Smart Grid
Investment Grant
Project Update

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Enterprise Architect
New York Independent System Operator
jmcnierzney@nyiso.com

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San Francisco, CA
Acknowledgment & Disclaimer

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Project Participants

♦ New York ISO
  - *Project Manager – Kathleen Dalpe*
    - kdalpe@nyiso.com
    - (518) 356-7657
  - *Business Owner – Rich Dewey, Senior Vice President & Chief Information Officer*
Project Participants

- 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
Project Participants

- Quanta Technologies, Inc.
  - *Crowe Horwath LLP*
  - *PMOLink LLC*
- EPRI
- EnerNex
- ABB
## Project Timeline

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# Project Timeline

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### 2012

- Q3: 02-Aug-10A - 11-Jan-13
- Q4: 16-Nov-12
- G1: 31-Oct-12
- Q2: 11-Jan-13

### 2013

- Q1: 16-Nov-12
- Q2: 31-Oct-12
Phasor Measurement Units

- Seven TO organizations in project
  - Total of 50 PMUs (39 new + 11 existing)
  - Each TO is selecting its own PMU equipment from common minimum requirements set by the project
- PMU placement study dictated what signals were to be monitored at each location
- Number of substations with PMUs -- 50
- Sample rate -- 60 samples per second
- Range of PMUs being installed
  - Disturbance Fault Recorders (DFRs)
  - Dynamic Disturbance Recorders (DDRs)
  - Stand-alone
Phasor Measurement Units

- Installation rate
  - Installing 39 new PMUs by EOY 2012 and folding in 11 existing PMUs
PDCs and Communications

- Phasor Data Concentrators (PDCs)
  - ISO control centers
  - TO primary control centers
  - Some TO secondary control centers
  - One field PDC

- Archive
  - Envisioned to hold Real-Time, one year of full resolution data, seven years of event specific data
PDCs and Communications

- Communications System
  - Communication links to TOs will be fiber based from two separate Telecom vendors
  - Virtual Private LAN Service (VPLS) – cloud-based architecture
  - Managed by NYISO
Major Project Goals

- Low Frequency Oscillation Monitor
- Voltage Stability Monitor
- Offline Study for model calibration
- Offline Study of viability of Controlled System Separation
Major Application Goals

- All TOs will have access to visualization apps through TO portal
- Wide Area Situational Awareness (WASA) will be provided through third-party vendor - TBD
- Phasor enhanced State Estimation function planned to begin validation in 2012
- Hardware and software installations scheduled to be complete by 4th quarter 2012
Challenges & Lessons Learned

- Biggest technical challenges to date?
  - Changing Standards / Future Proofing
  - Calibration of Signals / Testing
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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