

Grid Modernization Strategic Roadmapping



Background, Objectives, and New Learnings

Changing customer expectations, regulatory and policy initiatives, increasing number of extreme weather events, and the need to accommodate and integrate DER and advanced technologies are driving changes to the way utilities plan and operate the grid. Over the past two years, almost every state in the U.S. has launched regulatory or legislative efforts to begin accommodating these changes and modernize the distribution grid. As a result, many utilities are developing comprehensive plans, in many cases required by a regulatory commission, that lay out strategies for grid modernization over a multi-year time frame.

Developing a strategy for grid modernization is complicated. Investments are significant and must be sequenced over several years to achieve both the foundational requirement of safely delivering low-cost, reliable electricity service while also adding new capabilities. A grid modernization plan describes a logical progression to enhance or add new capabilities that move the utility from its current state to the level of functionality needed to meet new objectives. In many cases, the progression will take years to achieve. A key question becomes, “Where do you start and how quickly do you progress?”

EPRI has worked with electric utilities to develop company-specific strategic roadmaps for more than 15 years. This has led to the development of a structured methodology and a set of tools to help utilities navigate this process and develop plans that meet a company’s unique needs.

Project Highlights:

- Define what a modern grid is for your company and how its realized
- Compare your modernization plan to those of your peers
- Leverage EPRI’s technical expertise and thought leadership in developing or assessing company-specific strategic roadmaps

EPRI offers a range of services to support utilities in developing their grid modernization strategies, including:

- Strategic Roadmap Development – Engage with key executives and subject matter experts within a company to develop a detailed strategic roadmap
- Review a Company’s Existing Plan – Review the existing grid modernization plan and provide feedback on how it can be enhanced
- Strategy Consulting Services – Provide consulting support as a company develops its own grid modernization strategy

Benefits

A utility may save time and money when developing a strategic roadmap that meets its specific needs by leveraging EPRI’s experience with other utilities, its industry expertise and its world-class subject matter experts. Additional benefits may include:

- Understanding what is possible by leveraging EPRI’s expertise and advanced R&D
- Understanding the capabilities needed and the sequence and timing of deployment to accomplish desired objectives
- Understanding where a utility is with respect to its peers or where it needs to be
- Understanding the maturity of advanced technologies and strategies for their deployment
- Providing a framework for structured discussion and engagement with regulators

Project Approach

A strategy is a framework for decision making. It is the precursor for developing a detailed implementation plan. A grid modernization strategy includes a detailed set of objectives, a list of the new or enhanced capabilities that the company must acquire to realize the objectives, and a high-level approach for how the company is going to acquire these capabilities. A grid modernization implementation plan builds on the strategy and includes a cost benefit assessment, technology assessment and selection, and project management.

EPRI's grid modernization strategic roadmap methodology starts by assessing the drivers that are compelling a company to change how it currently operates. By assessing these drivers, a company can develop a detailed set of grid modernization objectives that define the results the company wants to achieve. The next step in the process is to identify the new or enhanced capabilities needed to accomplish the objectives. Capabilities can be associated with operations, planning, physical grid infrastructure, customer and/or third-party interface, sensing and measurement, connectivity telemetry, and cyber/physical security. A company then needs to determine what its current capability maturity level is and the level that it needs to be at in the future. Finally, they determine how, at a high level, the company is going to migrate from the current state to the future for each capability. The strategic roadmap also assesses architectural issues, for instance how the actions taken to accomplish one objective can impact the actions taken to accomplish another objective.

EPRI will apply its structured methodology and tools to help each participating utility develop a detailed strategic roadmap for grid modernization, or review an existing modernization plan, to help the utility accomplish desired objectives.

Deliverables

Each participant will receive a company-specific report documenting the results of the grid modernization roadmap development or assessment.

Deliverables are also expected to include collaborative interactions (Webcasts) for participants to share information, experiences, challenges, and lessons learned. EPRI staff will share information on methods and tools for developing roadmaps as well as insights gained from working with different utilities

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

Price of Project

There are three product offerings through this project, each tailored to the specific needs of the participant, include:

- Strategic roadmap development
- Review existing modernization plan
- Strategy consulting

Contact EPRI for tailored scope and pricing.

This supplemental project qualifies for Tailored Collaboration (TC) and Self-Directed Funding (SDF).

Project Schedule

Each roadmap or review project will commence upon finalizing the tailored work scope and schedule. Project duration can vary from 4–6 months for a review scope and between 12–18 months for a strategic roadmap.

Who Should Join?

The target audience for this service is a corporate officer, an individual responsible for corporate strategy or innovation, or an individual responsible for grid modernization planning.

Contact Information

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