NYISO
Electric Gas Coordination Working Group

February 3, 2012

Agenda

- **Introductions**
- **Review Scope & Purpose**
- **Review NYISO's Existing Electric-Gas Protocols**
- **Other Existing Industry Groups**
- **Discussion Issues**
- **Brainstorm Future Agendas**

The Roles of the NYISO

Reliable operation of the bulk electricity grid

- ***Managing the flow of power nearly 11,000 circuit-miles of transmission lines from more than 300 generating units***

Administration of open and competitive wholesale electricity markets

- ***Bringing together buyers and sellers of energy and related products and services***

Planning for New York's energy future

- ***Assessing needs over a 10-year horizon and evaluating projects proposed to meet those needs***

Advancing the technological infrastructure of the electric system

- ***Developing and deploying information technology and tools to make the grid smarter***

Who Regulates NYISO?

Government

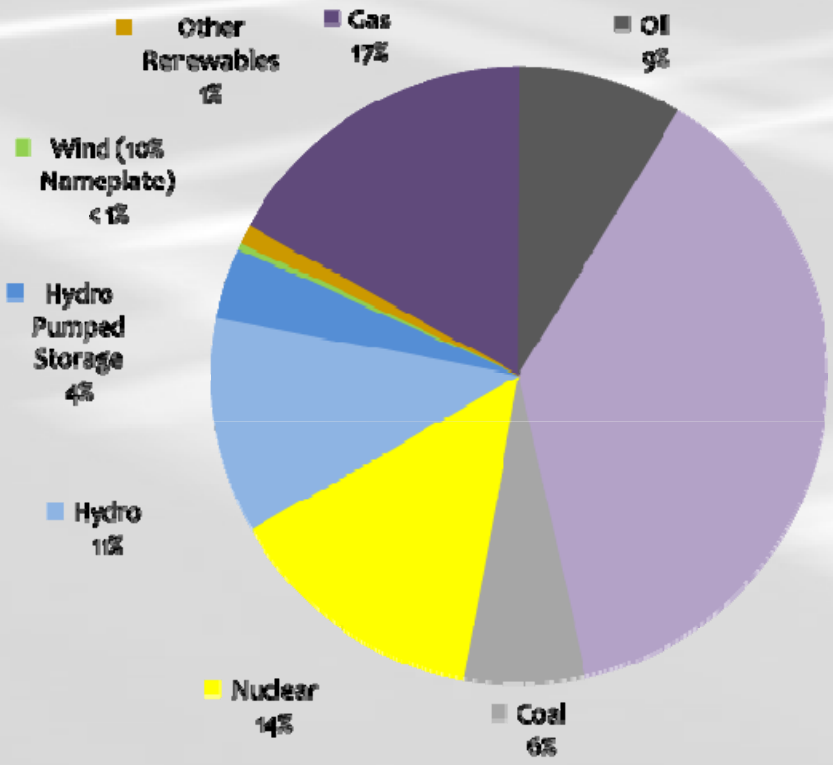
- ***Federal Energy Regulatory Commission***
- ***New York State Public Service Commission***

Reliability

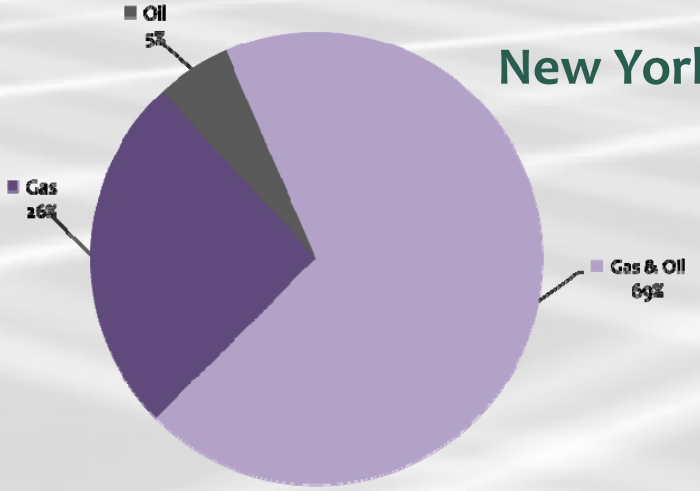
- ***New York State Reliability Council***
- ***Northeast Power Coordinating Council***
- ***North American Electricity Reliability Corporation***

