

ISO SETTLEMENTS SUMMIT

November 14-15, 2016
Millennium Knickerbocker Hotel
Chicago, IL

PRE-CONFERENCE WORKSHOP

**How to Develop a Training Program
for Settlements Analysts**

MONDAY, NOVEMBER 14, 2016

POST-CONFERENCE WORKSHOP

**Challenges and Lessons Learned for
Implementing 5-min Settlement**

WEDNESDAY, NOVEMBER 16, 2016



EUCI is authorized by IACET to offer 1.0 CEUs for the conference and 0.4 CEUs for each workshop.

SPONSORS



OVERVIEW

As RTO/ISO market transactions have mushroomed in recent years to reflect increasing system operations sophistication and complexity, market participants and the system operators themselves have encountered multiple new challenges in the area of market settlements. These include the need to:

- Improve data management
- Maximize accuracy so as to avoid the need for costly resettlements
- Promote accelerated settlements, to streamline business processes
- Enhance the market's flexibility to accommodate new challenges related to the proliferation of bidding increments

This conference moves beyond simply cataloguing these challenges and considers real-world solutions currently being employed to manage them and improve market efficiency and reliability. It provides a comprehensive overview of how ISOs and RTOs across North America are overcoming settlement challenges and the lessons they have learned in the process. And it offers insights into how market participants are flexing their own systems to maximize efficiencies and profits.

LEARNING OUTCOMES

Attendees will hear presentations and engage in discussions that will allow them to:

- Apply settlement analysis to drive profits and improve operations
- Evaluate optimum methods for accelerating settlement timelines
- Identify the key elements for creating a settlements team training process
- Assess process adjustments related to sub-hourly/5 min settlements
- Discuss market structure designs to accommodate distributed generation and their settlement implications
- Examine the top 5 settlement issues of 2016 from an ISO/RTO perspective
- Analyze back-office challenges for market participants in California EIM Market
- Assess the new North American electricity market in Mexico
- Review settlement analytics and report concepts
- Discuss methods for optimizing the statement validation and disputing process
- Identify best practices and challenges of ISO/RTO shadow settlements
- Evaluate any impacts that the Supreme Court's affirmation of FERC 745 (DR administered by wholesale markets) and settlements



"This is a great way to orient staff on the RTO/ISO settlements space. EUCI is incredibly talented at putting together groups of individuals with similar interests and goals."

Manager of RTO Settlements, The Energy Authority



"Great conference for all levels of utility industry participants/stakeholders/employees. The mix of presenters was well-balanced and gave us (attendees) different perspectives. I highly recommend this conference."

Management Assistant, San Francisco Public Utilities Commission

AGENDA

MONDAY, NOVEMBER 14, 2016

12:30 – 1:00 pm

Registration

1:00 – 1:15 pm

Program Overview

1:15 – 3:15 pm

ISO Settlement System Re-designs

- Which markets are doing it and why
- What will they entail?
- What do market participants need to know to plan for them?
- Implications to architecture, platform and software

ISO New England (ISO-NE): Shannon Carey, Director – Market Analysis and Settlements

Midcontinent ISO (MISO): Chris Delk, Manager of Market Services – Settlements

New York ISO (NYISO): Christopher Russell, Manager – Customer Settlements

PJM Interconnection (PJM): Ray Fernandez, Manager – Market Settlements Development

Southwest Power Pool (SPP): Don Shipley, Director – Settlements

3:15 – 3:30 pm

Afternoon Break

3:30 – 5:00 pm

Settlements Related to Sub-hourly/5 Min Settlements

- FERC Order 825
- Experience from markets that already have sub-hourly pricing

Moderator: Christopher Russell, Manager – Customer Settlements NYISO

Shannon Carey, Director – Market Analysis and Settlements, ISO New England (ISO-NE)

Chris Delk, Manager of Market Services – Settlements, Midcontinent ISO (MISO)

Ray Fernandez, Manager – Market Settlements Development, PJM Interconnection (PJM)

