



## Consolidated Edison Company of New York Inc Secure Interoperable Open Smart Grid Demonstration Project

### Project Description

The Consolidated Edison Company of New York and its sub-recipients are demonstrating a secure, interoperable, open Smart Grid that reduces electric demand and increases energy reliability and efficiency. The demonstration project, in New York City and its New York and New Jersey suburbs, has one of the highest load densities in the world representing a complex and diverse test bed, including critical organizations such as Wall Street, the Federal Reserve, major medical facilities, and hubs for national and global communications. Distributed thermal and battery storage, advanced metering infrastructure, home area networks, building management systems, photovoltaics and smart electric vehicle charging have been demonstrated. The demonstrations have illustrated how data from disparate systems are securely communicated, integrated, and displayed to the operator using decision-aid tools thus helping operators identify problem areas and prioritize corrective action in both normal and contingency operations. Other new technologies developed include a rules-based dashboard for control center operators, a risk management engine to facilitate efficient operation, a transmission decision management engine that aggregates electricity supply data, an adaptive stochastic controller, and an intelligent maintenance system. It is anticipated that the above technologies will be scalable across urban utility territories nationwide.

### Goals/Objectives

- Improve power quality and lower transmission and distribution losses
- Fewer and shorter power outages
- Lower operation and maintenance costs
- Protect secure sites and resources through Smart Grid cyber security
- Create a national blueprint for Smart Grid applications in urban underground networks

### Key Milestones

- Secure Communication Link between Con Ed and Viridity building control operations (January 2012)
- Target Indicating Sensors operating (March 2012)
- Integrated System Model Decision Aid (April 2012)
- Business Rules Knowledge Engine (September 2012)
- Middleware development complete (February 2013)
- Capstone demonstration (July 2013)

### Benefits

- Job growth
- Customers save money
- Dependency on foreign oil reduced
- Catastrophic security breaches prevented
- CO2 emissions reduced
- Energy generation diversity increased



### CONTACTS

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### PARTNERS

Orange and Rockland Utilities Inc  
Siemens  
TIBCO  
Columbia University  
The Boeing Company  
Green Charge Networks  
CALM Energy Inc  
New York City Economic Development Corporation  
Rudin Management Company Inc  
Verizon Communications  
Viridity Energy Inc

### PROJECT DURATION

1/4/2010–9/30/2013

### BUDGET

**Total Project Value**  
\$92,388,217

**DOE/Non-DOE Share**  
\$45,388,291/\$46,999,926

### EQUIPMENT

Solar Modules  
Inverter  
Smart Storage Generation Units

### DEMONSTRATION STATES

New York

CID: OE0000197

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