Generating Capacity

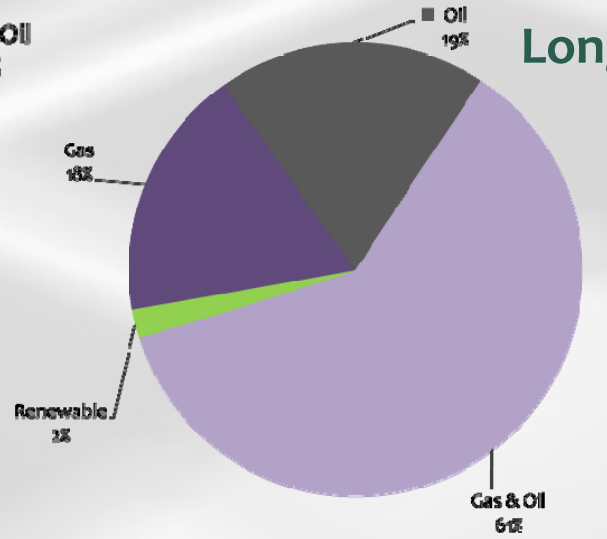
Statewide



New York City



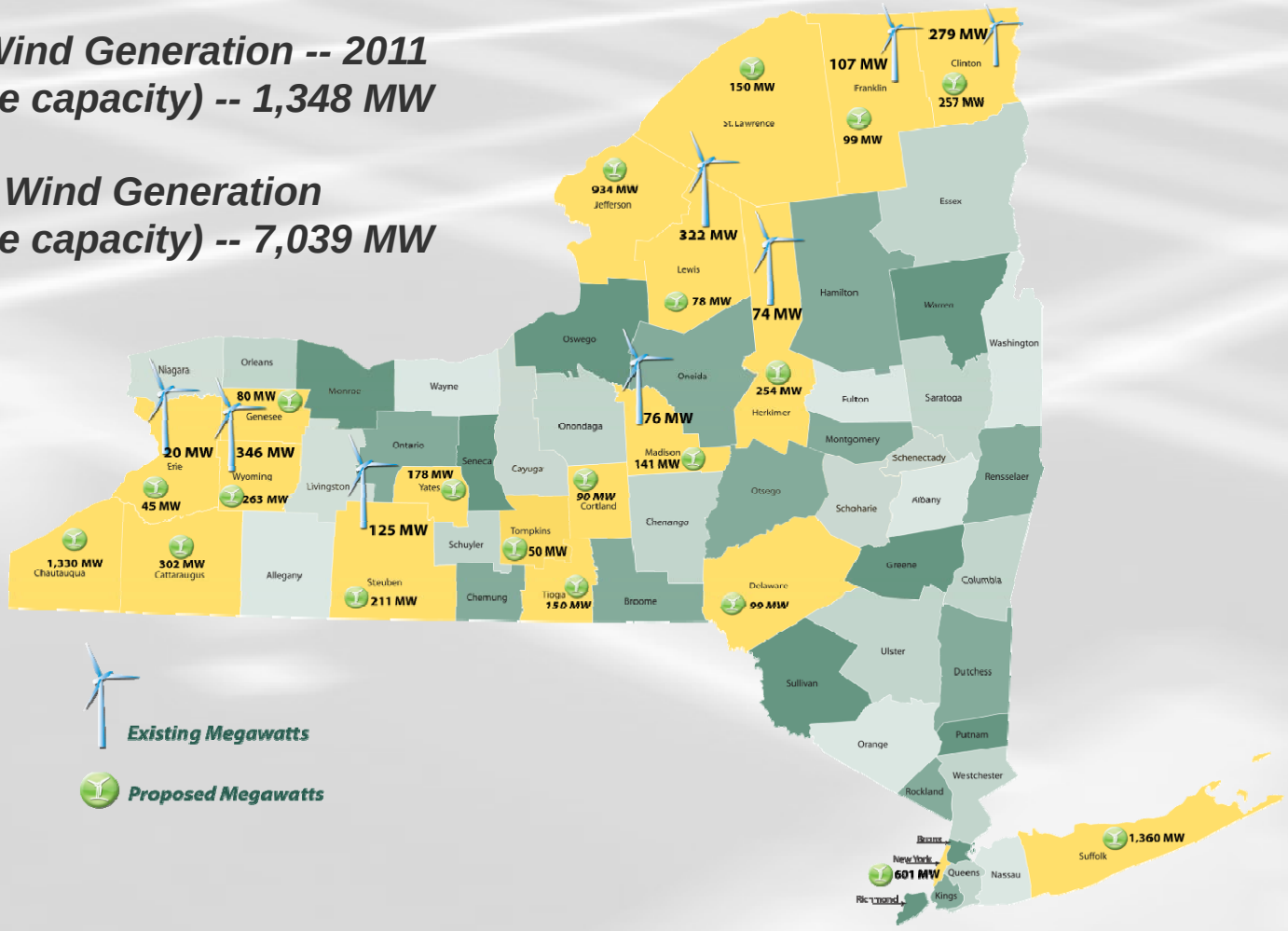
Long Island



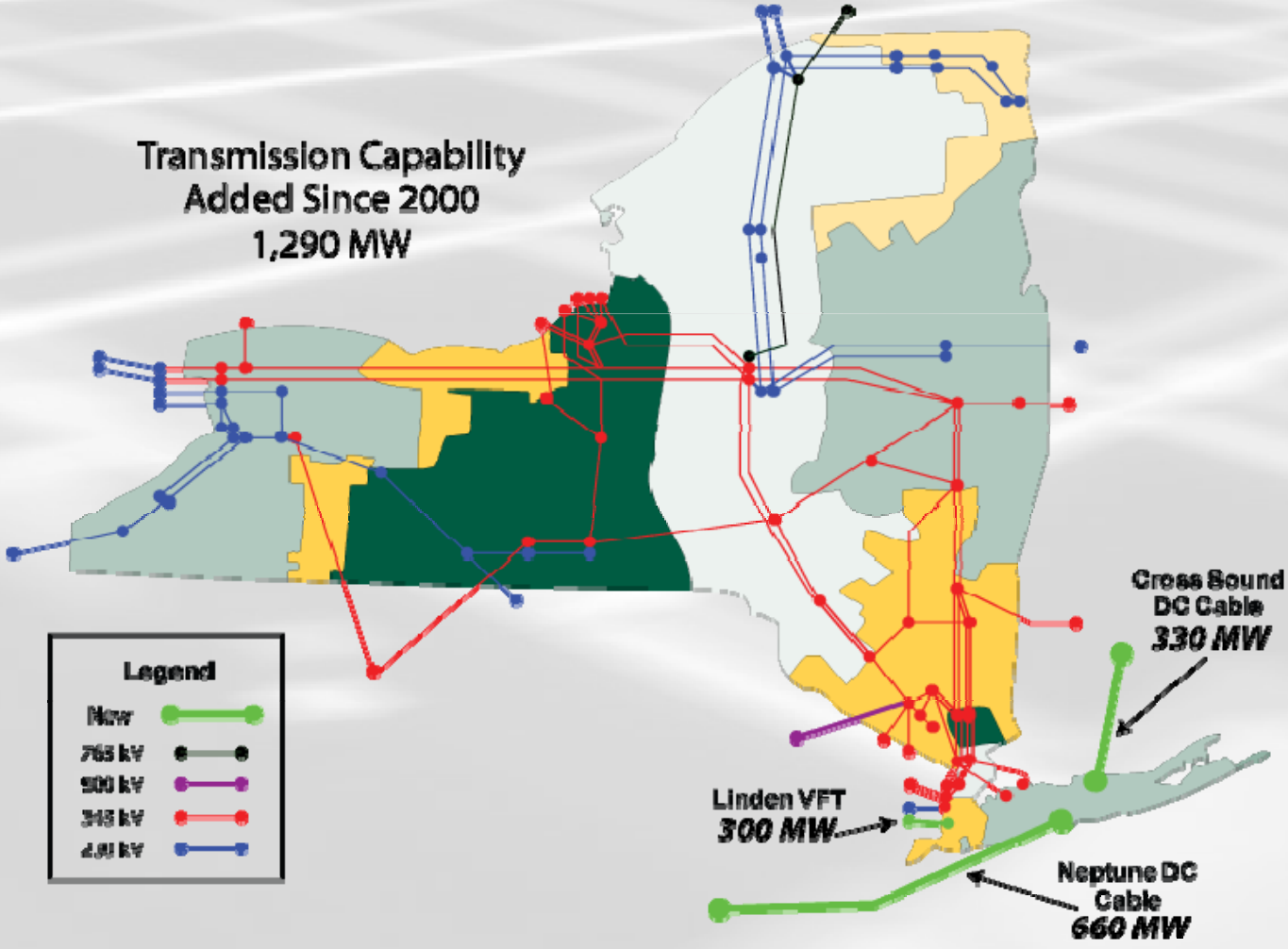
Windpower in New York

Existing Wind Generation -- 2011 (nameplate capacity) -- 1,348 MW

Proposed Wind Generation (nameplate capacity) -- 7,039 MW



Electric Transmission



NY Gas-Fired Generation

Gas or Duel-Fuel Generating Capacity

- ***Statewide – 55%***
- ***Long Island – 78%***
- ***New York City – 95%***

- **Daily gas procurement are managed by the generator owners**
- **Inability to meet electric obligations result in energy balancing charges and capacity derates**

FERC Order 698 (issued 6-25-2007)

