



EUCI Presents a Seminar on:

# MAXIMIZING VALUE OF GENCO ASSETS IN ERCOT NODAL MARKET

March 23 – 24, 2010 • Hyatt Regency San Antonio on the River Walk • San Antonio, TX

## TESTIMONIALS FROM PAST ATTENDEES

**"Very well done course! Lots of good information packed in 2 days!"**

*Market Participant who attended seminar in San Antonio*

**"Excellent overview on bid-to-bill issues for the Texas Nodal Market"**

*Market Participant who attended seminar in Houston*

**"Very good material! Excellent insight!"**

*Market Participant who attended seminar in Houston*

**"The PCI instructors presented a very complex subject and made it very understandable and enjoyable for me and others. Great job!"**

*Market Participant who attended seminar in Houston*

**"I got a lot out of the course... Course brought together insights into concepts that I am just beginning to understand after 4 months in the settlement area"**

*Market Participant who attended seminar in San Antonio*

**"Very informational! Good balance between overview and details"**

*Market Participant who attended seminar in San Antonio*

# MAXIMIZING VALUE OF GENCO ASSETS IN ERCOT NODAL MARKET

March 23 – 24, 2010

## SEMINAR OBJECTIVES

Sponsored by PCI and EUCL, this 2-day seminar provides an in-depth discussion on bidding strategies for the ERCOT Nodal Market and uses a number of case studies to illustrate how you can maximize the value of your genco assets in the new ERCOT Nodal market. In the seminar, you will have an opportunity to use a market simulator to submit your energy and ancillary-service offers, test your bidding strategies, clear the market, compute settlement, and determine the bottom-line profit for your generation and load assets. The seminar covers the following hot issues:

- What are the main objectives of the ERCOT Nodal market?
- What are the key differences between the existing zonal market and the new Nodal Market?
- How should you best prepare your genco team (portfolio managers, traders, risk managers, back-office personnel, and plant managers) for the ERCOT Nodal Market?
- How can you formulate unit offers to fully account for price and volumetric risks, operational constraints, production costs, and market mitigation rules?
- How should you formulate energy and ancillary-service offers to maximize total profits while meeting operational constraints and risk guidelines?
- What rules does ERCOT use to mitigate unit offers?
- How well can you forecast costs, revenues, profits & losses, fuel consumption, and emissions for units that are scheduled by ERCOT?
- How can you verify that the ERCOT Day-Ahead schedule is “optimal” for your units?
- What rules does ERCOT use to penalize units for uninstructed deviation?
- How much money are you leaving on the table if you decide to self-schedule selected units? Can you profit by self-scheduling?
- How does a lower availability affect revenues and profits for your portfolio?
- What rules does ERCOT use to compute RUC make-whole payments and charges?
- What are the key risk drivers in ERCOT? What is the best way to formulate hedging strategies for your genco assets?
- How should you structure CRR contracts to hedge against congestion costs?
- In the long run, will your plants collect enough revenues from the energy, capacity, and ancillary service markets to cover for their operating and capital costs?
- What are the key settlement charge types in the new ERCOT Nodal Market?
- Why perform shadow settlement? Do you need to have your own shadow settlement software to check the ERCOT invoices?
- What are the main data sources for shadow settlement?
- What are the main causes for settlement disputes? What is the best way for managing settlement disputes?
- How can you use post-analysis as strategic tools to provide feedback to traders on the effectiveness of their bidding strategies?
- How can you quantify P&L leakages?
- What IT infrastructure should you build to automate the bid-to-bill process?

