Supplemental Project Notice

GRID ENHANCING TECHNOLOGIES FOR A SMART ENERGY TRANSITION

GET SET
Grid-Enhancing Technologies for a Smart Energy Transition

PROJECT VISION

Prepare energy companies to confidently evaluate, select, plan, and deploy grid-enhancing technologies

PROJECT RESULTS AND BENEFITS

- Develop guidance and strategies to plan and operate grid-enhancing technologies
- Provide training and tools to increase utility confidence when adopting grid-enhancing technologies
- Conduct laboratory testing of emerging power flow control and dynamic line rating technologies
- Develop case studies and insights into field pilots of advanced conductors, DLR technologies, and power flow controllers
- Improved specifications for GETs using results from objective laboratory testing

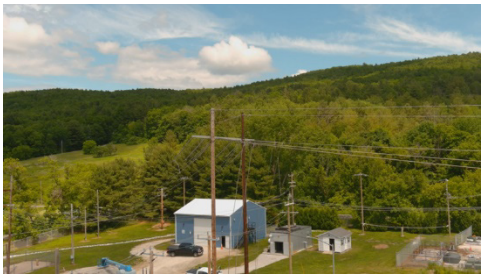
Background, Objectives, and New Learnings

Deploying grid-enhancing technologies (GETs) is critical to unlocking additional capacity to meet the urgent surging electricity demands of this decade and beyond. EPRI has led R&D on transmission technologies for many years; this research aims to accelerate and expand the industry's knowledge of GETs.

GETs are hardware and software technologies that can reduce congestion costs, improve renewables integration, and increase capacity and reliability. By maximizing the capacity of the current infrastructure, GETs can defer or reduce the need for significant investment in new infrastructure projects and increase renewables use. They can also be a bridge to unlock capacity as new circuits are being built. The maturity and experience across GETs differ significantly. Commercial offerings have been deployed in limited instances, while others are nascent. While some GETs have been available for many years, there are still questions as to how to characterize, plan, and manage these technologies to maximize their value. GETs technologies are continuously changing and improving, making historical results and experiences less relevant.

EPRI's **Grid-Enhancing Technologies for a Smart Energy Transition (GET SET) Initiative** aims to support the planning, integration, acquisition, operation, and implementation of Dynamic Line Ratings (DLR), Advanced Conductors, Advanced Power Flow Controllers (APFC), and Topology Optimization.

This project aims to execute and share results of priority research topics that can accelerate the deployment of GETs and de-risk their deployment and operation.



EPRI's new DLR test line at the Lenox High-Voltage lab

Project Approach and Summary

GET SET delivers value by accelerating research and development in focus areas that can de-risk the adoption of grid-enhancing technologies. This initiative will provide the technical basis and confidence to plan, acquire, operate, and maintain GETs by:

1. Conducting laboratory testing to understand and evaluate reliability, aging, and performance
2. Compiling results and experiences from pilots, implementations, case studies, and user groups
3. Increasing collaboration amongst participants, technology providers, stakeholders, and EPRI SMEs through an annual workshop, webinars, and training
4. Publishing a series of guides for each technology
5. Developing a planning framework for GETs and demonstrating its use through case studies
6. Evaluating the impact of GETs on system operations and developing guidelines for system operators

Deliverables

This research aims to produce the following deliverables:

- **Technical Webcasts** focusing on key issues and technical challenges associated with deploying grid-enhancing technologies.
- **Technical Reports and Deliverables** including lab test results and summaries of field testing, installation and maintenance guidance for DLR, advanced conductors and APFC, and specification guides. The initiative will also publish planning and operations guidelines and story maps of case studies demonstrating how to apply guidelines.
- **Annual Workshop** to share results and learnings from ongoing testing and deployments of GETs
- **APFC User Group** for utilities that have deployed or are in the process of deploying APFC devices
- **Training** focused on each of the technologies, as well as planning and operating GETs
- **Reference Books and Guides** on dynamic line ratings and advanced conductors

Price of Project

The price to participate is as follows:

Transmission MW Peak	Cost
>15,000	$300,000
5,000 to 15,000	$180,000
<5,000, Alternate Price	$105,000

Funding can be split over three years and 15-25 members are needed to complete the scope of work. This research qualifies for the use of Self-Directed Funds (SDF).

Project Status and Schedule

EPRI initiated a Sprint Phase in 2024 which resulted in publishing Advanced Conductor Specification and Use Cases from existing EPRI R&D results; an industry workshop; initiation of construction of DLR and APFC test facilities and whitepapers on each technology.

The member funder project is expected to begin in Q1 2025 and continue for three years.

Who Should Join

Transmission Owners and Operators engaged in planning, acquiring, operating, or maintaining GETs.

Contact Information

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