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

Agenda

AD10-12-010
June 25 – 27, 2019

Tuesday, June 25, 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)
	A Multi-Period Market Design for Markets with Intertemporal Constraints
	Jinye Zhao, ISO New England (*Holyoke, MA*)
	Tongxin Zheng, ISO New England (*Holyoke, MA*)
	Eugene Litvinov, ISO New England (*Holyoke, MA*)
	Exploring The Impacts of Price Formation Enhancements in PJM's Wholesale Energy Markets
	Anthony Giacomoni, PJM Interconnection (*Audubon, PA*)
	Amanda Long, PJM Interconnection (*Audubon, PA*)
	MISO R&D on Improving the Efficiency of Market Clearing Software
	Yonghong Chen, Midcontinent ISO (*Carmel, IN*)
10:45 AM	Break
11:00 AM	Session T2 (Meeting Room 3M-2)
	Implementation of Fuel, Generator Contingency, and Remedial Action Scheme Constraints to Promote Electric System Resilience
	Guillermo Bautista , California ISO (*Folsom, CA*)
	Reserve Demand Curves in Real-time Market
	Feng Zhao, ISO New England (*Holyoke, MA*)
	Eugene Litvinov, ISO New England (*Holyoke, MA*)
	Tongxin Zheng, ISO New England (*Holyoke, MA*)
	Improving MISO Real-Time Market Efficiency and Reliability through Online Stability Assessment
	Clayton Umlor, Midcontinent ISO (*Eagan, MN*)
	Raja Thappetaobula, Midcontinent ISO (*Eagan, MN*)
12:30 PM	Lunch
1:45 PM	Session T3 (Meeting Room 3M-2)
	Managing Flexibility and Uncertainty in Markets and Operations - Including Near-Term Improvements to Manage Intra-Hour Flexibility
	Congcong Wang, Midcontinent ISO (*Carmel, IN*)
	Stephen Rose, Midcontinent ISO (*Eagan, MN*)
	Long Zhao, Midcontinent ISO (*Carmel, IN*)
	Reserve Deliverability with Application to Short-Term Reserve Product
	Fengyu Wang, Midcontinent ISO (*Carmel, IN*)
	Akshay Korad, Midcontinent ISO (*Carmel, IN*)
	Yonghong Chen, Midcontinent ISO (*Carmel, IN*)
	Ryan Sutton, Midcontinent ISO (*Carmel, IN*)
	Automatic Generation Control (AGC) Enhancement for Fast-Ramping Resources
	Akshay Korad, Midcontinent ISO (*Carmel, IN*)
	Pavan Addepalle, Midcontinent ISO (*Carmel, IN*)
	Yaming Ma, Midcontinent ISO (*Carmel, IN*)
3:15 PM	Break

Tuesday, June 25, 2018

3:30 PM	Session T4 (Meeting Room 3M-2)
	Impacts of Price Formation Efforts Considering High Renewable Penetration Levels and System Resource Adequacy Targets
	Robin Hytowitz, Electric Power Research Institute (*Palo Alto, CA*)
	Bethany Frew, National Renewable Energy Laboratory (*Golden, CO*)
	Gord Stephen, National Renewable Energy Laboratory (*Golden, CO*)
	Erik Ela, Electric Power Research Institute (*Palo Alto, CA*)
	Jessica Lau, National Renewable Energy Laboratory (*Golden, CO*)
	Nikita Singhal, Electric Power Research Institute (*Palo Alto, CA*)
	Aaron Bloom, NextEra Analytics (*St. Paul, MN*)
	Market-based Resource Adequacy Assessment Framework under High Wind Penetrations
	Jonghwan Kwon, Argonne National Laboratory (*Lemont, IL*)
	Zhi Zhou, Argonne National Laboratory (*Lemont, IL*)
	Todd Levin, Argonne National Laboratory (*Lemont, IL*)
	Audun Botterud, Massachusetts Institute of Technology (*Cambridge, MA*)
	An Efficient Algorithm for Convex Hull Pricing Problems in MISO Day-Ahead Market
	Yongpei Guan, University of Florida (*Gainesville, FL*)
	Yanan Yu, University of Florida (*Gainesville, FL*)
	Yonghong Chen, Midcontinent ISO (*Carmel, IN*)
5:00 PM	Adjourn

Wednesday, June 26, 2018

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

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

Mixed Integer Programming Formulations for the Unit Commitment Problem
> Bernard Knueven, Sandia National Laboratories (*Albuquerque, NM*)
> James Ostrowski, University of Tennessee (*Knoxville, TN*)
> Jean-Paul Watson, Sandia National Laboratories (*Albuquerque, NM*)

Value of Modelling Constraints in Generation Scheduling - Towards Computationally Efficient Scheduling Proxies
> Miguel Ortega-Vazquez, Electric Power Research Institute (*Palo Alto, CA*)

New Formulation of Security Constraints for Power Systems Optimization and its Applications to Energy Exchange Pricing
> Alinson Santos Xavier, Argonne National Laboratory (*Lemont, IL*)
> Feng Qiu, Argonne National Laboratory (*Lemont, IL*)
> Santanu S. Dey, Georgia Institute of Technology (*Atlanta, GA*)

