



PSERC WEBINAR

Data-Enabled Modern Resource Management: From Risk Management to Socially-aware Solutions

Mojdeh Khorsand Hedman

Arizona State University

Distributed energy resources (DERs) and residential prosumers (i.e., a consumer and producer in one) play critical roles in smart grids. To date, smart grid design has largely followed a technology-centric track with minor consideration of socioeconomically diverse individuals and social structures even when the inclusion of DERs goes down to the grid edge and the residential customer, not structured firms. Analysis of customers' behavior has been classified to the domain of behavioral economics in research communities. Communication infrastructure, data, smart devices, smart home energy management systems, and recent advances in artificial intelligence empower characterizing prosumers' behaviors to enable design of socially-aware engineering solutions without modeling the behavior itself. This webinar discusses the concept of socially-aware engineering solutions. Novel methodologies, based on machine learning, will be presented to categorize and aggregate customers with similar characteristics and behavior to achieve predictable responses to grid services. Such prediction and analysis empower power system operators to utilize available capacity and flexibility of DERs in order to improve operational efficiency.

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Mojdeh Khorsand Hedman is an assistant professor in the School of Electrical, Computer, and Energy Engineering at Arizona State University. She received her PhD, MSc, and BSc degrees in power and energy system engineering from Arizona State University, Iran University of Science and Technology, and University of Mazandaran respectively. Her research expertise includes power systems operations and planning, renewable energy integration, application of artificial intelligence for energy systems, energy and society, smart cities, transient stability studies, protection systems, power flow control technologies, stochastic optimization, and electric energy markets. She has published several journal and conference papers in these areas.