TUESDAY, NOVEMBER 15, 2016

8:00 – 8:30 am

Continental Breakfast

8:30 – 9:15 am

Supporting Contract Settlements

- Managing purchase power agreements (PPAs) for PURPA & wind resources
- Metering requirements for PPAs
- Need for contract settlements to support PPAs
- Invoicing timelines
- Custom reports
- Key challenges in managing contract settlements

Dustin Huff, Senior Settlements Analyst, DTE Electric Company

9:15 – 10:00 am

Settlements Related to Flexible and Fast Response Resources

- Which markets have incentives and rules to bring fast-responding resources into the market
- Should new products/services be introduced or can current offerings satisfy these needs?
- What that means for settlements

Marc Ruane, Director – Settlements, Retail and Credit, ERCOT

Shannon Carey, Director – Market Analysis and Settlements, ISO New England (ISO-NE)

Ping Wang, Manager – RTO Analysis, The Energy Authority

10:00 – 10:15 am

Morning Break

REGISTER TODAY! CALL 303-770-8800 OR VISIT WWW.EUCI.COM

AGENDA

TUESDAY, NOVEMBER 15, 2016 (CONTINUED)

10:15 – 11:00 am

Best Practices and Challenges of ISO/RTO Shadow Settlements – Panel Discussion

- Best Practices
 - o ISO sub-accounts/divisional accounting
 - o Detailed protocols and business practices manuals (BPMs)
 - o Client (market participant-facing) representatives
- Challenges
 - o Rounding error
 - o Speed
 - o Processing time
 - o Implementation of changes
 - o Ease of creating reports

Panel Discussion

11:00 am – 12:00 pm

Back-Office Challenges for Market Participants in California EIM Market

- Challenges in supporting back-office functions
- Using settlement to provide feedback loop to front-office and post-analysis personnel
- Key business goals for setting up EIM back-office group

Theresa Burch, EIM Program Manager, Puget Sound Energy

James Reschke, Settlement Supervisor, NV Energy

Khai Le, Senior Vice President, PCI

12:00 – 1:00 pm

Group Luncheon

1:00 – 1:45 pm

Settlements Related to Distributed Generation and Storage

- Solar gardens
- Distributed wind
- How ISOs are integrating DG into existing charges
 - o Battery storage
 - o Inverters and other power flow media
- Behind-the-meter net generation
 - o Doesn't show up as market node

Ping Wang, Manager – Settlement, The Energy Authority

1:45 – 2:30 pm

Optimizing the Statement Validation and Disputing Process

- Historical and statistical review of dispute vs recovery experience
- Establishing research and action thresholds
- Establishing distribution of workload among analysts
- Maximizing return on analysts' time

Alishan Mansourian, Senior Manager – Energy Settlements and ISO Market Analytics, Southern California Edison (SCE)

Josh Arnold, Principal Analyst – ISO Settlements, Pacific Gas & Electric (PG&E)

2:30 – 2:45 pm

Afternoon Break



“Great opportunity to network with other ISO settlements professionals from around the country and learn current best practices.”

Manager, PG&E

TUESDAY, NOVEMBER 15, 2016 (CONTINUED)

2:45 – 3:30 pm

Settlement Analytics and Reports

- Feedback to front office re: fleet performance
 - o Distribution of the report(s) to manage
- What does your front office want to see?
 - o Congestion hedging
 - o Are you following dispatch
 - o Penalty charges assigned to particular units
 - o Costs of forced outages
 - o Preferred timing of planned outages
 - o Impact of outages on FTRs/CRRs
 - o Unit capacity performance, operational efficiency and percentage of attainment
- Operating fleet at optimal performance levels
 - o Are the organizations assets following market signals most efficiently?
- Communicating information requests
 - o To and from the ISO
 - o within the market participant's management flow

