NYISO Smart Grid Investment Grant Project

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New York Independent System Operator

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Atlanta, GA
Acknowledgment & Disclaimer

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Project Participants

- NYISO as the Primary Awardee for the Grant
- New York Transmission Owners as SubAwardees
- Quanta Technology as the primary consultant, providing Engineering and Technical expertise
- Crowe Horwath LLP as a subcontractor to provide Grant Administration and Compliance expertise
- PMOLink, LLC as a subcontractor to provide Project Planning and Management services
Project Participants

New York Transmission Owners (TOs)

- Central Hudson Electric & Gas  
  - 1 PMU, 1 PDC
- Consolidated Edison  
  - 14 PMUs, 2 PDCs
- Long Island Power Authority  
  - 2 PMUs, 1 PDC
- National Grid  
  - 12 PMUs, 1 PDC
- New York Power Authority  
  - 4 PMUs, 2 PDCs
- New York State Electric & Gas  
  - 5 PMUs, 1 PDC
- Rochester Gas & Electric  
  - 1 PMU, 1 PDC
Consulting Teams & Vendors

- Utilicast / EPG as the vendors providing PDC software, integration and synchrophasor applications
- ABB as the vendor providing Enhanced State Estimator and Voltage Stability Monitoring applications
- EPRI as the vendor conducting the Dynamic Model Calibration Study
- EnerNex as the vendor conducting the Controlled System Separation Feasibility Study
Accomplishments to Date

- PMU Design & Build Out
  - 23 (of 39) PMUs installed to date

- PDC Design & Build Out
  - 5 (of 8) TO Control Center PDCs installed to date

- Smart Grid Enabled Capacitor Installations
  - 197.2 (of 932.1) MVAr of Capacitors installed to date

- PMN Design Architecture
  - Wide Area Network Build out Complete for 9 (of 10) Sites
  - 4 (of 8) Transmission Owner Control Center PDCs Networked
Accomplishments to Date

♦ Situational Awareness (Visualization) Applications
  ▪ Currently Executing Enhancements Testing

♦ PMU-Enhanced State Estimator Applications
  ▪ Code Delivered for Testing by NYISO / January 2013 Deployment

♦ Voltage Stability Monitoring Applications
  ▪ Specifications Complete / June 2013 Deployment

♦ System Studies: Controlled System Separation
  ▪ On Track; Expected Completion December 2012

♦ System Studies: Dynamic System Model Calibration
  ▪ On Track; Expected Completion October 2012
## Installation Schedule

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New York Control Area Map
Data & Communications

- Data
  - Project Goal is 50 PMUs (39 new, 11 legacy)
  - Expect Eastern Interconnection Data Exchange

- PDCs
  - 8 TO Control Centers PDCs
  - 1 Field PDC
  - NYISO PDCs

- Communications system
  - Communication Links to TOs – VPLS Network
  - Centralized Design
Challenges and Lessons Learned

- Project Management / Project Execution
  - External Dependencies
  - Coordination Among Multiple Entities
  - Schedule Delays

- Technical Challenges
  - Experience
  - Performance
  - Data

- Training
  - IT Architecture, Design, Support
  - Operations
  - Staff
Next Steps / Road Map

- Project Execution & Closure
  - Equipment Installations
  - Application Development, Testing & Deployment
  - Closeout Activities

- Strategic Plans
  - SLAs
  - Redundancy
  - Coverage
  - Data Sharing
  - Training
The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state’s bulk electricity grid, administering New York’s competitive wholesale electricity markets, conducting comprehensive long-term planning for the state’s electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.

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