

U.S. Department of Energy Clean Energy Innovator Fellows Training

Integrated Distribution System Planning
November 14, 2024



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Agenda

- Welcome – *Lisa Schwartz, Berkeley Lab* (2:00-2:05 ET)
- Integrated Distribution System Planning overview – *Lisa Schwartz* (2:05-2:30 ET)
- Forecasting loads and distributed energy resources (DERs) – *Julieta Giraldez, Electric Power Engineers* (2:30-3:00 ET)
- DER planning – *Cody Davis, Electric Power Engineers* (3:00-3:30 ET)
***Break (3:30-3:40 ET)
- Virtual power plants – *Natalie Mims Frick, Berkeley Lab* (3:40-4:00 ET)
- Identifying grid needs and evaluating investment options – *Samir Succar, ICF* (4:00-4:30 ET)
- Data, metrics and analyses that states can ask utilities for – *Sean Murphy, Berkeley Lab* (4:30-5:00 ET)

Q&A follows each section.

Enter your questions in the chat box at any time.

Slides are posted [here](#). A recording will be posted at this site soon.



Today's Trainers (1)

- **Lisa Schwartz** is a senior Energy Policy Researcher in Berkeley Lab's Energy Markets and Policy Department. She directs work spanning integrated distribution system planning, resilience planning, utility regulation, and state energy policy. She received the 2018 Mary Kilmarx award from the National Association of Regulatory Utility Commissioners, which recognizes "individuals who have gone above and beyond in the name of good governance, clean energy, and the environment." Before joining the lab, Lisa 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, she was staff lead on resource planning and procurement, DERs and renewable energy resources. She also served as a Senior Associate at the Regulatory Assistance Project and Assistant Administrator of Oregon State University's Extension Energy Program.
- **Dr. Julieta Giraldez** is Director of Integrated Grid Planning at Electric Power Engineers. Before joining the firm, she was a Principal of Customer Solutions at Kevala. She worked for a decade at the National Renewable Energy Laboratory, where she led smart grid and grid integration projects addressing emerging technologies such as PV, energy storage, and microgrids in distribution systems. She holds a Bachelor's degree from the Polytechnic University of Madrid (Spain) in Technical Mining Engineering, a Master's degree in Electrical Engineering from Colorado School of Mines, and a Ph.D. in Systems Engineering from Colorado State University.
- **Cody Davis** is Senior Manager, Distribution & Grid Modernization, at Electric Power Engineers. A power systems engineer, he focuses on distribution system planning and integration of DERs on the distribution system. He works with a wide variety of utilities and stakeholders on complex regulatory issues and has authored reports and testimony filed in several states on smart inverter impacts and modernization of distribution planning and operations. Previously, he served as an engineer at Ameren Illinois in the DER Integration & Strategies and Regional Engineering departments. He holds a B.S. in Electrical Engineering from Southern Illinois University.
- **Natalie Mims Frick** is a Deputy Department Leader and Energy Policy Researcher in Berkeley Lab's Energy Markets and Policy Department. She conducts and manages research and technical assistance for states on energy efficiency and DER policies, regulations, and programs and grid planning. Before joining the lab, Natalie was a consultant on demand-side management regulatory proceedings. She also served as an Energy Efficiency Director at the Southern Alliance for Clean Energy and a Senior Consultant at Rocky Mountain Institute. Natalie holds a Bachelor of Arts in English and Political Science from Pennsylvania State University and a Master of Studies in Environmental Law from Vermont Law School.



Today's Trainers (2)

- **Dr. Samir Succar** is a Senior Director in ICF's utility consulting practice. His work focuses on distribution system planning, grid modernization strategy, and DER integration. He works with clients to evaluate the impacts of DERs and implications for utility business models and system planning processes. His work also includes distribution system operations and aspects of DER aggregation, optimization, and orchestration. Samir's work with the U.S. Department of Energy includes participating in the NARUC-NASEO Task Force on Comprehensive Electricity Planning, the Transmission-Distribution-Customer Operational Coordination initiative, the NARUC Utility Data Sharing Collaborative, integrated distribution planning studies, and state technical assistance. He has a B.A. in Physics from Oberlin College and a Ph.D. in Electrical Engineering from Princeton University.
- **Sean Murphy** is an Energy Policy Researcher in the Energy Markets and Policy Department at Berkeley Lab. Sean's research focuses on the policy and economics of DERs and regulated electric utilities, with a focus on energy efficiency, demand flexibility, and building electrification. Before joining the Lab, he studied the urban photovoltaic potential in India as a visiting researcher at CEPT University. He also worked on energy efficiency policy and evaluation at National Grid, where he developed benefit-cost models, managed program evaluations, and participated in regulatory proceedings. Sean holds a B.S. in Environmental Engineering from Johns Hopkins University and a Master of Public Policy from U.C. Berkeley's Goldman School of Public Policy.