Ryan Trushenski, Manager – RTO Settlements & Analysis, Entergy

3:30 – 4:45 pm

Lessons learned for Using Shadow Settlement Systems with Sub-hourly / 5-minute Settlements

- Increase in data storage
- Complexity of viewing 5-minute settlements billing determinant data on a screen
- Shadow settlement processing times
- Need for more reporting
- More time required by settlement analysts for ISO statement analysis and disputes
- Need for additional tools for analysis
 - o Visual Analytics, Business Intelligence, and graphing tools
 - o More robust reporting
 - o What-If shadow settlements

David Dan, President, Power Settlements Inc



“Excellent opportunity to compare and contrast various RTO markets; gain insights to future process improvements in your area of expertise, and network with those who can provide feedback and support in the future.”

Supervisor – Electric Settlements, WPS



“Informative and engaging. The material was well prepared and diverse in scope.”

Power Coordinator, OG&E



“Outstanding forum for communication between ISOs and market participants for all ISO markets.”

Manager – Market Operations Accounting, Xcel

PRE-CONFERENCE WORKSHOP

How to Develop a Training Program for Settlements Analysts

MONDAY, NOVEMBER 14, 2016

OVERVIEW

The skill-set and disciplines that a settlements analyst must master go well beyond what many industry generalists would think. Basic accounting knowledge is welcome and foundational, but it scarcely scratches the surface of the more analytical talents that a market participant will find compelling to inform its operational and management requirements. This workshop includes experts from ISOs, market participants and system designers who will provide a helpful set of “best practices” that will form a blueprint for assembling a team of settlement analysts and designing a systematic training program to ensure optimum performance.

LEARNING OUTCOMES

- Discuss a general framework by which market participants can develop a training platform to ensure their analysts and others moving into the discipline can “get up to speed” most rapidly
- Identify the essential components of knowledge that the settlement analyst must acquire
- Distinguish what sources the settlement analyst should rely upon for information and training
- Recognize the most valuable skillsets for settlement analysts and how to develop those

AGENDA

7:30 – 8:00 am **Registration and Continental Breakfast****8:00 – 11:45 am** **Workshop Timing****Topics Covered**

- ISO-specific knowledge essentials
- Utility/market participant-specific knowledge essentials
- IT-specific knowledge essentials
- Settlement cycle – when do statements, how often settled, how often invoiced
- Developing skill set criteria – MS Excel familiarity, coding w/Visual Basic and SQL Query
- Ensure accounting familiarity
- Navigate and use 3rd party vendor software training
- ISO Business Practical/Protocols/Settlements Manuals
 - o Charge type components/determinants
 - o Charge type calculations
- Converting data/information into analysis for DSS (decisions support system)
 - o Upstream > better offers
 - o Downstream > P&L assessment for assets

11:45 am **Workshop Adjourns****Lunch on Your Own**REGISTER TODAY! CALL 303-770-8800 OR VISIT WWW.EUCI.COM

MONDAY, NOVEMBER 14, 2016 (PRE-CONFERENCE WORKSHOP CONTINUED)

INSTRUCTORS

Henry Chu

Senior Analyst – RTO Settlements & Analysis, Entergy

Henry Chu has over 20 years of experience in the Utility/Energy industry. He started his career at Bank of Montreal Data Center in computer operation. After 7 years, he joined BC Hydro's Network Computing Services. During that time, he transitioned into the BC Hydro's subsidiary POWEREX where he performed various positions regarding wholesale electricity market. After 10 years, Mr. Chu took an opportunity with MISO where he worked in Market Settlements and Market Quality where provided various Market Settlements training to Market Participants. In addition, he served as the Client Advisor during the Southern Integration into MISO by addressing ISO Markets issues. In 2014, He joined Entergy in RTO Settlements & Analysis Team Entergy where he provided several MISO Settlements and Market training. Mr. Chu has a Bachelors of Business Administration concentrating in Accounting and Management Information System from Simon Fraser University, Canada and a Masters of Business Administration from University of Phoenix.

