Agenda

## PJM General Session Global Events and the Impacts on the Grid

**PJM Conference & Training Center, Audubon, PA**

May 17, 2022 | 2:00 – 4:30 p.m. (EDT)

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| 2:00 p.m. | Welcome  Erik Heinle, Chair, Members Committee |
| 2:10 p.m. | Setting the Stage  Manu Asthana,President & CEO, PJM Interconnection |
| 2:20 p.m. | Introduction of Panelists  Mark Takahashi, Chair, PJM Board of Managers |
| 2:25 p.m. | Panelists Opening Remarks  **Energy Crisis** **–** Ben Hertz-Shargel, Ph.D., Senior Fellow, Atlantic Council  **Decarbonization & Electrification –** Karen Palmer, Ph.D., Senior Fellow, Resources for the Future  **Policy Makers & Global Supply Chain –** John Drake, Vice President, Supply Chain Policy, U.S. Chamber of Commerce  **Cybersecurity –** Paul Stockton, Ph.D., Paul N Stockton LLC |
| 3:25 p.m. | Panel Discussion  Panel moderated by Mark Takahashi, Chair, PJM Board of Managers |
| 4:25 p.m. | Closing Remarks  Mark Takahashi, Chair, PJM Board of Managers |

Summary & Biographies

Global events such as COVID-19 and the war in the Ukraine have an impact on the power industry globally as well as domestically. This session will explore the impacts of global events in the context of energy crisis, decarbonization and electrification, policy makers and the global supply chain, and cybersecurity.

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| Ben Hertz-Shargel, Ph.D. Nonresident Senior Fellow, Atlantic Council Global Energy Center; Global Head of Grid Edge, Wood Mackenzie |  |
| Ben Hertz-Shargel is Global Head of Grid Edge at Wood Mackenzie, where he leads research across electrification, grid digitalization and decentralization, distributed energy resources, and demand flexibility. He is a Nonresident Senior Fellow at the Atlantic Council Global Energy Center and serves on the external Advisory Committee of the Alfred P. Sloan Foundation’s Energy and Environment Program.  Ben came to Wood Mackenzie from Rhythm, a retail clean energy provider, where he was Head of Data Science and Demand Management. Prior to that Ben was Vice President, Advanced Grid Services and Analytics at EnergyHub, where he was responsible for analytics within the company’s distributed energy resource management system (DERMS) and energy market operations.  Ben is an expert on the intersection between advanced energy technology and energy markets, contributing to reports on the digitalization and decarbonization of the power system published by the Atlantic Council and the Council on Foreign Relations. He holds a B.A. in Computer Science from Northwestern, an M.S. in Mathematics from the Courant Institute at New York University, and a Ph.D. in Mathematics from UCLA. | |

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| Karen Palmer, Ph.D. Senior Fellow; Director, Electric Power Program, Resources for the Future |  |
| Karen Palmer is a Senior Fellow at Resources for the Future and an expert on the economics of environmental, climate and public utility regulation of the electric power sector. Her work seeks to improve the design of environmental and technology regulations in the sector and the development of new institutions to help guide the ongoing transition of the electricity sector. To these ends, she explores climate policy design, analyzes efficient ways to promote use of renewable and other clean sources of electricity, and investigates new market designs, new approaches to electricity pricing and regulatory reforms to pave the way for  long-term de-carbonization of electricity supply and electrification of the energy economy.  In the 1990s, Dr. Palmer spent six months as a visiting economist in the Office of Economic Policy at the Federal Energy Regulatory Commission where she worked on wholesale market design in the nascent ISO markets. She has served on three National Academies study panels, including one on the future of electricity from renewables and one on the future of electric power in the US. She is President of the Association of Environmental and Resource Economists (AERE) and serves on the Environmental Advisory Council to the New York ISO and on the Future Power Market Forum Advisory Group. She is the recipient of the Public Utility Research Center’s 2015 Distinguished Service Award and was elected as an AERE Fellow in 2018. Her published papers have appeared in many academic journals including the American Economic Review, the RAND Journal of Economics, The Journal of Political Economy and The Journal of Environmental Economics and Management.  Education: PhD in economics, Boston College, 1990, BA in economics, Brandeis University, 1981 | |

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| John Drake Vice President, Transportation, Infrastructure, and Supply Chain Policy, US Chamber of Commerce |  |
| John Drake is vice president for transportation, infrastructure, supply chain policy at the U.S. Chamber of Commerce, the world’s largest business advocacy organization. In his role, Drake is responsible for representing the business community on transportation, infrastructure, and supply chain issues before Congress, the administration, the media, the business community, and other stakeholders. Drake is also a member of the Commercial Customs Operations Advisory Committee, which advises the U.S. Customs and Border Protection on improvements to U.S. trade.  Drake comes to the Chamber from Amazon, where he was a senior manager for public policy. He coordinated segments of Amazon’s business with regulators at the Department of Transportation, the Environmental Protection Agency, and Congress.  Prior to Amazon, Drake was a senior appointee at the Department of Transportation. There he led the government affairs office of the Federal Motor Carrier Safety Administration, served as a deputy assistant secretary for transportation policy, and was deputy administrator to the Pipeline and Hazardous Materials Safety Administration. He also spent nearly 10 years on Capitol Hill, including as a professional staff member on the Senate Commerce, Science, and Transportation and the House Transportation and Infrastructure committees. Earlier, he was the American Trucking Associations’ top representative to the Senate.  Drake holds a bachelor’s degree in philosophy from the University of California, Santa Cruz. He lives in Alexandria, Virginia, with his wife and two children. | |

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| Paul Stockton, Ph.D. Paul N Stockton LLC |  |
| Paul Stockton helps private sector and government leaders meet emerging challenges in infrastructure resilience, cybersecurity, and strategic planning. Dr. Stockton’s innovative approach to anticipating and resolving such challenges reflects his own leadership expertise and analytic achievements, and passion for tackling the most difficult and consequential security problems confronting our nation.  Dr. Stockton’s service as Assistant Secretary of Defense for Homeland Defense for President Barack Obama put him on his current path of support to industry and government. As ASD, he was responsible for assuring the Defense Department could perform its critical missions, even if adversaries launched cyberattacks to disrupt the flow of electricity on which military bases and operations depend. To build resilience against such threats, he developed unprecedented partnerships with electric utilities, regulators, and the Department of Energy (DOE). Dr. Stockton also led the Department’s response to Superstorm Sandy and other natural catastrophes that sparked cascading failures across infrastructure sectors. As he left office, Dr. Stockton decided that building resilience to increasingly severe natural and manmade threats should become his life’s work. After leaving the Pentagon in 2013, Dr. Stockton served as Managing Director of Sonecon, LLC, a security and economic advisory firm in Washington, D.C. He now leads Paul N Stockton LLC and lives in  Santa Fe, New Mexico. | |

***Anti-trust:***

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.

***Code of Conduct:***

As a mandatory condition of attendance at today's meeting, attendees agree to adhere to the PJM Code of Conduct as detailed in PJM Manual M-34 section 4.5, including, but not limited to, participants' responsibilities and rules regarding the dissemination of meeting discussion and materials.

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