

WI PSC/DOE ENERGY STORAGE WEBINAR SERIES:

Energy Storage Economics

May 12, 2021 10:00 AM - 12:30 PM (CT)

Agenda & Speaker Biographies

Presented by Public Service Commission of Wisconsin,
U.S. DOE Office of Electricity Energy Storage Program,
and Sandia National Labs

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Meeting will be open ½ hour early so you can test your connections

Energy storage is the key to unleashing the power of renewables, relieving generation, transmission, and distribution demands, and hastening the energy transition to a decarbonized future. Public Service Commission of Wisconsin Commissioners and Staff are invited to participate in a series of energy storage webinars presented in collaboration with US DOE Office of Electricity Energy Storage Program and Sandia National Laboratories. Experts from the national labs, regional agencies and other organizations and institutions will provide content, with time for discussion and questions.

May 12, 2021 - Energy Storage Economics

10:00 - 10:10	Introductory Comments Dr. Imre Gyuk, Director, DOE Office of Electricity Energy Storage (ES) Program
10:10 - 10:40	Introduction to Energy Storage Benefit Cost Analysis Dr. Ray Byrne, Sandia National Laboratories (SNL)
10:40 - 11:10	Energy Storage Benefit Cost Analysis in the United States Will McNamara, Sandia National Laboratories (SNL)
11:10 - 11:20	Q&A/Discussion
11:20 - 12:20	Energy Storage Economics Modeling for Value Stacking Patrick Balducci, Argonne National Laboratory (ANL)
12:20 - 12:30	Q&A/Discussion



U.S. DEPARTMENT OF
ENERGY



Speaker Biographies



After taking a B.S. from Fordham University, Dr. Imre Gyuk did graduate work at Brown University on Superconductivity. Having received a Ph.D. in Theoretical Particle Physics from Purdue University he became a Research Associate at Syracuse. As an Assistant Professor he taught Physics, Civil Engineering, and Environmental Architecture at the University of Wisconsin. Dr. Gyuk became an Associate Professor in the Department of Physics at Kuwait University where he became interested in issues of sustainability. Dr. Gyuk joined the Department of Energy to manage the Thermal and Physical Storage program. For the past two decades he has directed the Electrical Energy Storage research program in the Office of Electricity, developing a wide portfolio of storage technologies for a broad spectrum of applications. He supervised the \$185M ARRA stimulus funding for Grid Scale Energy Storage Demonstrations and is now partnering with the States on numerous storage projects for grid resilience. His work has led to 12 R&D 100 awards, two EPA Green Chemistry Challenge Awards, and Lifetime Achievement Awards from ESA and NAATBatt. He is internationally recognized as a leader in the energy storage field.



Raymond Byrne is manager of the Electric Power System Research department at Sandia National Laboratories, where he has been employed since 1989. He holds a BS in electrical engineering from the University of Virginia, an MS in electrical engineering from the University of Colorado, and a PhD in electrical engineering from the University of New Mexico. He also completed an MS in financial mathematics (financial engineering) at the University of Chicago. Previously, he was a distinguished member of the technical staff, which is limited to a maximum of 10 percent of the engineering staff at Sandia. Awards include 2001 Time magazine invention of the year in robotics, the Prize Paper award at the 2016 IEEE Power and Energy Society General Meeting, and the IEEE Millennium medal. Byrne was elevated to IEEE Fellow in 2017 for contributions to miniature robotics and grid integration of energy storage.



Will McNamara serves as Grid Energy Storage Policy Analyst for Sandia National Laboratories with a focus on energy storage policy development at the federal and state levels. Will has spent his entire 23-year career in the energy and utilities industry with a concentration on regulatory and legislative policy. He has served as a lobbyist in California and has represented major utilities across the U.S. in numerous jurisdictions in proceedings pertaining to integrated resource planning, procurement, cost recovery, rate design, and the development of policymaking best practices. Will's areas of subject matter expertise, in addition to energy storage policy, include distributed energy resources, AMI/smart grid, renewables, and competitive retail markets.



Patrick Balducci is the Manager of the Power Systems and Markets Research Group in the Center for Energy, Environmental, and Economic Systems Analysis at Argonne National Laboratory. Prior to joining Argonne, Patrick served as a Chief Economist at the Pacific Northwest National Laboratory (PNNL), where he served for nearly 20 years. At PNNL, he led the energy storage analytics team where his research focused on storage valuation, integration, performance characterization, and control systems. In this role, he led research efforts evaluating the benefits of 1.6 GW / 18 GWh in energy storage capacity at 16 sites across the U.S. He also led efforts to enhance economic assessment tools for the U.S. Department of Energy. Patrick serves on the Board of Directors of the Pacific Northwest Regional Economics Conference. He holds a BS in Economics from Lewis and Clark College, where he graduated with honors, and an MSc in Applied Environmental Economics from the University of London, Imperial College of London.