Gina Craan

Manager – Market Training, NYISO

Gina Elizabeth Craan is the Market Training Manager for the NYISO. She and her team are responsible for educating energy industry stakeholders and policy makers on the processes and functions of the New York Energy Markets. She brings 15 years of wholesale energy industry experience, and 10 years of professional training instruction to NYISO's market training team.

Christopher Russell

Manager – Customer Settlements, NYISO

Chris Russell is the Manager of Customer Settlements for the New York Independent System Operator (NYISO). As such, he is responsible for the timely and accurate settlement of all market participant transactions. Additionally, he administers the billing and meter data challenge process and has participated in numerous dispute resolution proceedings at the NYISO as well as at the Federal Energy Regulatory Commission (FERC). Mr. Russell joined the NYISO in 2007 as Supervisor of Market Accounting and was promoted to Manager in July 2009.

Before joining the NYISO, he worked as a Fund Controller for a Venture Capital fund, as a Senior Manager for Federal Home Loan Bank of Boston, and as a Supervisor at Brown Brothers Harriman. Mr. Russell also served as an Officer in the United States Army. He earned a Master of Business Administration degree from Babson College in Wellesley, Massachusetts, and a Bachelor of Science degree in Business Administrations from Marist College in Poughkeepsie, New York. He is also a Certified Management Accountant (CMA).



"This is a unique conference that allows you to converse with all of the ISOs as well as other settlements groups."

Manager – Market Ops Accounting, Xcel Energy

POST-CONFERENCE WORKSHOP

Challenges and Lessons Learned for Implementing 5-min Settlement

WEDNESDAY, NOVEMBER 16, 2016

OVERVIEW

A very *big* change to the settlement environment in a market participant's back office department is the forthcoming requirement to settle its "real-time" energy market transactions in 5 minute increments, rather than the more customary one hour (and in some cases 15 minute) increments that have prevailed to date. This workshop will provide an in-depth orientation on what the operational changes and how they can be managed for the least disruptive transition to this accelerated and more complex process.

LEARNING OUTCOMES

- Discuss lessons learned from RTO markets that have already implemented 5-min settlement
- Consider proposed implementation plans for RTO Markets who plan to implement 5-min settlement
- Assess impacts of 5-min settlement on bid-to-bill workflow
- Identify IT infrastructure necessary to handle 5-min settlement

AGENDA

7:30 – 8:00 am **Registration and Continental Breakfast**

8:00 am– 12:00 pm **Workshop Timing**

Why Implement 5-min Settlement?

- Goals for FERC Order
- Pros and cons for implementing 5-min settlement
- Lessons learned from RTO markets who already implemented 5-min settlement (NYISO, SPP, CAISO)
- Proposed implementation plans for RTO Markets who plan to implement 5-min settlement (ISO-NE, MISO, PJM)



"A very productive conference that provided valuable information and a great opportunity to network."

Integrated Market Coordinator, Kansas City Board of Public Utilities



"Others share in your obstacles; come, hear and share solutions."

Managing Supervisor, Ameren

WEDNESDAY, NOVEMBER 16, 2016 (POST-CONFERENCE WORKSHOP CONTINUED)

Impacts of 5-min Settlement on Bid-to-Bill Workflow

- Metering requirements to support 5-min settlement
- Which real-time charge codes should be settled on an hourly basis vs 5-min basis?
- Should you settle loads on an hourly or 5-min basis?
- Should you settle bilateral transactions on an hourly, 15-min, or 5-min basis?
- Impact of 5-min settlement on tagging requirements
- Impact of 5-min settlement on real-time make-whole payments
- Should RTOs have make-whole payments for real-time price volatility when 5-min settlement is used?
- Impact of 5-min settlement on profit & loss calculations
- Impact of 5-min settlement on fuel-adjustment clause calculations

IT Infrastructure to Handle 5-min Settlement

- Impact of 5-min settlement on IT infrastructure
- What is the cost to upgrade your meter data management system to handle 5-min settlement?
- Should you upgrade or replace back-office tools to handle 5-min settlement?
- Impact of 5-min settlement on reporting requirements
- Should you upgrade or replace data warehouse and BI tools to handle 5-min settlement?