## WHO SHOULD ATTEND THIS SEMINAR?

- Portfolio managers and traders responsible for formulating and submitting energy and ancillary-service offers to ERCOT
- Back-office employees who need to gain a good understanding of the new settlement rules for the ERCOT Nodal Market
- Power-plant managers who would like to understand the impact of LMPs on their plant profitability
- Genco executives who need a good understanding of the potential impacts of the new ERCOT Nodal Market on their genco profits and losses
- Employees of ISO/RTOs, attorneys, and regulators who need to understand market rules, congestion management philosophy, and mitigation guidelines that are proposed for the new ERCOT Nodal Market
- Evaluate the elements for a successful collection agency relationship and learn how to leverage 1st party opportunities and achieve 3rd party optimization
- Discuss what your customers expect to find on your IVR
- Apply “back to basics” processes to lower write-offs

Register today! call (201) 871-0474

# MAXIMIZING VALUE OF GENCO ASSETS IN ERCOT NODAL MARKET

March 23 – 24, 2010

## PROGRAM AGENDA

**TUESDAY, MARCH 23, 2010**

**Registration and Continental Breakfast: 8:00 – 8:30 a.m.**

**Course Timing: 8:30 a.m. – 4:30 p.m.**

**Group Luncheon: 12:00 – 1:00 p.m.**

### **Overview on ERCOT Nodal Market**

- Why Move to Nodal Market?
- Key Differences in Market Rules between Zonal and Nodal Markets
- Market Terminology
- Nodal Market Instruments
- Reviewing Day-Ahead Workflow
- Understanding SCUC Objectives for DA and DRUC
- Reviewing Real-Time Workflow for ERCOT Market Participants
- Quantifying P&L Leakages
- Why Use DAM Energy-Only Bids and Offers?
- Bid-to-Bill Timeline & Challenges
- Key Deployment Milestones for the New ERCOT Market
- Objectives of New ERCOT Nodal Market
- Differences in Market Rules between ERCOT and Other LMP Markets (MISO, PJM, ISO-NE, NYISO, and CAISO)

### **Uses of Nodal Locational Marginal Prices in Bidding & Settlement**

- Why Use Nodal Locational Marginal Prices?
- Key Differences between Zonal & Nodal LMPs
- How Are Nodal LMPs Computed?
- Understanding Impacts of Flowgates on Congestion
- Computing Congestion Rent
- Using CRR Contracts to Hedge Against Congestion Costs
- Where does ERCOT Get the Fund to Pay CRR Contracts?
- Can Nodal LMPs be Negative?
- Understanding Shift Factors
- Day-Ahead Settlement Calculations
- How Well Can You Forecast Day-Ahead Nodal LMPs?

### **Formulating Bidding Strategies for Generating Units**

- Understanding 3-part Energy Offers for Generators
- What is Current Operating Plan?
- Do you need to Submit Balanced Schedules?
- Market Principles behind Make-Whole Payments & Charges
- Computing Day-Ahead Make-Whole Payments for Generators
- Who Will Pay DA & RUC Make-Whole Charges?
- Understanding RUC Clawback Charges
- Examples Illustrating Day-Ahead and Real-Time Settlement for Generators
- Computing Penalties Due to Uninstructed Deviation
- Computing Payments for Voltage-Support Services
- When do my Units Receive Emergency Payments?

### **Bidding Strategies for Loads and Transactions**

- Reviewing Demand-Bidding Strategies
- Examples Illustrating DA & RT Settlement for Loads
- Using Trades (Energy, Capacity, and Ancillary-Services) to Obtain Price Certainty and Minimize RUC Charges
- Can Settlement Location Influence Bottom-Line Profits of Energy Trades?
- How should we Schedule Units that are used to Serve Energy Trades?
- Settlement Charge Codes for Energy, Capacity, and A/S Trades
- Understanding Settlement Implications for Submitting Self Schedules
- Why Use DAM Energy-Only Bids and Offers?

