

NM SMART Grid Center Webinar Series

Carrots, Sticks and Other "Smart" Tricks in Making Energy Consumption Smarter

Presenter: Seth Blumsack, Professor of Energy and Environmental Economics and International Affairs, Penn State University

Date of Webinar: Wednesday, September 23, 2020

Time: Noon – 1:00 PM MT

Abstract

Capturing human behavior in engineering models is challenging, in part because humans themselves are challenging. This talk will discuss a series of pilot experiments run with utilities in Vermont, the goals of which were to understand how investments in a smarter grid—primarily advanced metering and distribution systems—could help residential customers conserve energy during peak demand periods. Quantitative and qualitative data from this experiment revealed substantial randomness in the response of consumers to time-varying electricity prices, consumers exhibited preferences over rate structures that did not align with conventional views of economic costs or rewards, and that consumers place a very different value proposition over advanced distribution system investments than utilities might. The lessons from these experiments are that people need technology to make smarter energy consumption decisions, and that the promise of monetary gains may make energy consumption decisions harder rather than easier.

Speaker Bio

Seth Blumsack is Professor of Energy and Environmental Economics and International Affairs in Energy and Minerals Engineering. He is also on the External Faculty of the Santa Fe Institute. Dr. Blumsack's research centers on the electricity and natural gas industries; environmental management related to energy and infrastructure; resilience of energy infrastructure; regulation and deregulation in network industries; network science; risk analysis; and managing complex infrastructure systems. He has been studying the electric power industry through academic and consulting affiliations for more than fifteen years. He has authored or co-authored more than fifty scientific papers; book chapters; and articles in industry and popular press, with research funding from the U.S. National Science Foundation, Department of Energy, Environmental Protection Agency, and private industry. He has consulted with the American Public Power Association, Bayer Materials, the Congressional Research Service, the Consortium for Risk Assessment and Stakeholder Participation, the National Renewable Energy Laboratory, the Idaho National Laboratory, the U.S. Department of Energy, the U.S. Environmental Protection Agency and numerous electric utilities and State Public Utility Commissions.