



Distribution Systems and Planning Training for Western States

May 2-3, 2018

PRESENTER BIOS

Michael Coddington is Principal Engineer and Principal Investigator at National Renewable Energy Laboratory (NREL). Before coming to NREL in 2007, Michael spent 19 years working in the electric utility industry. His work at NREL has focused on the integration of distributed energy resources with the electric distribution grid, including interconnection of high penetrations of solar PV systems. He has supported and led various standards and codes activities that are related to the interconnection of distributed energy resources. Michael received his Electrical Engineering degree from Colorado State University and is a licensed master electrician and licensed electrical contractor.

Joe Eto is a Staff Scientist at Lawrence Berkeley National Laboratory (Berkeley Lab), in the Electricity Markets and Policy Group and Grid Integration Group. Among other things, Joe has spent the past 15+ years conducting research on reliability metrics and trends, and on the economic value of reliability to electricity customers. Joe has been a long-time contributor to NARUC and state public utility commission (PUC) activities. In 1988, he co-authored NARUC's Handbook on Least Cost Utility Planning, and in the 1990s he organized yearly training seminars for state PUC staff on technical aspects of utility integrated resource plans.

Lavelle Freeman is a Technical Director in GE's Energy Consulting group. He leads activities related to distribution planning, engineering, systems analysis, DER/microgrid applications and grid modernization. He also manages the DSTAR consortium (Distribution System Testing, Application and Research, www.dstar.org), a group of utilities in North America that fund distribution R&D of common interest. Previously, Lavelle spent several years in R&D and systems consulting at ABB. He has an M.S. in Power Engineering from the University of North Carolina at Charlotte and an M.S. in Computer Engineering from North Carolina State University.

Dr. Debra Lew has been a Technical Director at GE Energy Consulting since 2015, focusing on utility integration of wind, solar and distributed energy resources. Previously, she spent 16 years at NREL, where she initiated and led the Western Wind and Solar Integration Study, which examined impacts of high penetrations of wind and solar in the Western Interconnection. In 2009-2010, she was seconded to the Hawaiian Electric Company to work on integrating high levels of wind and solar in Hawaii. She has a B.S. from MIT in Electrical Engineering and Physics and a Ph.D. from Stanford in Applied Physics.

Dr. Barry Mather has been with the Power Systems Engineering Center at NREL since 2010. Until 2015, he led a project focusing on the technical impacts of the integration of high penetrations of solar PV in Southern California Edison's service territory and authored the *High-Penetration PV Grid Integration Handbook for Distribution Engineers*. He currently leads a group of about 20 researchers focused on power electronics, system-level control, standards, and national- and state-level interconnection issues related to the integration of renewable energy sources at ever higher levels. He received a Ph.D. in electrical engineering from the University of Colorado, Boulder.

Dr. Andrew Mills is a Research Scientist in the Electricity Markets and Policy Group at Berkeley Lab. Andrew conducts research on the integration of variable generation into the electric power system, evaluating the costs, benefits, and institutional needs of renewable energy transmission and other supporting infrastructure. Andrew has a Ph.D. in Energy and Resources from University of California, Berkeley and a B.S. in Mechanical Engineering from Illinois Institute of Technology.

Joe Paladino serves as Senior Advisor in the U.S. Department of Energy's Office of Electricity Delivery and Energy Reliability where he oversees communications and analysis efforts for smart grid projects. He has worked at DOE for over 19 years in programs involving nuclear waste management, energy-efficient buildings and electric grid modernization. His particular interest is in the advancement and commercialization of technology. Before joining DOE, he worked for over 10 years in the private sector including marketing, sales and technology development at Westinghouse Electric Corporation. He has an undergraduate degree in Biology from Middlebury College and a graduate degree in Civil Engineering from the University of Pittsburgh.

Dr. Kevin P. Schneider is a Principal Research Engineer at Pacific Northwest National Laboratory (PNNL), working at the Battelle Seattle Research Center. He received his B.S. in Physics and M.S. and Ph.D. degrees in Electrical Engineering from the University of Washington. His main areas of research are distribution system analysis and power system operations. Kevin is an Adjunct Faculty member at Washington State University, an Affiliate Associate Professor at University of Washington, and a licensed Professional Engineer in Washington state. He is the past Chair of IEEE's Distribution System Analysis Subcommittee and the current Vice Chair of the Analytics Methods for Power Systems Committee.

Lisa Schwartz is Deputy Leader of the Electricity Markets and Policy Group at Berkeley Lab. She manages the energy efficiency team, utility regulation projects, and training for PUCs on distribution system planning. Previously, she was Director of the Oregon Department of Energy, where earlier in her career she was a Senior Policy Analyst. At the Oregon Public Utility Commission for seven years, she led staff work on resource planning and procurement, demand response, and distributed and renewable energy resources. She also was a Senior Associate with the Regulatory Assistance Project, providing assistance to government officials on energy issues.

Dr. Emma Stewart is Deputy Associate Program Leader for the Infrastructure Systems, Cyber and Infrastructure Resilience Program and serves as Distribution System Lead at Lawrence Livermore National Laboratory. Before joining Lawrence Livermore in March, she worked at Berkeley Lab for several years, including in the area of distribution measurement and analysis techniques for smart grid applications. Previously, Emma was a visiting researcher at Sandia National Laboratories and a Power Systems Engineer at BEW Engineering (now DNV KEMA). Emma led distribution modeling and analysis and high renewable penetration studies for customers such as Hawaiian Electric Companies and Sacramento Municipal Utilities District, developing methods for quantifying the impacts of high solar PV penetration on feeders. Emma holds a degree in Electrical and Mechanical Engineering from University of Strathclyde and a Ph.D. in Electrical Engineering.

Jeremy Twitchell is an energy research analyst at PNNL, where he focuses on energy storage and distribution system planning. Prior to joining PNNL, he was an energy policy advisor at the Washington Utilities and Transportation Commission, where he led staff development of a policy statement on the role of energy storage in utility resource planning and a forthcoming distribution planning rule. He also drafted a report for the Washington State Legislature on best practices in distribution planning and has provided rate case testimony on rate design and resource acquisition.