Course Review & Round-Table Discussion

INSTRUCTORS

Khai Le

Sr. Vice President, PCI

Over the past 40 years, Khai Le has conducted over 700 seminars on market-based operations, bidding strategies, portfolio optimization, and shadow settlement for utilities and ISOs worldwide. He is currently working with market participants in MISO, SPP, PJM, ISO-NE, CAISO, and ERCOT to deploy the PCI Generation Supply Management System (PCI GenManager, PCI GenTrader and PCI GenPortal) to automate their bid-to-bill workflow. Mr. Le has 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. He received his BS from Harvey Mudd College and his MS from Carnegie Mellon University. Mr. Le is a Fellow of the IEEE and a Registered Professional Engineer in Pennsylvania.

Tony Delacluyse

Senior Director, PCI

Tony Delacluyse has over 29 years of experience that includes power plant operations, origination, pricing, deregulated retail, settlements, RTO operations. After joining PCI in 2005, he managed the PCI team to develop back-office software for MISO, SPP, ERCOT, CAISO and PJM markets. Mr. Delacluyse participates in RTO market meetings, monitors the industry and FERC for market impacts and works with markets participants on planning, software, and strategy. He received both his BA and MBA from St Ambrose University.

Justin Shearer

Manager, PCI

Justin Shearer actively manages all phases of CAISO product development including analysis, design, development, testing, support and training. He received both his BA and MBA from the University of Oklahoma.

Ken Lukowski

Senior Manager, PCI

Ken Lukowski manages the deployment of the PCI GSMS suite for market participants in the US. He has over 10 years of settlements experience. He chaired the MISO Market Settlements Working group. Mr. Lukowski received his BS in Accountancy & Finance from Southern Illinois University and his MBA from Lindenwood University.

INSTRUCTIONAL METHODS

Case studies, PowerPoint presentations, and panel discussions will be used in this program.

REQUIREMENTS FOR SUCCESSFUL COMPLETION

Participants must sign in/out each day and be in attendance for the entirety of the conference to be eligible for continuing education credit.

IACET CREDITS



EUCI has been accredited as an Authorized Provider by the International Association for Continuing Education and Training (IACET). In obtaining this accreditation, EUCI has demonstrated that it complies with the AN-SI/IACET Standard which is recognized internationally as a standard of good practice. As a result of their Authorized Provider status, EUCI is authorized to offer IACET CEUs for its programs that qualify under the AN-SI/IACET Standard.

EUCI is authorized by IACET to offer 1.0 CEUs for the conference and 0.4 CEUs for each workshop.

PROCEEDINGS

A copy of the conference proceedings will be distributed to attendees at the event.

EVENT LOCATION

A room block has been reserved at the Millennium Knickerbocker Hotel, 163 E. Walton Place, Chicago, IL 60611, for the nights of November 13-15, 2016. Room rates are \$199, plus applicable tax. Call **1-312-751-8100** for reservations and mention the EUCI event to get the group rate. The cutoff date to receive the group rate is October 24, 2016 but as there are a limited number of rooms available at this rate, the room block may close sooner. Please make your reservations early.

REGISTER 3, SEND THE 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.

