Technical Conference: Increasing Real-Time and Day-Ahead Market Efficiency and Enhancing Resilience through Improved Software

Agenda

AD10-12-009
June 26 – 28, 2018

Tuesday, June 26, 2018

9:00 AM	Introduction (Meeting Room 3M-2)
	Richard O'Neill, Federal Energy Regulatory Commission (*Washington, DC*)

9:15 AM	Session T1 (Meeting Room 3M-2)
	MISO R&D on Improving Market Clearing Software for Future Market Enhancements
	Yonghong Chen, Midcontinent ISO (*Carmel, IN*)
	Jessica Harrison, Midcontinent ISO (*Carmel, IN*)
	PJM Market Enhancements to Improve Market Efficiency, Reliability and Resilience
	Anthony Giacomoni, PJM Interconnection (*Audubon, PA*)
	Patricio Rocha Garrido, PJM Interconnection (*Audubon, PA*)
	Adam Keech, PJM Interconnection (*Audubon, PA*)
	Melissa Maxwell, PJM Interconnection (*Audubon, PA*)
	Cheryl Mae Velasco, PJM Interconnection (*Audubon, PA*)
	The Hidden Properties of Fast-Start Pricing
	Tongxin Zheng, ISO New England (*Holyoke, MA*)
	Feng Zhao, ISO New England (*Holyoke, MA*)
	Dane Schiro, ISO New England (*Holyoke, MA*)
	Eugene Litvinov, ISO New England (*Holyoke, MA*)

10:45 AM	Break

11:00 AM	Session T2 (Meeting Room 3M-2)
	California ISO's Day-Ahead Market Enhancements under High Renewable Penetration Paradigm
	Petar Ristanovic, California ISO (*Folsom, CA*)
	George Angelidis, California ISO (*Folsom, CA*)
	Don Tretheway, California ISO (*Folsom, CA*)
	Khaled Abdul-Rahman, California ISO (*Folsom, CA*)
	Using Market Optimization Software to Develop a MISO Multi-Day Market Forecast
	Chuck Hansen, Midcontinent ISO (*Carmel, IN*)
	Boris Gisin, PowerGEM LLC (*Clifton Park, NY*)
	James David, PowerGEM LLC (*Clifton Park, NY*)
	Shu Xu, Midcontinent ISO (*Carmel, IN*)
	Short Term Capacity Reserve Product: Need and Potential Solution Design
	Seyi Akinbode, Midcontinent ISO (*Carmel, IN*)
	Akshay Korad, Midcontinent ISO (*Carmel, IN*)
	Bill Peters, Midcontinent ISO (*Carmel, IN*)
	Kevin Vannoy, Midcontinent ISO (*Carmel, IN*)

12:30 PM	Lunch

1:45 PM	Session T3 (Meeting Room 3M-2)
	Voltage Security Constraints in SPP Markets using Generalized DC Powerflow
	Ryan Schoppe, Southwest Power Pool (*Little Rock, AR*)
	Gary Rosenwald, The Glarus Group (*Newcastle, WA*)
	Mingguo Hong, Case Western Reserve University (*Cleveland, OH*)
	Uplift Allocation of Voltage and Local Reliability Constraints
	Fengyu Wang, Midcontinent ISO (*Carmel, IN*)
	Synchrophasor-Based Emergency Generation Dispatch
	Xiaochuan Luo, ISO New England (*Holyoke, MA*)
	Eugene Litvinov, ISO New England (*Holyoke, MA*)
	Song Zhang, ISO New England (*Holyoke, MA*)

3:15 PM	Break

Tuesday, June 26, 2018

3:30 PM	Session T4 (Meeting Room 3M-2)
	Enhanced Combined Cycle Modeling - From Market Clearing Pricing to Settlements
	Congcong Wang, Midcontinent ISO (*Carmel, IN*)
	Gary Rosenwald, Glarus Group (*Seattle, WA*)
	Kevin Vannoy, Midcontinent ISO (*Carmel, IN*)
	Charles Hansen, Midcontinent ISO (*Carmel, IN*)
	Yonghong Chen, Midcontinent ISO (*Carmel, IN*)
	Jason Howard, Midcontinent ISO (*Carmel, IN*)
	Transmission Topology Optimization Applications to Increase Market and Planning Efficiency and Enhance Reliability and Resilience
	Pablo Ruiz, NewGrid, Inc. (*Boston, MA*)
	Incorporating FACTS Set Point Optimization in Day-Ahead Generation Scheduling
	Kwok Cheung, GE (*Redmond, WA*)
5:00 PM	Adjourn