Fast Evaluation of Security Constraints in a Security Constrained Unit Commitment Algorithm
> Jesse Holzer, Pacific Northwest National Laboratory (*Richland, WA*)
> Yonghong Chen, Midcontinent ISO (*Carmel, IN*)
> Feng Pan, Pacific Northwest National Laboratory (*Richland, WA*)
> Edward Rothberg, Gurobi Optimization (*Beaverton, OR*)
> Arun Veeramany, Pacific Northwest National Laboratory (*Richland, WA*)

9:00 AM	Session W1-B (Meeting Room 3M-4)

Hybrid Storage Resources - Implications for Grid Services and Market Design
> Mark Ahlstrom, NextEra Energy Resources (*St. Paul, MN*)

Incorporating Electric Storage Resources into Wholesale Electricity Markets While Considering State of Charge Management Options
> Nikita Singhal, Electric Power Research Institute (*Palo Alto, CA*)
> Erik Ela, Electric Power Research Institute (*Palo Alto, CA*)

A Configuration Based Pumped-storage Hydro Model in MISO Day-ahead Market
> Bing Huang, University of Texas Austin (*Austin, TX*)
> Yonghong Chen, Midcontinent ISO (*Carmel, MN*)
> Ross Baldick, University of Texas Austin (*Austin, TX*)

Unlocking the Market Value of Energy Storage via Improved Economic Dispatch and Storage Control
> Bolun Xu, Massachusetts Institute of Technology (*Cambridge, MA*)
> Audun Botterud, Massachusetts Institute of Technology (*Cambridge, MA*)
> Magnus Korpas, Norwegian University of Science and Technology (*Trondheim, Norway*)
> Francis O'Sullivan, Massachusetts Institute of Technology (*Cambridge, MA*)

11:00 AM	Break

11:15 AM	Session W2 (Meeting Room 3M-2)

Ten Years Later: Rethinking Principles of Smart Architectures and Data-enabled Software
> Marija Ilic, Carnegie Mellon University (*Pittsburgh, PA*)

Simulation Modeling of Coordinated Operation of Natural Gas and Electric Markets with GECO ENELYTIX
> Aleksandr Rudkevich, Newton Energy Group LLC (*Boston, MA*)
> Anatoly Zlotnik, Los Alamos National Laboratory (*Los Alamos, NM*)
> John Goldis, Newton Energy Group LLC (*Boston, MA*)
> Russ Philbrick, Polaris Systems Optimization (*Seattle, WA*)
> Xindi Li, Tabors Carmanis Rudkevich (*Boston, MA*)
> Aleksandr Beylin, Newton Energy Group LLC (*Boston, MA*)
> Pablo A. Ruiz, Boston University (*Boston, MA*)
> Rafael Castro, Polaris System Optimization (*Seattle, WA*)
> Richard D. Tabors, Tabors Carmanis Rudkevich (*Boston, MA*)

Wednesday, June 26, 2018

12:15 PM	Lunch

2:00 PM	Session W3-A (Meeting Room 3M-2)

Learning to Solve Large-scale Security-constrained Unit Commitment Problems
> Feng Qiu, Argonne National Laboratory (*Lemont, IL*)
> Alinson Santos Xavier, Argonne National Laboratory (*Lemont, IL*)
> Shabbir Ahmed, Georgia Institute of Technology (*Atlanta, GA*)

A Decomposition and Coordination Approach for Unit Commitment with Sequential and Parallel Implementations
> Niranjan Raghunathan, University of Connecticut (*West Hartford, CT*)
> Mikhail Bragin, University of Connecticut (*Storrs, CT*)
> Bing Yan, University of Connecticut (*Storrs, CT*)
> Peter Luh, University of Connecticut (*Storrs, CT*)
> Khosrow Moslehi, ABB (*San Jose, CA*)

HIPPO: A Concurrent Optimizer for Solving Day-ahead Security Constrained Unit Commitment Problem
> Feng Pan, Pacific Northwest National Laboratory (*Richland, WA*)
> Yonghong Chen, Midcontinent ISO (*Carmel, IN*)
> Jesse Holzer, Pacific Northwest National Laboratory (*Richland, WA*)

A GPU-based Contingency Analysis Tool
> Evgeniy Goldis, Newton Energy Group LLC (*Boston, MA*)
> Andrei Kharchenko, University of Georgia (*Athens, GA*)
> Aleksandr Rudkevich, Newton Energy Group LLC (*Boston, MA*)
> Yonghong Chen, Midcontinent ISO (*Carmel, IN*)
> Fengyu Wang, Midcontinent ISO (*Carmel, IN*)
> Jessica Harrison, Midcontinent ISO (*Carmel, IN*)

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

Quantifying the Amount of Installed Flexibility in the Resource Fleet: Case Study on CAISO
> Erik Ela, Electric Power Research Insitute (*Palo Alto, CA*)
> Qin Wang, Electric Power Research Insitute (*Palo Alto, CA*)
> Clyde Loutan, California ISO (*Folsom, CA*)
> Eamonn Lannoye, Electric Power Research Institute (*Dublin, Ireland*)
> Karl Meeusen, California ISO (*Folsom, CA*)
> Mark Rothleder, California ISO (*Folsom, CA*)

