

Agenda

PJM General Session – Carbon Pricing

Hyatt Regency Chesapeake Bay Resort, Cambridge, MD

May 8, 2019

9:00 a.m. **Welcome**

Chuck Dugan, Chair, Members Committee

Andy Ott, President and CEO, PJM Interconnection

9:15 a.m. **Framing the Carbon Picture**

Dallas Burtraw, Sr. Fellow, Resources for the Future

9:30 a.m. **Lessons Learned From Other Regions**

Panel moderated by Mike Borgatti, Gabel Associates

Nicole Bouchez, Ph.D., Principal Economist,
Market Design, New York ISO

Ben Grumbles, Secretary, Maryland Department of
Environment

Dallas Burtraw, Sr. Fellow, Resources for the
Future

Don Tretheway, Sr. Advisor, Market Design and
Regulatory Policy, California ISO

Dirk Forrister, President & CEO, International
Emissions Trading Association

Carbon Pricing Impact Analysis

Anthony Giacomoni, Ph.D., Sr. Market
Strategist, Advanced Analytics, PJM
Interconnection

11:00 a.m. **Closing Remarks**

Ake Almgren, Chair, PJM Board of Managers

Summary

Over the last several years, internalizing the cost of carbon in wholesale electricity markets has continued to gain the attention of a diverse group of stakeholders, regulators and public policy makers. The state of California has been internalizing the cost of carbon through its wholesale electricity markets for several years while other states have been moving forward with their own proposals to support low or zero carbon resources. Recently, PJM stakeholders approved the creation of a new stakeholder group to consider how carbon pricing could be effectuated in the PJM region, respecting the role of local jurisdictions in establishing carbon policies, and to consider analysis of market and emission implications of carbon pricing approaches. This panel will inform the audience of some of the key issues surrounding the implementation of a carbon price in wholesale electricity markets including some of the major market design and regulatory issues to consider.



Mike Borgatti – Moderator

Michael Borgatti, Vice President of RTO Services and Regulatory Affairs at Gabel Associates, has over 11 years of experience on energy and policy related issues. Mr. Borgatti leads the firm's regional power markets group and is an expert on the complex, technical operations of RTOs. He has been a leader in the development of RTO rules and is active in a number of RTO committees and working groups including those addressing energy markets, capacity markets, renewable markets, ancillary services, and transmission interconnection issues throughout the wholesale market space. Mr. Borgatti possesses specialized expertise on PJM and recently served as the Chair of PJM's Members Committee and the Vice-Chair of PJM's Liaison Committee. He is also engaged in various matters before the Federal Energy Regulatory Commission (FERC) and state energy regulatory commissions.



DALLAS BURTRAW

Senior Fellow and Darius Gaskins Chair, Resources for the Future

Education: Ph.D., Economics, Univ. of Michigan, 1989
M.P.P., Public Policy, Univ. of Michigan, 1986
B.S., Community Economic Development, Univ. of California, Davis, 1980

Positions: Darius Gaskins Senior Fellow, Resources for the Future, 2010-present
Senior Fellow, Resources for the Future, 1998-2010
Fellow, Resources for the Future, 1989-1998
Consultant to state and federal agencies, electricity companies, environmental organizations and international lending and economic assistance institutions

Current Service: Chair, California Independent Emissions Market Advisory Committee



Nicole Bouchez, Ph.D.

Nicole Bouchez is the Principal Economist, Market Design for the New York Independent System Operator (NYISO), which operates New York's high-voltage transmission system, manages the state's competitive wholesale electricity markets, and conducts comprehensive power system planning.

She has worked extensively on evaluating and designing wholesale energy and capacity markets in New York. Her recent work has focused on integrating wholesale markets with public policy by pricing carbon dioxide emissions in wholesale markets.



Dirk Forrister

Dirk Forrister is President and CEO of the International Emissions Trading Association (IETA), a non-profit business association dedicated to market-based climate policies. With 140 member companies, IETA is known globally as a thought leader in strategies to harness the power of markets to bring climate protection.

Dirk brings a long history of public and private sector engagement in energy and environmental policy. He spent a decade as Managing Director at Natsource LLC, the manager of carbon funds valued at \$1.2 billion. Earlier in his career, Mr. Forrister served as Chairman of the White House Climate Change Task Force in the Clinton Administration, and Assistant U.S. Secretary of Energy for Congressional and Public Affairs.



Ben Grumbles

Ben Grumbles is Maryland's Secretary of the Environment. He was appointed by Governor Larry Hogan and confirmed by the Maryland Senate in 2015. His duties also include serving as Chair of the Governor's Chesapeake Bay Cabinet and Chair of the Regional Greenhouse Gas Initiative and member of the Ozone Transport Commission and the Susquehanna River Basin Commission. Ben has served as President of the U.S. Water Alliance, Director of Arizona's Department of Environmental Quality, EPA Assistant Administrator for Water, and senior staffer and counsel for the Transportation and Infrastructure and Science Committees in the U.S. Congress. He's lived, worked, and played in the Chesapeake Bay watershed since 1985.



Don Tretheway

Don Tretheway is the senior advisor of market design policy at the California Independent System Operator. He is responsible for leading stakeholder initiatives to make changes to the ISO's market design. In this capacity, he has lead several major market design developments, including the creation of the Western Energy Imbalance Market, the fifteen-minute market as part of the FERC Order 764 compliance and the flexible ramping product design. He is currently leading the initiative to enhance the ISO's day-ahead market introducing a day-ahead flexible ramping product to secure sufficient resources to economically participate in the real-time market.

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You may not discuss any topics that violate, or that might appear to violate, the antitrust laws including but not limited to agreements between or among competitors regarding prices, bid and offer practices, availability of service, product design, terms of sale, division of markets, allocation of customers or any other activity that might unreasonably restrain competition. If any of these items are discussed the chair will re-direct the conversation. If the conversation still persists, parties will be asked to leave the meeting or the meeting will be adjourned.

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