session

Welcome address
The purpose of the programme

Session - 1 Macroeconomics of Markets

Various types of markets

- Stocks, Commodities & Financial

Hierarchy of market participants and their roles

Development of Exchanges / centralised market infrastructure

- Concept, working mechanisms, benefits

Session - 2 Overview of electricity market evolution Emergence of electricity markets worldwide

Evolution
Major Policies & Regulations introduced
Present power Sector Structure

- Types of markets
- power pools, exchanges
- voluntary bidding, mandatory etc
- The reasons for various structures of the power market

Session - 3 Power Sector in India

Evolution of power sector
Major Policies & Regulations introduced
Structure of Power sector in India

Transmission Pricing, Infrastructure & Congestion Management

Long term / Short Term / PX transactions
Current and proposed

Recent Policies / Regulations related developments

Comments to key issues of EA 2003
Power Market Regulation
RECs, ESCs

DAY-2

Session - 4 World Electricity Markets

Present Market Structure and trading Mechanism
USA, UK, Nordpool, European Countries (EEX, Spain, France), Australia, Other South American and Asian countries

Products Traded

Delivery Based
Cash Settled
Capacity / Transmission / Ancillary products
Environment related products (RECs, ESCs etc.)

Session - 5 Indian Power Market

Development of Power Exchanges in India
Process of trading, eligibility, trading cycle incl. Clearing & Settlement

Products

Existing Products: Day-Ahead, Weekly contracts
Expected Products: Longer Tenure, RECs, SECs, Futures, Options etc.

Session - 6 Trading Game based on Day- Ahead Market

Moderated by PXIL & IIMA

DAY-3

Session - 7 Preparing for tomorrow

Risk Identification / Measurement & Monitoring tools

- Hedging / Correlations / VaRs

MIS requirement & importance
Internal controls

Session - 8 Portfolio Optimisation: Bidding & Trading Strategy

What is a Portfolio
Forecasting

- Demand Forecasting Model
- Price Modelling

Bidding Strategies (in various scenarios) / Game Theory

Session - 9 (Final Session) Trading Game based on Weekly Products Market

- Moderated by PXIL & IIMA

Test and Certificate Distribution

Participation fee

The delegate fee is Rs.45,000/- for one participant, Rs.85,000/- for two participants and Rs.1,20,000/- for three participants.

The program would be fully residential and the program fees will cover the entire cost of providing accommodation at the IIM Ahmedabad campus and all ancillary costs including training material provided to the participants.

Top News

Free flow of power across state borders is an essential prerequisite for the development of a robust pan-India power market: CERC chief: December 31, 2009

Free flow of electricity across state borders is an essential prerequisite for the development of a robust pan-India power market, asserted the central electricity regulatory commission (CERC) chairman, Pramod Deo. The regulator's comments came in the wake of the ongoing litigation over the Section 11 of the Electricity Act 2003, with states like Tamil Nadu allegedly misinterpreting the emergency clause to thwart flow of their surplus power to the National Grid...
Source: <http://www.financialexpress.com/news/free-flow-of-power-across-state-borders-is-a-must-cerc-chief/561677/0>

Power ministry floats Cabinet note to resolve issue in implementing open access that allows large users to choose their electricity supplier: December 23, 2009

In a move that could finally open up the power market in India, the power ministry has floated a Cabinet note to resolve a contentious issue in implementing open access that allows large users - typically consuming 1 Mw and above - to choose their electricity supplier...
Source: <http://www.business-standard.com/india/news/power-ministry-floats-cabinet-note-to-push-open-access/380471/>

Grid congestion causing higher price in North: December 23, 2009

Northern states have been reeling under frequent power cuts and a hike in the peak power rates due to increasing congestion in the grid. At the Indian Energy Exchange (IEX) and Power Exchange India (PXI), the power traded during peak hours in these states is at Rs 4.85-Rs 5 per unit, compared to Rs 2.50-Rs 3.30 per unit in rest of the country. The grid congestion is causing a lot of hurdles in the transmission of power...
Source: <http://www.business-standard.com/india/news/grid-congestion-causing-higher-price-in-north/10/21/380472/>

Power tariffs in open market crash to Rs2 - Rs5 per unit: December 29, 2009

Power tariffs in the open market have crashed to Rs2-Rs5 per unit in December from Rs12-Rs14 per unit in June 2009. Seasonal fluctuation leading to low demand is being stated as the reason for these low tariffs. Riding on high merchant power tariffs, a number of power companies have planned huge capacity expansions to cater to merchant power trading. The recent drop in merchant power tariffs, however, has shown that prospects are highly seasonal in this sector...
Source: <http://moneylife.in/article/8/2991.html>

Final order on new energy rules in two weeks: December 18, 2009

While power utilities and traders have generally welcomed the Central Electricity Regulatory Commission's draft regulations on renewable energy certificates (RECs), they have warned that the short supply of renewable energy (RE) may encourage speculative activity and volatility in the already tight market. However, the power exchanges Indian Energy Exchange and Power Exchange India have welcomed the provision of trading RECs through exchanges...
Source: <http://www.business-standard.com/india/news/final-ordernew-energy-rulestwo-weeks/10/21/379954/>

Cooperation between Hungarian Power Exchange HUPX and EPEX Spot: December 17, 2009

HUPX, the Hungarian Power Exchange, and EPEX Spot have decided to cooperate towards HUPX's operational launch, envisaged in July 2010. The scope of this cooperation encompasses trading systems and services. The clearing activities will be handled by European Commodity Clearing AG (ECC), which already provides clearing and settlement for all EPEX Spot markets...
Source: <http://www.mondovisione.com/index.cfm?section=news&action=detail&id=87515>

China Guarantees a Market for Renewable Energy: December 28, 2009

China is trying out an interesting new rule that privileges energy sources like solar and wind power over coal. The country has modified existing law to require that utilities buy all the available power from renewable energy developments...
Source: <http://industry.bnet.com/energy/10002714/china-guarantees-a-market-for-renewable-energy/>

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