Training and Action Planning Workshop for States

Integrated Distribution System Planning 2.0: Planning for Electrification and Distributed Energy Resources

Agenda

Charlotte, North Carolina

December 11-12, 2024

Optional Site Visit on December 13

Participants will learn:

- Best practices in the region and across the U.S. for planning electric distribution systems
- How utilities are incorporating transportation and building electrification and distributed energy resources (DERs) in local grid planning
- How to design stakeholder-informed planning processes to achieve state goals
- Current distribution planning challenges in the region and potential solutions
- Questions to ask utilities in the distribution planning process
- Actions to advance distribution planning in your state

If you missed our 2023-24 training, you can review slides and recordings here. 2024-25 training covers new topics. See additional resources on integrated distribution system planning here and here.

Day 1

8:30 a.m. **Welcome and Agenda Review**
Joe Paladino, U.S. Department of Energy
Jeff Loiter, NARUC, and Kirsten Verclas, NASEO
Lisa Schwartz, Berkeley Lab

8:50 a.m. **Integrated Distribution System Planning Overview**
Lisa Schwartz and Natalie Mims Frick, Berkeley Lab

- Planning framework
- Integrating state policy objectives in planning guidance for utilities
- Data and analysis state agencies can ask for
- Cost-effectiveness evaluation
- Cost recovery for grid modernization investments

10:00 a.m. **Break** *(refreshments provided)*

The U.S. Department of Energy's Office of Electricity and Office of Energy Efficiency and Renewable Energy provided support for this training.

10:15 a.m. **Forecasting Loads and Distributed Energy Resources**:
Emerging Methods for New Challenges
Margot Everett and Chris Lawrie, Kevala

- Overview of load and DER forecasting for distribution system planning
- Growth of large loads, such as data centers and manufacturing
- Building and transportation electrification loads
- Scenario analysis

11:15 a.m. **Distribution Planning Modeling**
Cody Davis, Electric Power Engineers

- Assumptions and inputs
- Methods and tools

12:00 p.m. **Lunch, name game (introductions) and networking**

12:45 p.m. **State Panel on Distribution Planning Challenges and Potential Solutions**
Facilitated by National Association of State Energy Officials and National Association of Regulatory Utility Commissioners

1:45 p.m. **Distribution Planning With Distributed Energy Resources: Integration and Valuation**
Cody Davis, Electric Power Engineers

- Capabilities by technology
- Value streams and benefit-cost analysis
- Hosting capacity analysis for solar and electric vehicle charging
- Costs and benefits of proactive grid investments and cost allocation approaches

2:45 p.m. **Break** *(refreshments provided)*

3:00 p.m. **Considering Equity and Engaging Stakeholders**
Natalie Mims Frick, Berkeley Lab

- State and utility practices and case studies
- Metrics for success
- Engagement throughout the planning process

3:45 p.m. **Office Hours With Trainers***

- Distribution planning policies, utility guidance and regulatory issues
- Forecasting loads and DERs
- Distribution planning modeling
- Distribution planning with DERs: integration and valuation
- Considering equity and engaging stakeholders
- Distribution planning for transportation electrification and EV rate design
- Distribution planning for building electrification
- Coordination across planning processes

5:00 p.m. **Adjourn**

**State participants choose a table tagged with one of these topics. Trainer(s) assigned to the table answer participant questions, and participants can add their responses. As other participants wait for their turn to ask a question, they learn more about issues in other states and potential solutions. Participants can move to other tables whenever they are ready to do so.*

Day 2

8:00 a.m. **Agenda Review**
Lisa Schwartz, Berkeley Lab
Kirsten Verclas, NASEO, and Jeff Loiter, NARUC

8:10 a.m. **Distribution Planning for Transportation Electrification**
Nancy Ryan, NER Consulting
- How EV loads differ from other types of loads
- Forces driving light-, medium- and heavy-duty charging loads
- Role of rates and managed charging in shaping EV loads
- Grid impacts of EV charging — local distribution grid vs. bulk power system
  - Challenges to existing grid planning and finance paradigms
  - New sources of data and planning tools

9:10 a.m. **EV Rate Design**
Andy Satchwell, Berkeley Lab
- Rate design 101
- State policy and utility objectives
- Time-varying rate design elements
- Experience with EV rate design to date

10:10 a.m. **Break** *(refreshments provided)*

10:30 a.m. **Distribution Planning for Building Electrification**
Natalie Mims Frick and Andy Satchwell, Berkeley Lab
- Distribution planning challenges and solutions
- Energy efficiency and demand flexibility programs to manage building electrification
- Value of these programs for future grids with high levels of electrification and DERs
- Energy and bill impacts of building electrification investments and efficacy of alternative rate designs

11:30 a.m. **Coordination Across Planning Processes**
Grace Relf, Berkeley Lab
- Coordinating distribution system planning with other utility and state plans, such as grid modernization, resilience, climate change, electrification and State Energy Security Plans
- State agency roles and responsibilities

12:15 p.m. **Lunch and networking**

1:00 p.m. – 5:00 p.m. **State Action Planning Workshop**
Facilitated by Rocky Mountain Institute
- Consolidate the learning from the training sessions
- Apply learning to develop tangible plans for advancing distribution planning in their home states
- Engage in interactive discussions and peer exchange to support ongoing IDSP implementation post-workshop