Wednesday, June 27, 2018

8:45 AM	Arrive and welcome (Meeting Room 3M-2)

9:00 AM	Session W1 (Meeting Room 3M-2)

Revisiting Mixed-Integer Programming Gaps and Pricing in RTO-scale Unit Commitment Problems

> Brent Eldridge, Federal Energy Regulatory Commission (*Washington, DC*)
> Richard O'Neill, Federal Energy Regulatory Commission (*Washington, DC*)

Investment Effects of Pricing Schemes for Non-Convex Markets

> Jacob Mays, Northwestern University (*Evanston, IL*)
> Richard O'Neill, Federal Energy Regulatory Commission (*Washington, DC*)
> David Morton, Northwestern University (*Evanston, IL*)

Pricing Under Uncertainty: A Chance Constraint Approach to a Robust Competitive Equlibrium

> Yury Dvorkin, New York University (*New York, NY*)

10:30 AM	Break

10:45 AM	Session W2 (Meeting Room 3M-2)

Electricity Market Design with Renewable Energy: A Comparison of the United States and Europe

> Audun Botterud, Massachusetts Institute of Technology/Argonne National Laboratory (*Cambridge, MA*)
> Hans Auer, Technische Universität Wien (*Vienna, Austria*)

Convex Hull, IP and European Electricity Pricing in a European Power Exchanges Setting with Efficient Computation of Convex Hull Prices

> Mehdi Madani, Johns Hopkins University (*Baltimore, MD*)
> Carlos Ruiz, Universidad Carlos III de Madrid (*Madrid, Spain*)
> Sauleh Siddiqui, Johns Hopkins University (*Baltimore, MD*)
> Mathieu Van Vyve, Université catholique de Louvain (*Louvain-la-Neuve, Belgium*)

Scheduling and Pricing of Energy Storage in Electricity Markets

> Masood Parvania, University of Utah (*Salt Lake City, UT*)
> Roohallah Khatami, University of Utah (*Salt Lake City, UT*)
> Pramod Khargonekar, University of Utah (*Salt Lake City, UT*)

Wednesday, June 27, 2018

12:15 PM	Lunch

1:30 PM	Session W3-A (Meeting Room 3M-2)

Stochastic Look-Ahead Unit Commitment for Intra-day and Real-Time Management of Distributed Renewable Generation and Demand Response
Jean-Paul Watson, Sandia National Laboratories (*Albuquerque, NM*)
Roger Treinen, Nexant, Inc. (*Chandler, AZ*)
Herminio Pinto, Nexant, Inc. (*Chandler, AZ*)
Kory Hedman, Arizona State University (*Tempe, AZ*)

Data-Driven Stochastic Optimization for Power Grids Scheduling under High Wind Penetration
Wei Xie, Rensselaer Polytechnic Institute (*Troy, NY*)

Scalable Capacity Expansion for Explicit Representation of Intermittent Generation
Devon Sigler, National Renewable Energy Laboratory (*Golden, CO*)

Recent Advances in MILP Formulations for the Unit Commitment Problem
Ben Knueven, Sandia National Laboratories (*Albuquerque, NM*)
Jim Ostrowski, University of Tennessee (*Knoxville, TN*)
Jean-Paul Watson, Sandia National Laboratories (*Albuquerque, NM*)

Session W3-B (Meeting Room 3M-4)

Scalable Corrective Security-Constrained Economic Dispatch Considering Conflicting Contingencies
Yaowen Yu, ABB Enterprise Software (*San Jose, CA*)
Peter Luh, University of Connecticut (*Storrs, CT*)
Mikhail Bragin, University of Connecticut (*Storrs, CT*)

Generator Contingency Modeling in Electric Energy Markets
Nikita Singhal, Electric Power Research Institute (*Palo Alto, CA*)
Kory W. Hedman, Arizona State University (*Tempe, AZ*)

Simultaneous Economic Efficiency and Reliability Benefits from Advanced Operating Reserve Requirement Method: Case Study on the Hawaiian Electric System
Erik Ela, Electric Power Research Institute (*Palo Alto, CA*)

Preventive Power System Operation During Hurricanes
Mostafa Sahraei-Ardakani, University of Utah (*Salt Lake City, UT*)
Ge Ou, University of Utah (*Salt Lake City, UT*)

3:30 PM	Break

3:45 PM	Session W4-A (Meeting Room 3M-2)

