

1. Resilience Planning

National Grid is an investor-owned utility providing electricity and natural gas to over 6 million customers in Massachusetts, Rhode Island and New York. National Grid has placed an emphasis on resiliency planning, hardening grid infrastructure and improving the reliability of electric service in its territory. The need for these initiatives has been heightened by the impacts of increasingly frequent adverse weather events and storms such as Hurricane Irene and Superstorm Sandy. As transformers and grid devices begin to age and lose their efficacy due to wear and tear, the utility has also identified the need to replace aging electric delivery infrastructure.

National Grid focuses on two main approaches to resiliency planning. The first is an internal approach centered on general utility storm hardening work at substations, transformers, and other aging electric equipment. National Grid has earmarked investments of \$10 billion in growing and hardening electric and natural gas infrastructure against climate change, extreme weather events and peak usage in its service territories in New York, Massachusetts and Rhode Island. The second aspect is focused on building a resilient energy delivery system by incorporating a greater number of variable generation resources. This approach is geared toward customer outreach in the form of education, technical advice, providing incentives for resilient technologies, and offering interconnection assistance.

2. Program or Project Implementation

National Grid has undertaken a number of activities to harden its system and integrate greater numbers of DERs. For example, National Grid has facilitated the interconnection of 900 MW of distributed generation for approximately 40,000 customers. The utility has also supported initiatives led by state agencies to increase resilience in its service territory. For example, in New York, National Grid supported approximately 40 applications in the NY Prize competition to help communities create microgrids and become more resilient to power outages. In Massachusetts, National Grid worked with the Department of Energy Resources (DOER) to help facilitate projects and educate customers about the availability of grants and other incentives through the state's [Community Clean Energy Resilience Initiative](#).

Currently, National Grid is partnering with customers to plan and develop innovative projects that provide resiliency and energy security, and promote efficient energy use. In partnership with Clarkson University, SUNY Potsdam and GE Global Research, the utility is examining the feasibility of building [a community microgrid in Potsdam, NY](#). During emergencies, the microgrid would separate from the electricity system and provide power to campuses, the local police and fire departments and emergency response facilities. The demonstration project will introduce business model innovation to the development of a community resiliency microgrid.

Additionally, National Grid's MicroCHP Gas REV Demonstration Project in New York City and Long Island is a "test and learn" pilot project approved in 2016 to assess the feasibility of microCHP in residential and small commercial markets. Units are 5 kW and under and primarily used in 1-6-unit multi-family residential buildings or small commercial buildings. The units are being tested for demand response and black start capability to maximize economic and resilience value streams for customers.

3. Lessons Learned

For National Grid, a multi-pronged approach to resiliency planning and ensuring the reliable supply of energy has been very beneficial. This strategy has included the adoption of innovative energy practices

CHP for Resiliency Accelerator Partner Profile

and new clean energy technologies, which has improved storm resiliency and customer empowerment. While National Grid is unable to own and operate CHP and DG assets, it has been important for them to assist customers and facilitate learning in order to improve future market conditions for the deployment of beneficial technologies. The utility is aiming to facilitate resilient CHP projects to serve critical loads with electricity or natural gas. The CHP for Resiliency Accelerator was an important venue for improving the planning and development of CHP for customers and for the exchange of knowledge and information with other stakeholders.

4. Additional Information

- ▶ [National Grid's role in NY Prize](#)
- ▶ [National Grid REV Demonstration Projects](#)
- ▶ [National Grid "The Democratization of Energy"](#)