

National Association of Regulatory Utility Commissioners

Center for Partnership and Innovation

[Innovation Webinar](#) – Emerging Possibilities in Bulk Energy Storage

October 22, 2020

Description:

Currently, many new storage devices, particularly batteries, are built to support peak load. However, projects are emerging that will provide energy storage support for the bulk energy system. Commissions face decisions that impact seasonal balancing, resource adequacy, load firming, and other long-term planning. On this webinar, we will discuss emerging technical possibilities for providing storage support to the bulk energy system, featuring takeaways from an upcoming 1-MW, 150-hour aqueous battery pilot project with Great River Energy and Form Energy. Greg Padden, Director of Resource Planning and Markets at Great River Energy will discuss their decision-making on conducting the pilot project. Additionally, regulatory considerations and market barriers for bulk energy storage will be highlighted by Jason Houck, Policy and Regulatory Affairs Lead at Form Energy. The panel will open with recent research from the National Renewable Energy Laboratory, presented by Josh Eichman, on the value and cost-competitiveness of seasonal energy storage technologies for the integration of wind and solar. To close, Heidi Ratz, U.S. Electricity Markets Manager at the World Resources Institute, will discuss policy considerations for the role of long-duration storage. This webinar will be moderated by Chairman Philip L. Bartlett II, Maine.

Moderator and Speaker Biographies:

Philip L. Bartlett II, Chairman



Philip L. Bartlett II, J.D., was appointed to the Maine Public Utilities Commission in June 2019 by Governor Janet Mills. Prior to his appointment, he practiced law with Scaccia, Bartlett & Chabot. He also served in the Maine Senate from 2004 to 2012 and was elected by his peers to serve as Senate Majority Leader from 2008 to 2010. Bartlett chaired the Energy, Utilities and Technology Committee as well as the Joint Select Committee on Maine's Energy Future and he served on the Government Oversight Committee, Natural Resources Committee and Labor Committee. He taught micro and macroeconomics at the collegiate level. Chairman Bartlett holds a juris doctorate degree from Harvard Law School. He completed his undergraduate work at Tufts University, where he graduated Summa Cum Laude majoring in Economics and Political Science. His term expires in March 2025.

Josh Eichman



Josh Eichman has over a decade of research experience in the energy system modeling and analytics area. His interests focus on better optimizing the use of current and emerging energy technologies to support high renewable electricity and gas grids. In his current role at the National Renewable Energy Laboratory he is exploring planning and operation of grid systems, technoeconomic valuation and integration of renewable generation, energy storage, demand response and electric transportation into the electricity and natural gas networks. Prior to his position at NREL Josh participated in the Department of Energy's EERE Postdoctoral Fellowship program. Josh received his B.S. degree from Clemson University in mechanical engineering and his M.S. and Ph.D. degrees from the University of California, Irvine in mechanical engineering, where his research focused on electric grid planning and operations.

Greg Padden



Greg Padden is the Director of Resource Planning and Markets for Great River Energy, a generation and transmission cooperative located in Maple Grove, Minnesota. His responsibilities include leadership and strategic direction of resource and market hedging portfolios to serve member needs, state regulatory affairs, and compliance with MISO market and energy policy requirements including resource adequacy and renewable energy. Greg has over 25 years' experience in the energy field including previous positions at Target Corporation, Xcel Energy, and the U.S. Navy. Greg is a Certified Energy Manager (CEM), a former naval surface warfare officer, and he received his B.A. degree in Math and a M.B.A. degree in Management from the University of St. Thomas in Minnesota.

Jason Houck



Jason Houck is the policy and regulatory affairs lead at Form Energy, a venture-backed startup working to develop breakthrough low cost, long duration energy storage solutions that will enable the electric system to be 100% renewably powered. Prior to joining Form Energy, Jason was an energy advisor to Commissioner Liane Randolph at the California Public Utilities Commission, where he helped establish the CPUC's integrated resource planning process to achieve California's electric sector greenhouse gas reduction goals. In earlier roles at the CPUC, Jason led the agency's efforts to implement California's greenhouse gas cap-and-trade program in the electric and natural gas sectors in coordination with the California Air Resources Board. Jason holds a master's in

energy and environmental policy from the University of Delaware and a bachelor's in civil engineering with concentrations in architecture and visual art from Princeton University.

Heidi Bishop Ratz



Heidi Bishop Ratz is the Manager, U.S. Electricity Markets, working across the Energy and Climate programs at WRI. She provides project management, partner engagement and research to drive the transition to a low-carbon economy in the U.S. This involves research and analysis to support WRI's existing and emerging U.S. energy initiatives related to deep decarbonization, electricity market design, innovative utility regulatory policy, and/or promotion of zero- and low-carbon energy, demand response, energy storage and energy efficiency.

Prior to joining WRI, Heidi worked at The Brattle Group where she specialized in energy policy research and the development of publications for her firm's electric retail practice. She worked on a variety of client projects with a focus on new business models for electric utilities, "Utility of the Future" developments, performance-based regulation, energy storage, and energy efficiency.

Heid holds a B.A. in Art History and an MBA from Salisbury University. She also has a Masters of Public Administration - Policy Track in Environmental Policy from University of Maryland. In her spare time she volunteers with organizations furthering art or environmental missions and creates wood-cut prints.