Distributed Solution Algorithms for Security Constrained Unit Commitment in Evolving Day Ahead Electricity Markets
Jesse Holzer, Pacific Northwest National Laboratory (*Richland, WA*)
Feng Pan, Pacific Northwest National Laboratory (*Richland, WA*)
Stephen Elbert, Pacific Northwest National Laboratory (*Richland, WA*)

HIPPO - A High-Performance Computing Solver for Security Constrained Unit Commitment Problem
Feng Pan, Pacific Northwest National Laboratory (*Seattle, WA*)
Jesse Holzer, Pacific Northwest National Laboratory (*Richland, WA*)
Steve Elbert, Pacific Northwest National Laboratory (*Richland, WA*)
Yonghong Chen, Midcontinent ISO (*Carmel, IN*)
Jie Wan, GE (*Redmond, WA*)
Edward Rothberg, GUROBI (*Houston, TX*)
Yongpei Guan, University of Florida (*Gainesville, FL*)

Multi-year Detailed Nodal, Cloud-based Modeling of Economic and Environmental Impacts of the Integration of Significant Quantities of Mandated On-shore and Off-shore Renewable Resources into the Regional Electric Power Grid
Richard Tabors, Tabors Caramanis Rudkevich (*Boston, MA*)
Alex Rudkevich, Tabors Caramanis Rudkevich (*Boston, MA*)

Advanced On-line Volt/Var Control System: Design, Implementation and High Hosting Capability for Renewable Energy
Yasuyuki Tada, Hitachi, Ltd., Energy Solution Business Unit (*Tokyo, Japan*)
Hsiao-Dong Chiang, Cornell University/Bigwood Systems, Inc. (*Ithaca, NY*)

Wednesday, June 27, 2018

Session W4-B (Meeting Room 3M-4)

Modeling Nuclear Power as a Flexible Resource for the Power Grid
Zhi Zhou, Argonne National Laboratory (*Lemont, IL*)
Audun Botterud, Argonne National Laboratory (*Lemont, IL*)
Jesse Jenkins, Massachusetts Institute of Technology (*Boston, MA*)
Roberto Ponciroli, Argonne National Laboratory (*Lemont, IL*)
Francesco Ganda, Argonne National Laboratory (*Lemont, IL*)

Frequency-Optimized Security-Constrained Economic Dispatch (fSCED)
Tom Dautel, Federal Energy Regulatory Commission (*Washington, DC*)
Richard O'Neill, Federal Energy Regulatory Commission (*Washington, DC*)

Power System Optimization with an Inertia Study on the IEEE 30-Bus Test System
Sandeep Sadanandan, Kansas State University (*Arlington, VA*)

Modeling of Resilient Electricity Generation after Cascading Collapse
Thomas Popik, Foundation for Resilient Societies (*Nashua, NH*)

5:45 PM   Adjourn

Thursday, June 29, 2018

8:45 AM	Arrive and welcome (Meeting Room 3M-2)
9:00 AM	Session H1 (Meeting Room 3M-2)
	Unit Commitment of Integrated Electric and Gas Systems with an Enhanced Second-Order Cone Gas Flow Model
	Ramteen Sioshansi, The Ohio State University (*Columbus, OH*)
	Tight MIP Formulation of Transition Trajectories of Combined-Cycle Units
	Bowen Hua, University of Texas at Austin (*Austin, TX*)
	Ross Baldick, University of Texas at Austin (*Austin, TX*)
	Yonghong Chen, Midcontinent ISO (*Carmel, IN*)
	Market Restricting Policies Due to Outdated Technology
	Sergio Brignone, Vitol, Inc. (*Houston, TX*)
	Federico Corteggiano, Vitol, Inc. (*Houston, TX*)
10:30 AM	Break
10:45 AM	Session H2 (Meeting Room 3M-2)
	Integrating an Open Power Systems Data Repository and an Open Modeling Framework - DRPOWER and OMF.coop
	David Pinney, National Rural Electric Cooperative Association (*Arlington, VA*)
	Mark Rice, Pacific Northwest National Laboratory (*Richland, WA*)
	Stephen Elbert, Pacific Northwest National Laboratory (*Richland, WA*)
	Olga Kuchar, Pacific Northwest National Laboratory (*Richland, WA*)
	Laruentiu Marinovici, Pacific Northwest National Laboratory (*Richland, WA*)
	Experimental Analysis of PMU Data
	Daniel Bienstock, Columbia University (*New York, NY*)
	Michael Chertkov, Los Alamos National Laboratory (*Los Alamos, NM*)
	Improving Grid Reliability through Distributed AI and Machine Learning
	Colin Gounden, VIA Science (*Somerville, MA*)
12:15 PM	Adjourn