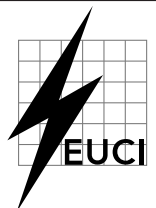


EUCI Presents a Course on:

Strategies for Bidding Ancillary Services in LMP Markets

June 16 – 17, 2008

Sheraton Indianapolis Hotel & Suites
Indianapolis, IN



A Leading Provider of
Continuing Education for
Energy Professionals

Strategies for Bidding Ancillary Services in LMP Markets

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SEMINAR OBJECTIVES

The goal for this workshop is to discuss strategies for bidding ancillary services (A/S) in LMP markets. The workshop will use simple case studies to explain bidding parameters, methods to quantify both deployment costs and opportunity costs for providing ancillary services, techniques for co-optimizing competing energy and ancillary-service products, methodologies to price ancillary services, and tools to perform settlement. The workshop will also discuss the impact of ancillary-service markets on your day-ahead and real-time bidding workflows and the bottom-line profit for your assets in LMP markets.

WHO SHOULD ATTEND THIS SEMINAR?

- Portfolio managers and traders responsible for formulating bidding strategies for ancillary services
- Back-office employees who need to gain a better understanding of settlement implications associated with ancillary-service products
- Power-plant managers who would like to understand the impact of ancillary services on their plant profitability
- Genco executives who need a good understanding of the potential impacts of ancillary-service markets on their genco profits and losses
- Employees of independent system operators, attorneys, and regulators who need to understand the implementation of ancillary-service markets in various LMP markets, methodologies to perform co-optimization, and implications on resource adequacy.

SEMINAR FEEDBACK FROM PREVIOUS ATTENDEES

"This was one of the best presentations I've attended on MISO ASM. The PCI instructors were able to take complex subject matters and simplify the material so that the average person can understand it and gain a desire to learn more about the subject." ... MISO Market Participant who attended seminar in Indianapolis

"Seminar was extremely informative and it was a lot of fun as well. I probably learned more in those two days than in all the other training sessions." ... MISO Market Participant

"The seminar was a very positive educational experience, greatly increasing our knowledge base of the MISO market. It was a very good workshop and was well targeted toward our needs." ... MISO Market Participant

"Very knowledgeable instructors, excellent source of information." ... CAISO Market Participant who attended seminar in Sacramento

"Excellent insight." ... CAISO Market Participant who attended seminar in Sacramento

"Very informational! Good balance between overview and details." ... CAISO Market Participant

"Very good material! Excellent insight!" ... ERCOT Market Participant who attended seminar in Houston

Strategies for Bidding Ancillary Services in LMP Markets

June 16 – 17, 2008

Program Agenda

Day 1 Monday, June 16, 2008

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

Seminar Timing: 8:30 a.m. – 5:00 p.m.

Group Luncheon: 12:00 – 1:00 p.m.

Overview on Ancillary-Service Markets

- Key features of A/S markets in MISO, NYISO, ISO-NE, ERCOT, and CAISO
- Why do we need ancillary services?
- How do RTOs determine ancillary-service requirements?
- Who can provide ancillary services – units, loads, and inerties?
- Which RTO currently uses co-optimization to procure ancillary services?
- Pricing ancillary service products – cost-based vs. market-based
- Typical market prices for ancillary services
- Do we have a market for VARS?
- NYISO's experience with using SCUC to Co-optimize energy and A/S
- Understanding costs for providing A/S
- Quantifying opportunity costs & deployment costs
- Using demand curves to price scarcity

Co-Optimizing Energy and Ancillary-Service Products

- Pros and cons of using co-optimization vs. sequential optimization
- Case studies to illustrate co-optimization
- Does co-optimization minimize energy & A/S costs for RTO footprint?
- Does co-optimization maximize revenues and profits for market participants?
- Can we explain A/S marginal prices published by RTO?
- Computing revenues and costs for providing ancillary services
- Does co-optimization produce correct price signals for A/S products?
- Understanding causes for A/S price reversal
- How do A/S requirements affect unit dispatch and LMPs?
- Are A/S marginal prices influenced by congestion?

Understanding MISO Ancillary-Service Market

- Why does MISO introduce A/S market?
- MISO deployment timeline for A/S market
- How will MISO compute ancillary-service requirements?
- Using A/S zones to insure deliverability
- New day-ahead bidding workflow
- Understanding new offer parameters for units
- How many ramp rates do market participants need to submit to MISO?
- New market instruments: DRR type I and II and EAR
- Reviewing real-time bidding workflow
- Why use dispatch bands?
- Understanding new MISO settlement charges for A/S products
- When does MISO penalize resources for non-compliance?
- Metrics for measuring effectiveness of A/S markets
- How does MISO allocate A/S charges?

About EUCI

EUCI is a leading provider of conferences, seminars, workshops and courses designed exclusively for the energy industry. We seek to create a forum for professional communication and exchange knowledge and ideas among energy industry professionals and others interested in the industry.

