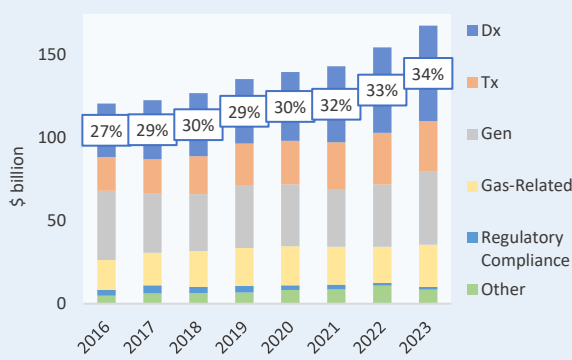


# EVOLVING DISTRIBUTION PLANNING CRITERIA FOR A MODERN GRID



## U.S. utility spending

Modified from EEI Finance Department, company reports, and S&P Global Market Intelligence

## PROJECT HIGHLIGHTS

- Align planning considerations with corporate objectives
- Define performance metrics that will drive planning assessments and recommendations
- Identify planning criteria that will impact the outcome of key performance metrics
- Develop a framework to apply planning criteria in the evaluation of distribution system needs and solutions

## Background, Objectives, and New Learnings

Utility spending on distribution systems is increasing in the US, with more than \$50 billion invested in capital infrastructure in 2023. This trend is likely to continue to enable an increasing array of customer needs and societal objectives, such as increasing electrification, proliferation of distributed energy resources (DER), and the need for enhanced operational capabilities to improve reliability and resilience.

As distribution systems evolve and become more dynamic and complex, distribution system planning is a topic of increasing importance within utilities and among stakeholders. As distribution systems evolve, so too must the distribution planning criteria that planners employ to assess risks and develop optimal mitigation plans. Distribution planning criteria guides planning efforts with a comprehensive set of metrics, thresholds, and evaluation processes to manage risks and deliver on defined objectives. Having clear distribution planning criteria will promote informed and consistent decision making and facilitate consensus with stakeholders on a plan forward.

This objective of this project is to work directly with distribution utilities to understand their future objectives and provide guidance on updating their planning criteria. This project will leverage and build upon learnings from recent EPRI research investigating distribution planning criteria associated with electrification of vehicles and buildings, DER interconnections, non-wires alternative (NWA) assessments, equipment ratings, and grid modernization applications in a manner suitable for managing risks and delivering on defined objectives.

This project intends to address the following research questions:

- How to align planning considerations with corporate objectives?
- How to define performance metrics to drive planning assessments and recommendations, and how to identify planning criteria impacting key performance metrics?
- How to apply planning criteria in the evaluation of distribution system needs and solutions.

## Benefits

---

The potential public benefits of this project include improved system reliability and the adoption of clean energy while maintaining affordability due to the ability to “right-size” distribution infrastructure expansion for future needs. The potential funder benefits of this project include guidance on updates to distribution planning criteria aligned with corporate objectives, informed and consistent investment decision-making, and improved communication of planning criteria with various stakeholders.

## Project Approach and Summary

---

EPRI intends to work individually with each project participant through the following tasks:

- Collect input on the project plan and priorities.
- Data gathering and review of utility’s existing planning criteria.
- Workshop to identify planning objectives.
- Workshop to identify performance metrics to guide planning recommendations.
- Workshop to identify planning criteria and thresholds to deliver on key metrics.
- Development of a framework to apply planning criteria to evaluate future distribution system needs and solutions.

Provided that two or more participants join, EPRI also plans to organize collaborative virtual meetings to share the non-proprietary findings from the participant-specific work.

## Deliverables

---

EPRI plans to organize a series participant-specific meetings. From these, EPRI intends to develop for each project participant a report summarizing:

- Alignment of planning criteria to overarching objectives.
- Recommendations to enhance distribution system needs assessment that integrates multiple criteria.
- Recommendations to enhance project alternatives analysis considering multiple objectives.

Provided that two or more participants join, EPRI also intends to organize collaborative virtual meetings and

produce a collaborative final report to share the non-proprietary findings across all the project participants.

The non-proprietary results of this work will be incorporated into EPRI’s R&D programs.

## Price of Project

---

\$75,000

Optional: Strategic study of the impacts of utility specific changes to planning criteria. Pricing is determined separately based on scope.

This project qualifies for Self-Directed Funding (SDF). Funding can be distributed across two calendar years.

## Project Status and Schedule

---

The project will commence after the first member agreement has been completed. Participant-specific reports are planned to be completed within 12 months from the completion of each member agreement. Provided that two or more participants join, the collaborative project report is planned to be completed within 12 months from the completion of the last member agreement or within 24 months from the completion of the first member agreement.

## Who Should Join

---

Utilities considering planning criteria revisions driven by new or evolving corporate objectives, regulatory drivers, electrification, DER integration, or advanced operational capabilities.

## Contact Information

---

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

### Technical Contacts

Robert Sheridan at 704.595.2331 ([rsheridan@epri.com](mailto:rsheridan@epri.com))  
Jouni Peppanen at 650.855.8941 ([jpeppanen@epri.com](mailto:jpeppanen@epri.com))

### Additional Contacts

Brian Dupin at 650.906.2936 ([bdupin@epri.com](mailto:bdupin@epri.com))  
Barry Batson at 704.905.2787 ([bbatson@epri.com](mailto:bbatson@epri.com))  
Chuck Wentzel at 618.320.0011 ([cwentzel@epri.com](mailto:cwentzel@epri.com))  
Annie Haas at 704.608.6314 ([ahaas@epri.com](mailto:ahaas@epri.com))  
Warren Frost at 403.474.4432 ([wfrost@epri.com](mailto:wfrost@epri.com))