SPONSORSHIP OPPORTUNITIES

Do you want to drive new business through this event's powerful audience? Becoming a sponsor or exhibitor is an excellent opportunity to raise your profile before a manageably sized group of executives who make the key purchasing decisions for their businesses. There is a wide range of sponsorship opportunities available that can be customized to fit your budget and marketing objectives, including: Platinum, gold, or VIP sponsor, Reception host, Networking break host, Tabletop exhibit, Workshop sponsor, Lanyard sponsor, Luncheon host and Breakfast host. **Please contact Stephen Coury at 720-988-1228 or scoury@euci.com for more information.**

REGISTRATION INFORMATION

EVENT LOCATION

Mail Directly To:

Electric Utility Consultants, Inc. (EUCI)
4601 DTC Blvd., Ste. 800
Denver, CO 80237
OR, scan and email to: conferences@euci.com

WWW.EUCI.COM

p: 303-770-8800

f: 303-741-0849

A room block has been reserved at the Millennium Knickerbocker Hotel, 163 E. Walton Place, Chicago, IL 60611, for the nights of November 13-15, 2016. Room rates are \$199, plus applicable tax. Call **1-312-751-8100** for reservations and mention the EUCI event to get the group rate. The cutoff date to receive the group rate is October 24, 2016 but as there are a limited number of rooms available at this rate, the room block may close sooner. Please make your reservations early.

PLEASE SELECT

- ISO SETTLEMENTS SUMMIT AND BOTH WORKSHOPS:** NOVEMBER 14 - 16 2016: US \$2295, EARLY BIRD on or before OCTOBER 28, 2016: US \$2095
- ISO SETTLEMENTS SUMMIT AND ONE WORKSHOP**
 - PRE-CONFERENCE WORKSHOP: MONDAY, NOVEMBER 14, 2016: US \$1895, EARLY BIRD on or before OCTOBER 28, 2016 US \$1695
 - POST-CONFERENCE WORKSHOP: WEDNESDAY, NOVEMBER 16, 2016: US \$1895, EARLY BIRD on or before OCTOBER 28, 2016: US \$1695
- ISO SETTLEMENTS SUMMIT ONLY:** NOVEMBER 14-15, 2016: US \$1495, EARLY BIRD on or before OCTOBER 28 2016: US \$1295
- PRE-CONFERENCE WORKSHOP ONLY: MONDAY, NOVEMBER 14, 2016: US \$595, EARLY BIRD on or before OCTOBER 28, 2016 US \$495
- POST-CONFERENCE WORKSHOP ONLY: WEDNESDAY, NOVEMBER 16, 2016: US \$595, EARLY BIRD on or before OCTOBER 28, 2016: US \$495
- I'M SORRY I CANNOT ATTEND, BUT PLEASE EMAIL ME A LINK TO THE CONFERENCE PROCEEDINGS FOR US \$395

ENERGIZE WEEKLY

EUCI's Energize Weekly e-mail newsletter compiles and reports on the latest news and trends in the energy industry. Newsletter recipients also receive a different, complimentary conference presentation every week on a relevant industry topic. The presentations are selected from a massive library of more than 1,000 current presentations that EUCI has gathered during its 29 years organizing conferences.

Sign me up for Energize Weekly

How did you hear about this event? (direct e-mail, colleague, speaker(s), etc.)

Print Name

Job Title

Company

What name do you prefer on your name badge?

Address

City

State/Province

Zip/Postal Code

Country

Phone

Email

List any dietary or accessibility needs here

CREDIT CARD INFORMATION

Name on Card

Account Number

Billing Address

Billing City

Billing State

Billing Zip Code/Postal Code

Exp. Date

Security Code (last 3 digits on the back of Visa and MC or 4 digits on front of amEx)

OR Enclosed is a check for \$ _____ to cover _____ registrations.

Substitutions & Cancellations

Your registration may be transferred to a member of your organization up to 24 hours in advance of the event. Cancellations must be received on or before October 14, 2016 in order to be refunded and will be subject to a US \$195.00 processing fee per registrant. No refunds will be made after this date. Cancellations received after this date will create a credit of the tuition (less processing fee) good toward any other EUCI event. This credit will be good for six months from the cancellation date. In the event of non-attendance, all registration fees will be forfeited. In case of conference cancellation, EUCI's liability is limited to refund of the event registration fee only. For more information regarding administrative policies, such as complaints and refunds, please contact our offices at 303-770-8800. EUCI reserves the right to alter this program without prior notice.