Upcoming Trainings for Clean Energy Innovator Fellows

□ Dec. 19 – **Transportation Electrification**

Register [here](#)

- ▣ How EV loads differ from other types of loads
- ▣ Policy, technology, and market forces driving EV loads
- ▣ How rates and managed charging shape EV loads
- ▣ Grid impacts of EV charging
- ▣ Planning and financing grid upgrades to support EV charging
- ▣ EV rate design — policy objectives, design elements, current experience, and customer response

Presenters: Andy Satchwell, Berkeley Lab, and Nancy Ryan, NER Consulting (former California PUC Commissioner)

□ Additional trainings planned for CY25

- ▣ Building electrification
- ▣ Equity
- ▣ What National Labs do and how to access lab research and technical assistance

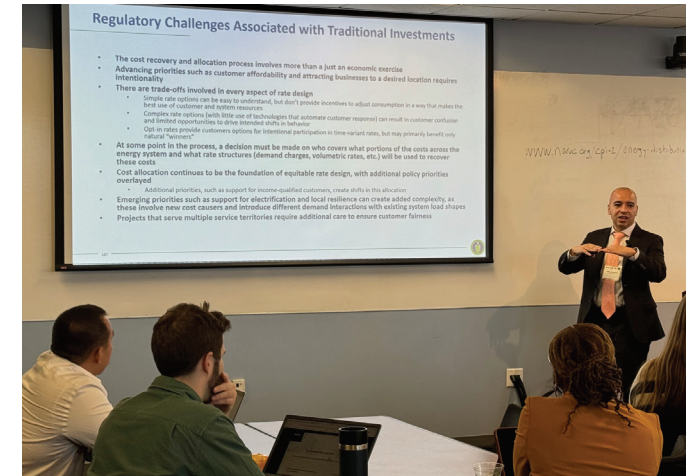
All trainings from 2–5 p.m. Eastern



In-person training on Integrated Distribution System Planning 2.0: Planning for Electrification and Distributed Energy Resources

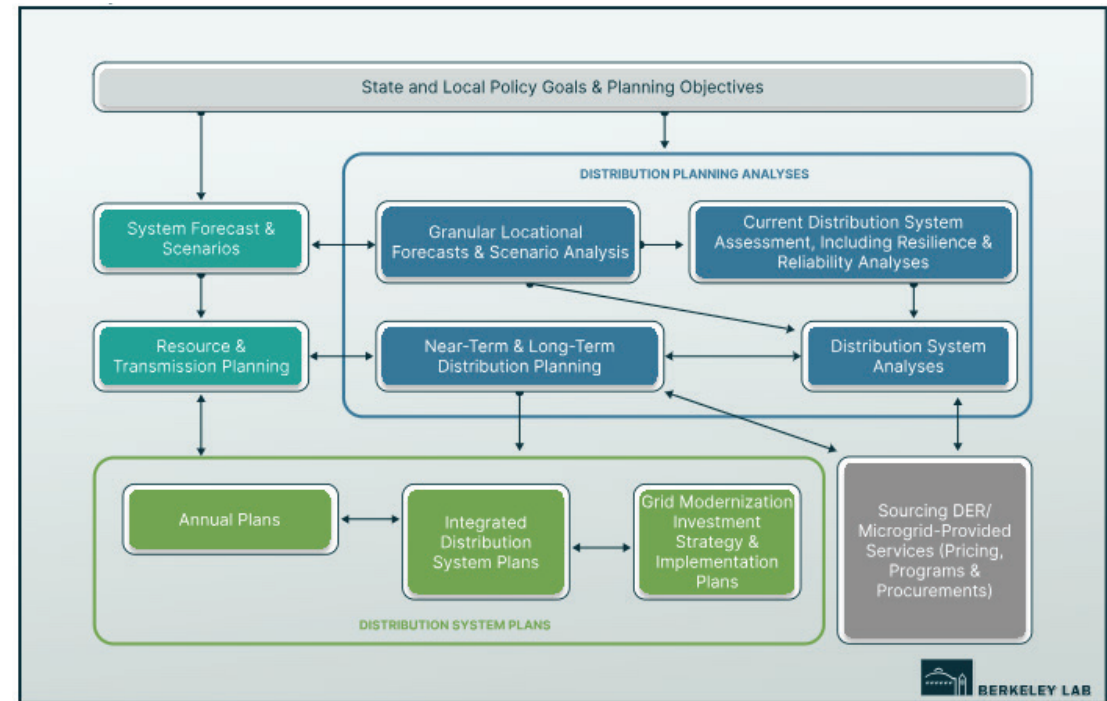
- Hosted by NARUC, NASEO and Berkeley Lab, funded by USDOE
 - **Limited travel stipends available.** Reach out before making travel arrangements:
 - PUCs and utility consumer offices - Jessica Diaz (jdiaz@naruc.org)
 - State energy offices - Camille Norton (cnorton@naseo.org)
 - All new curriculum! Participants will learn:
 - Best practices across the U.S. for planning distribution systems
 - How to incorporate electrification and DERs in local grid planning
 - How to design stakeholder-informed planning processes to achieve state goals
 - Challenges and potential solutions
 - Questions to ask utilities
 - Office hours with trainers
 - Half-day State Action Planning Workshop facilitated by RMI
 - Apply learning to develop plans for advancing distribution planning in your state
 - Engage in interactive discussions and peer exchange to support implementation
 - **Charlotte, December 11-12* - Register now!**
 - **Detroit, March 11-12 - Register now!**
 - **Salt Lake City, April 23-24 - Register soon**

*Tour EPRI Power Delivery and Utilization Lab in Charlotte on Dec. 13



Other Training and Technical Assistance Resources

- Berkeley Lab
 - ▣ Integrated Distribution System Planning [website](#)
 - ▣ Other topics: Search by research area [here](#)
- U.S. Department of Energy
 - ▣ [Office of Energy Efficiency and Renewable Energy \(EERE\)](#)
 - ▣ Distribution Grid Transformation [website](#)
 - ▣ Grid Resilience and Transmission Planning Resource [Hub](#)
- [Resources and Assistance for State Energy Offices and Regulators program](#), funded by DOE EERE and Office of Electricity
- NARUC Regulatory Training Initiative [courses](#)
- NASUCA [regulatory basics courses](#) and DOE/Berkeley Lab [trainings](#)
- [NASEO](#) – search publications, issues and events



[Interactive Framework](#) for Integrated Distribution System Planning