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## PROGRAM AGENDA

**WEDNESDAY, MARCH 24, 2010**

**Continental Breakfast: 8:00 – 8:30 a.m.**

**Course Timing: 8:30 a.m. – 4:30 p.m.**

**Group Luncheon: 12:00 – 1:00 p.m.**

### **Strategies for Bidding Ancillary Services**

- A/S Products Offered Under ERCOT Nodal Market
- Formulating A/S Offers
- Understanding Opportunity Costs
- Understanding A/S Deployment Costs and Probabilities
- Key Changes in A/S Procurement and Pricing in ERCOT Nodal Market
- Why does ERCOT Use Co-Optimization to Compute Prices LMPs and A/S Prices?
- Does Co-optimization Minimize ERCOT Energy & Ancillary-Service Costs?
- Does Co-optimization Maximize Revenues and Profits for Market Participants?
- How Does ERCOT Compute Marginal Prices for Ancillary Services?
- Understanding Causes for Price Reversal
- Computing Revenues and Costs for Providing Ancillary Services
- How Does ERCOT Allocate A/S Charges?

### **Using CRR Contracts to Hedge Against Congestion Costs**

- Types of CRR Contracts
- What is Congestion Rent?
- Settlement Calculations for CRR Contracts
- How do we Procure CRR Contracts?
- Using CRRs to Hedge Against Congestion Costs
- Special PCRR Options for Non Opt-In Entities
- Should CRR Contracts Influence Your Unit Dispatch?

### **Running Shadow Settlement to Check Invoices for ERCOT Nodal Market**

- Key Differences in Settlement Rules between ERCOT Zonal and Nodal Markets
- Understanding Settlement Statements and Charge Codes for ERCOT Nodal Market
- Settlement Calendar for ERCOT Nodal Market
- Why Perform Shadow Settlement?
- Key Functions of Shadow Settlement Software
- Mapping Data Sources to Support Shadow Settlement
- Downloading Settlement Statements and Invoices from ERCOT Server
- What Meter Data do you Need to Download to Compute Real-Time Settlement?
- What are the Most Common Causes for Settlement Disputes?
- Managing Settlement Disputes

### **Market Simulation Case Studies**

- Formulating Energy and Ancillary-Service Offers
- Quantifying Costs for Providing Ancillary Services
- Quantifying Probability of Ancillary-Service Deployment
- Computing Revenues and Costs for Providing Energy and Ancillary Services
- How should we Formulate our Energy and A/S Bids to Maximize our Market Benefits?
- Should we Self-Schedule to meet our Energy and A/S Requirements?
- Case Studies Illustrating ERCOT Bid-to-Bill Workflow

### **Using Post-Analysis Tools to Provide Feedback to Traders**

- Objectives of Running Post-Analysis
- Using Post-Analysis Results to Provide Feedback to Traders on Effectiveness Bidding Strategies
- Quantifying Profit & Loss Leakages
- Why does Front Office Needs to Understand Settlement?
- Settlement Forensics – Where Front & Back Offices Meet
- Using Post-Analysis to Compute Key Performance Indexes

### **Understanding Market Mitigation**

- Objectives and Focus of Market Monitoring
- Definition of Market Power
- Nodal Market Mitigation Rules
- Using SCED Results to Mitigate Real-Time Offers
- Impacts of IMM Interventions on Settlement Results

### **Course Review & Round-Table Discussion**

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## INSTRUCTORS

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**Khai Le, Vice President, PCI:** Over the past 34 years, Khai Le has conducted 500+ seminars on market-based operations, shadow settlement, RTO operations, bidding strategies, and portfolio optimization for utilities and RTOs worldwide. He is currently working with market participants in ERCOT, CAISO, MISO, PJM, and SPP to deploy the PCI Generation Supply Management System (PCI GenManager, PCI GenTrader and PCI GenPortal) to formulate and evaluate bidding strategies. Khai authored over 100 technical papers on unit commitment, hydro-thermal coordination, emission dispatch, optimization methods, post analysis and short-term planning. Five of his papers received prize awards. Khai received his BS from Harvey Mudd College and his MS from Carnegie Mellon University. He is a Fellow of the IEEE and a Registered Professional Engineer in Pennsylvania.

