



FACT SHEET

## GRID RESILIENCE AND INNOVATION PARTNERSHIPS PROGRAM

Established by the Bipartisan Infrastructure Law, the U.S. Department of Energy's Grid Deployment Office is administering a historic \$10.5 billion investment via the Grid Resilience and Innovation Partnerships (GRIP) program to enhance grid flexibility, improve the resilience of the power system against growing threats of extreme weather and climate change, and ensure American communities have access to affordable, reliable, clean electricity when and where they need it.

## INCREASING TRANSMISSION CAPACITY TO EXPAND RENEWABLE ENERGY INTEGRATION

The Electric Power Research Institute (EPRI) and Vermont Electric Power Company (VELCO) will install advanced power flow control (APFC), specifically modular static synchronous series compensators (M-SSSC), at interregional tie lines to systematically increase the transfer capacity across regional borders. The project also includes a series of power system studies to assess the economic, operational, and reliability benefits of larger adoption of APFC in the system, and a comprehensive analysis of SmartValve technology and system impacts of APFC integration.

### Anticipated Outcomes and Benefits

The enhanced transmission capacity will be vital to secure a reliable energy supply to the increasing demand in Vermont and will facilitate increased energy dispatch of renewable energy, thus allowing the state to achieve its renewable energy target. The APFC will also help optimize the cross-border flows with Vermont while reducing the maintenance and outage costs of the existing phase-shifting transformers on the border with New York. Due to VELCO's co-op style financial structure, the economic benefits derived from the reduced generation cost will directly lead to lower costs for consumers. These benefits include:

- › Use of low-cost technology to increase the effective transmission capacity and operational transfer capacity between the New York–Vermont border.
- › Improved system efficiency and reliability due to the dynamic and autonomous nature of the control.
- › Reduced maintenance and outage costs to customers and reduced impact of prolonged outages due to maintenance and failures.
- › Added technology will reduce generation costs to energy consumers.
- › Eleven on-site tours for public schools, universities, labor committees, non-profits organization, utilities, and governmental departments.
- › Comprehensive community benefits agreement negotiated with utility, local labor organizations, municipalities, environmental justice and economic development organizations, and universities.
- › On-the-ground resources allocated to train the local workforce, both utility workers and subcontractors, on the installation, operations, and maintenance of SmartValve devices, including the advanced data management practices for digital grid operation.
- › Expanded domestic manufacturing and jobs and diversified component supply chains from local and regional suppliers.

### PROJECT DETAILS

- › **Project:**  
Optimizing Interregional Transfer Capacity Using Advanced Power Flow Control
- › **Applicant/Selectee:**  
Electric Power Research Institute Inc.
- › **GRIP Program:**  
Smart Grid Grants (Bipartisan Infrastructure Law, Section 40107)
- › **Federal cost share:**  
\$18,017,358
- › **Recipient cost share:**  
\$18,017,358
- › **Project Location:**  
Vermont
- › **Project type:**  
Grid Capacity and Renewables Integration

### HELPFUL LINKS

- › [Grid Resilience and Innovation Partnerships Program](#)
- › [About the Grid Deployment Office](#)