Join the thousands of others who have attended our events since 1987 and see why they keep coming back.

Agenda Continued on Next Page

Strategies for Bidding Ancillary Services in LMP Markets

June 16 – 17, 2008

Program Agenda

Day2 Tuesday, June 17, 2008

Continental Breakfast: 7:30 – 8:00 a.m.

Seminar Timing: 8:00 a.m. – 4:00 p.m.

Group Luncheon: 12:00 – 1:00 p.m.

Understanding New Settlement Charges for MISO ASM

- What data do we need to shadow settlement calculations under MISO ASM?
- Computing excessive-energy & non-excessive-energy volumes & charges
- Computing deficient-energy volumes & charges
- What criteria will MISO use to activate failure-to-follow dispatch flags?
- When are resources exempt from penalties?
- New MISO methodology to compute RT RSG charges
- Computing penalties for non performance
- Computing net regulation adjustment payments & charges
- Case studies illustrating day-ahead & real-time settlement calculations
- Understanding day-ahead & real-time make-whole payment calculations
- Typical settlement disputes for MISO ASM

Bidding Strategies for Ancillary Services

- Day-ahead workflow for bidding ancillary services
- Formulating day-ahead ancillary-service offers
- Quantifying costs for supplying ancillary services
- How does MISO deploy ancillary services in real-time operations?
- Understanding ancillary-service deployment costs
- Quantifying probability of ancillary-service deployment
- Formulating availability offers
- Understanding lost opportunity costs
- Is A/S self-scheduling allowed?
- Impacts of A/S self scheduling on profits
- Should we self-schedule ancillary services to hedge costs?
- Forecasting ancillary-service prices
- Quantifying profit margins for ancillary services
- Running case studies to illustrate impacts of various A/S bidding strategies on portfolio profit & loss
- Savings achieved by optimally allocating ancillary services
- Market simulation

Preparing for Ancillary-Service Markets

- Preparing for market trials
- Training key personnel (traders, power-plant managers, back-office, etc) for new A/S market
- What IT infrastructure do you need to automate your bid-to-bill workflow?
- Tools for evaluating A/S bidding strategies
- What lessons can we learn from market participants who are currently bidding ancillary services in ERCOT, CAISO, NYISO, ISO-NE, and PJM markets?

Round-Table Discussion

June 16 – 17, 2008

INSTRUCTORS

Khai Le, Vice President, PCI: Over the past 32 years, Khai Le has conducted 500+ seminars on market-based operations, RTO operations, bidding strategies, portfolio optimization, and shadow settlement for utilities and RTOs worldwide. He is currently working with market participants in MISO, PJM, SPP, CAISO, and ERCOT 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 of ancillary services, 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.

Bart Tsala, Senior Engineer, PCI: As a member of the PCI Consulting team, Bart Tsala conducts numerous training classes on the use of PCI GenTrader to optimize unit commitment, perform production costing, and evaluate ancillary-service bidding strategies. Bart wrote the LMP simulator, which is used in this course to co-optimize energy and ancillary services and evaluate bidding strategies. Bart Tsala received his Bachelor of Science in Power Systems at the Institut Supérieur Industriel de Bruxelles and his MSEE and PhD from the University of Oklahoma.

Javier Martin, Director, PCI: As a MISO Market Specialist, Javier Martin is responsible for monitoring the MISO market, tracking market rule changes, collecting market intelligence, and providing direction to the PCI development team. Javier understands the MISO day-to-day operations very well. He spent 2 years at MISO, working with day-ahead and real-time operators to test and deploy SCUC. Javier is currently working with MISO 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.

PROCEEDINGS

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

COURSE LOCATION

A room block has been reserved at the Sheraton Indianapolis Hotel & Suites, 8787 Keystone Crossing, Indianapolis, IN 46240 for the nights of June 15-16, 2008. Room rates are \$94 single and \$104 double occupancy. Call 888-627-7814 for reservations and mention the EUCI course to get the group rate. Make your reservations prior to May 25, 2008. There are a limited number of rooms available at the course rate. Please make your reservations early.



REMEMBER, EVERY 4TH REGISTRANT IS FREE!

REGISTRATION INFORMATION

For instant registration, call (201) 871-0474 or fax the Registration Form to (201) 767-1928.

Register 3, Send 4th Free!!

Any organization wishing to send multiple attendees to these conferences 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 May 16, 2008 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 conference 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.

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FAX TO:

(201) 767-1928

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(201) 871-0474

PLEASE REGISTER THE FOLLOWING

- Strategies for Bidding Ancillary Services in LMP Markets, June 16-17, 2008: **\$1295**, After June 6, 2008, \$1495

How did you hear about this event? (Direct email, Colleague, Speaker(s), etc.)

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