Extending ISO Operational Software to Long-Term Production Cost Models
> Boris Gisin, PowerGEM LLC (*Clifton Park, NY*)
> James David, PowerGEM LLC (*Clifton Park, NY*)
> Qun Gu, PowerGEM LLC (*Clifton Park, NY*)
> Brian Thomas, PowerGEM LLC (*Clifton Park, NY*)

Toward a Resilience-focused Production Cost Modeling Capability
> Jean-Paul Watson, Sandia National Laboratories (*Albuquerque, NM*)
> Jessica Lau, National Renewable Energy Laboratory (*Golden, CA*)

Robust Solution of High Renewable Penetration Planning Cases in PS-SUGAR
> David Bromberg, Pearl Street Technologies (*Pittsburgh, PA*)
> Amritanshu Pandey, Pearl Street Technologies (*Pittsburgh, PA*)
> Hui Zheng, Pearl Street Technologies (*Pittsburgh, PA*)

4:00 PM	Adjourn

Thursday, June 27, 2018

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

9:00 AM	Session H1-A (Meeting Room 3M-2)
	GridPACK - An HPC Platform for Better Grid Efficiency and Resilience
	      Yousu Chen, Pacific Northwest National Laboratory (*Richland, WA*)
	      Bruce Palmer, Pacific Northwest National Laboratory (*Richland, WA*)
	      Zhenyu Huang, Pacific Northwest National Laboratory (*Richland, WA*)
	Grid Mind: Data-driven Autonomous Grid Dispatch and Control Based on AI
	      Di Shi, GEIRINA (*San Jose, CA*)
	      Zhiwei Wang, GEIRINA (*San Jose, CA*)
	Period Optimal Power Flow Model and its Application in Real-time Dispatch in Power Systems with High Penetration of Intermittent Power Sources
	      Zongjie Wang, Cornell University (*Ithaca, NY*)
	      Lindsay Anderson, Cornell University (*Ithaca, NY*)

9:00 AM	Session H1-B (Meeting Room 3M-3)
	Importance Sampling for Two-Stage Stochastic Economic Dispatch
	      Ignas Satkauskas, National Renewable Energy Laboratory (*Boulder, CO*)
	A Scalable Mixed-integer Decomposition Approach for Optimal Black-start and Restoration of Power Systems
	      Ignacio Aravena, Lawrence Livermore National Laboratory (*Livermore, CA*)
	      Amelia Musselman, Lawrence Livermore National Laboratory (*Livermore, CA*)
	      Georgios Patsakis, UC Berkeley (*Berkeley, CA*)
	      Deepak Rajan, UC Berkeley (*Berkeley, CA*)
	      Shmuel Oren, UC Berkeley (*Berkeley, CA*)
	Scalable Preventive Unit Commitment for Operation during Extreme Weather
	      Mostafa Sahraei-Ardakani, University of Utah (*Salt Lake City, UT*)
	      Farshad Mohammadi, University of Utah (*Salt Lake City, UT*)
	      Ge Ou, University of Utah (*Salt Lake City, UT*)
	      Zhaoxia Pu, University of Utah (*Salt Lake City, UT*)

10:30 AM	Break

10:45 AM	Session H2 (Meeting Room 3M-3)
	The ARPA-E Grid Optimization (GO) Competition: Challenge 1 and Beyond
	      Kory Hedman, US Department of Energy, ARPA-E (*Tempe, AZ*)
	      David Guarrera, Quantitative Scientific Solutions LLC (*Washington, DC*)
	      Ashley Arigoni, Quantitative Scientific Solutions LLC (*Denver, CO*)
	      Ray Duthu, Quantitative Scientific Solutions LLC (*Washington, DC*)
	Performance-based Energy Resource Feedback, Optimization, and Risk Management: PERFORM
	      Kory Hedman, US Department of Energy, ARPA-E (*Tempe, AZ*)
	      Joseph King, US Department of Energy, ARPA-E (*Washington, AZ*)
	      Ashley Arigoni, Quantitative Scientific Solutions LLC (*Denver, CO*)
	      David Guarrera, Quantitative Scientific Solutions LLC (*Washington, DC*)
	      Ray Duthu, Quantitative Scientific Solutions LLC (*Washington, DC*)
	      Mirjana Marden, US Department of Energy, ARPA-E (*Washington, DC*)
	HELICS: Co-Simulation for Better Grid Efficiency and Resilience
	      Henry Huang, Pacific Northwest National Laboratory (*Richland, WA*)
	      Liang Min, Lawrence Livermore National Laboratory (*Livermore, CA*)
	      Jason Fuller, Pacific Northwest National Laboratory (*Richland, WA*)
	      Bryan Palmintier, National Renewable Energy Laboratory (*Golden, CO*)
	      Philip Top, Lawrence Livermore National Laboratory (*Livermore, CA*)
	      Shri Abhyankar, Pacific Northwest National Laboratory (*Richland, WA*)

12:15 PM	Adjourn