Supplemental Project Notice

THE MICROGRID COHORT

2023 – 2025

PROJECT HIGHLIGHTS

- Supporting utilities with microgrid planning, design, performance assessment, deployment and commissioning
- Learning from other utilities through sharing of project plans, experiences, and learnings with community and utility microgrids
- Providing materials to educate regluators and other stakeholders regarding the potential and benefits of utility microgrids
- Providing an inside look through conversation and case study on cutting-edge microgrid development
- Reducing uncertainty while enabling safer and more reliable microgrid implementation through education and training

Background, Objectives, and New Learnings

As quantities of distributed energy resources (DER) and costs continue to decline, microgrids are increasingly viable as a resiliency solution for utilities and customers. Simultaneously, customer demand for additional solutions to service disruptions is growing along with requests for expedited review of community microgrid interconnections and implementation of utility microgrids.

EPRI and member utilities have built industry-leading experience in utility and community microgrid design and analysis. However, the fundamental steps to develop microgrids that leverage today's DER technology is still nascent and the evaluation process is complex. Moreover, a broad set of stakeholders within the utility need to be engaged with planning and operations teams.

Extensive work has gone into microgrid feasibility assessments and design efforts. As these processes are continually refined, new insights can be gathered through tailored support of utility microgrid implementations and integration, including:

- Use case identification, value and feasibility assessment
- Equipment sizing, grounding, and protection design
- Operational philosophy, performance requirement development, and detailed viability analysis
- Assessments at factory and laboratory (e.g. hardware-in-loop)
- Commissioning guidelines and startup procedures
- Recommendations for O&M and system-level monitoring

The objective of this effort is to build a collaboration amongst EPRI and participating utilities on community and utility microgrids to:

- Collect wisdom and experiences from prior and current microgrid developments as well as leading practitioners
- Refine existing knoweldge into comprehensive guidelines for designing, analyzing, and implementing microgrids
- Identify gaps and recommended next steps for the industry
- Educate and train utility staff for various technical and managerial roles in microgrids

Benefits

This project aims to benefit the public by increasing the availability and viability of microgrid offerings and improve overall reliability. This effort should also enable microgrids to be developed at a lower cost through consistent implementation, correct sizing of equipment, and reduced uncertainty around the design and interconnection review processes.

This project is intended to help utilities de-risk microgrid interconnection and integration and lower the cost of implementation. This may improve customer relationships through allowing more diverse product offerings and shorter interconnection times, while improving safety through better education for utility staff and 3rd party integrators.

Project Approach and Summary

This effort builds on an extensive background that EPRI and member utilities have gained through utility and government-funded efforts (DOE, NYSERDA, and CEC). From 2021–2023, EPRI has conducted more than a dozen individual microgrid design and interconnection studies. These projects have generated large amounts of data, new tools, and lessons-learned that can be leveraged by others.

This project intends to compile and refine processes for designing, evaluating, and commissioning microgrids (with a focus on the latter stages of development). An emphasis will be to identify gaps in existing (commercial) software for designing and evaluating microgrids.

For enabling data collection, engagement, and technology transfer, the project will feature regular meetings of participants (monthly) with additional engagement through annual workshops and individualized training sessions for each participant.

Updates will be provided and incorporated into this effort from parallel activities at EPRI and participants around designing, analyzing, and operating microgrids.

Additional tailored support is available through separate, optional scope, including feasibility studies, detailed designs, viability analyses, hardware-in-loop (HIL) evaluation, and commissioning support.

Deliverables

As an outcome of this effort, EPRI intends to produce:

- Monthly participant meetings and an annual workshop providing a series of topical presentations and materials informing various aspects of microgrid design, viability analysis, commissioning, operations, and example case studies on microgrids
- Templates and process development for requesting data from customers and third-party developers during the microgrid design and interconnection process
- Individualized training sessions (4hrs/year) for each participant

The non-proprietary results of this work will be incorporated into EPRI R&D programs and made available to the public for purchase or otherwise.

Price of Project

The price of the project is $25,000/year (with 2-year commitment). EPRI members may use self-directed funds (SDF) to participate in this project. Contact EPRI for tailored options.

Project Status and Schedule

This project is intended to run for a 3-year period from Q4 2023 through Q4 2025.

Who Should Join

Utilities with interest in developing and/or interconnecting utility-owned or community-based microgrids.

Contact Information

For more information, contact the EPRI Customer Assistance Center at 800.313.3774 (askepri@epri.com).

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