**Scott Quin, Manager, PCI:** Scott Quin has over 20 years experience in the electric utility industry and 15 years of practical, operations experience in the wholesale electricity market place. His experience varies broadly from managing a 7000+ MW portfolio of assets and load in Florida to managing state of the art portfolio management software systems to providing subject matter expertise and consulting. As an active member of the Texas Nodal Transition Plan Task Force (TPTF), Scott has an excellent understanding of the new ERCOT Nodal Market from an operational, bidding, and settlement perspective. Scott is currently deploying the PCI GSMS suite to automate the bid-to-bill workflow for several ERCOT market participants. Scott received his BS in electrical engineering from Mississippi State University and his MS from the University of South Florida in engineering management.

**Javier Martin, Director, PCI:** Javier Martin is responsible for monitoring the ERCOT market, tracking market rule changes, collecting market intelligence, and providing direction to the PCI development team. Javier is currently working with ERCOT, MISO, PJM, and SPP market participants to deploy the PCI GSMS suite to automate their bid-to-bill workflow – from bid creation and submission to P&L forecasting, analysis of market results, and shadow settlements. Javier received his MS in Natural Gas Engineering and Management from the University of Oklahoma.

**Paul Davis, Manager, PCI:** Paul Davis has over 8 years of experience in portfolio management, unit commitment, production costing, risk evaluation, and bidding strategies. Paul graduated Magna Cum Laude from Auburn University in 1991 with a degree in Mechanical Engineering. Paul earned his Master's in Finance from Texas A&M University in 2000 and subsequently joined Mirant where he managed their ERCOT day ahead and real-time trading activities. In 2002, Paul went to work for Progress Energy where he served for 6 years as the Lead Portfolio Manager. Paul is currently leading the development of PCI P&L Analyzer, which combines operations and settlement results to provide feedback to traders on the effectiveness of their bidding strategies.

## PROCEEDINGS

The proceedings of the course will be published and one copy will be distributed to each registrant at the course.

## COURSE LOCATION

A room block has been reserved at the Hyatt Regency San Antonio on the River Walk, 123 Losoya, San Antonio, TX 78205, for the nights of March 22-23, 2010. The rate is \$179.00 single or double, plus applicable tax. Call 210-222-1234 for reservations and mention the EUCI course to get the group rate. Make your reservations prior to March 1, 2010. There are a limited number of rooms available at the course rate.

**Please make your reservations early.**

## REGISTRATION INFORMATION

### REMEMBER, EVERY 4TH REGISTRANT IS FREE

For instant registration, call (201) 871-0474 or fax the Registration Form to (253) 663-7224.

Register 3, Send 4th Free!!

Any organization wishing to send multiple attendees to this course may send 1 FREE for every 3 delegates registered. Please note that all registrations must be made at the same time to qualify.

All cancellations received on or before February 26, 2010 will be subject to a \$195 processing fee. Written cancellations received after this date will create a credit of the tuition (less processing fee) good toward any other EUCI conference or publication. This credit will be good for six months. In case of conference cancellation, Electric Utility Consultants' liability is limited to refund of the registration fee only. For more information regarding administrative policies such as complaint and refunds, please contact our offices at (201) 871-0474.

EUCI reserves the right to alter this program without prior notice.

### MAIL DIRECTLY TO:

The Power Marketing Association (PMA)  
P.O. Box 2303  
Falls Church, VA 22042

**FAX TO:** (253) 663-7224  
**PHONE:** (201) 871-0474

## PLEASE REGISTER THE FOLLOWING

- Maximizing Value of Genco Assets in ERCOT Nodal Market, March 23-24, 2010, \$1495  
**Early Bird on or Before March 12, 2010, \$1295**

### ENERGIZE WEEKLY

When you sign up to "Energize Weekly" you will receive a new conference presentation each week via email on a relevant industry topic. The presentations are selected from a massive library of over 1000 current presentations that EUCI has gathered during its 22 years organizing conferences.

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