- **Excerpts from FERC Order 698 include:**
  - **“Through this rulemaking, the Commission is seeking to improve coordination between the gas and electric industries in order to improve communications about scheduling of gas-fired generators”**
  - **“The (adopted NAESB) standards, for example, would require gas-fired power plant operators and pipelines to establish procedures to communicate material changes in circumstances that may affect hourly flow rates.”**
  - **“The (NAESB) standards further improve communication by requiring electric transmission operators and power plant operators to sign up to receive from connecting pipelines operational flow orders and other critical notices.”**
  - **“These (NAESB) standards require that, upon request, a gas-fired power plant operator must provide to the appropriate independent electric balancing authority or electric reliability coordinator pertinent information regarding its service levels for gas transportation and gas supply.”**

NYISO OATT Section 34, Attachment BB

General Application

- **NYISO tariff language publically available at www.NYISO.com**
- **This Coordination Protocol is applicable in circumstances in which the NYSIO or NY Transmission Owner has determined that the loss of a Generator due to a Gas System Event (physical loss or curtailment of natural gas to a generator) would likely lead to the loss of firm electric load.**
- **This Coordination Protocol also applies to communications following the declaration of an Operational Flow Order (OFO) or an electric Emergency Energy Alert (Level 2 or 3 Energy Emergency Alert defined by NERC Reliability Standard EOP-002)**
- **The purpose of this Coordination Protocol is to be one of mutual assistance. Accordingly, nothing in this Coordination Protocol creates any obligation for a gas Local Distribution Company (LDC) to modify an OFO or to make gas supplies available to a Critical Generator (a generator needed by the NYISO to avoid shedding load).**

NYISO OATT Section 34, Attachment BB

Notifications

- **Upon the declaration of an Operational Flow Order, OFO, by an LDC, the LDC shall notify the NY Department of Public Service, affected Power Plant Operators (PPOs), affected Transmission Owner, and the NYISO. The NYISO receives the OFO from the LDC Electronic Bulletin Board (EBB).**

- **Upon the declaration of a NERC Energy Emergency Alert (EEA) by the NYISO due to an electric capacity shortage, the NYISO shall notify the Transmission Owner (TO) of the EEA. The TO shall notify the LDC. The NYISO shall also notify the LDC of the EEA.**
  - **EEA Level 2: Public appeals, voltage reduction, interruption of non-firm electric load in accordance with applicable contracts, demand side management, utility conservation measures.**
  - **EEA Level 3: Firm Load Interruptions in progress or imminent**

- **Upon the occurrence of a Gas System Event (GSE) requiring a Power Plant Operator to derate a Generator, the PPO shall notify the TO of the derating and the TO shall notify the NYISO.**

NYISO OATT Section 34, Attachment BB

Assessment of Electric System after Generator Derate

- **Upon receiving notification from the Transmission Owner that the derating of a generator is the result of a Gas System Emergency, the NYISO shall assess the reliability of the bulk power system. The NYISO shall determine whether any generator derated due to a GSE is a Critical Generator (generator needed by the NYISO in order to prevent the shedding of electric load). The NYISO shall determine, for each hour, the amount of electric energy needed to avoid the shedding of firm electric load.**

NYISO OATT Section 34, Attachment BB

Assessment of Energy Requirments

- **The NYISO shall notify the TO that the Critical Generator has been identified and notify the TO of the amount of electric energy needed for each hour from the Critical Generator.**
- **The TO shall notify the PPO of that the derated Generator has been identified as a Critical Generator and communicate the amount of electric energy needed for each hour from the Critical Generator.**
- **The PPO of each Critical Generators shall notify each of the relevant LDCs delivering natural gas to the Critical Generators and notify the LDCs of the amount of natural gas needed for each hour by each of the Critical Generators.**

NYISO OATT Section 34, Attachment BB

Assessment of Gas Requirements

- **The PPO of each Critical Generator shall attempt to procure gas and notify the LDC of the amount of gas that it has procured. The PPO shall also inform the LDC of the estimated amount of gas still needed to operate in accordance with the NYISO's schedule for each hour that the Critical Generator is required.**
- **The LDC shall communicate to the PPO whether or not it is able to receive and deliver the gas volumes procured by the PPO to meet the Critical Generator's gas requirements in whole or in part.**
- **If an OFO is in effect, the LDC shall evaluate whether it is able to modify the OFO in a manner that would accommodate the delivery of all or any of the gas procured by the PPA. The LDC shall notify the PPO of each Critical Generator and the DPS whether it can receive and deliver all, any or none of the gas procured by the PPO. The PPO shall notify the TO of the available gas that can be delivered by the LDC and the expected generator capability**
- **The TO shall provide this updated information to the NYISO.**

Other Groups

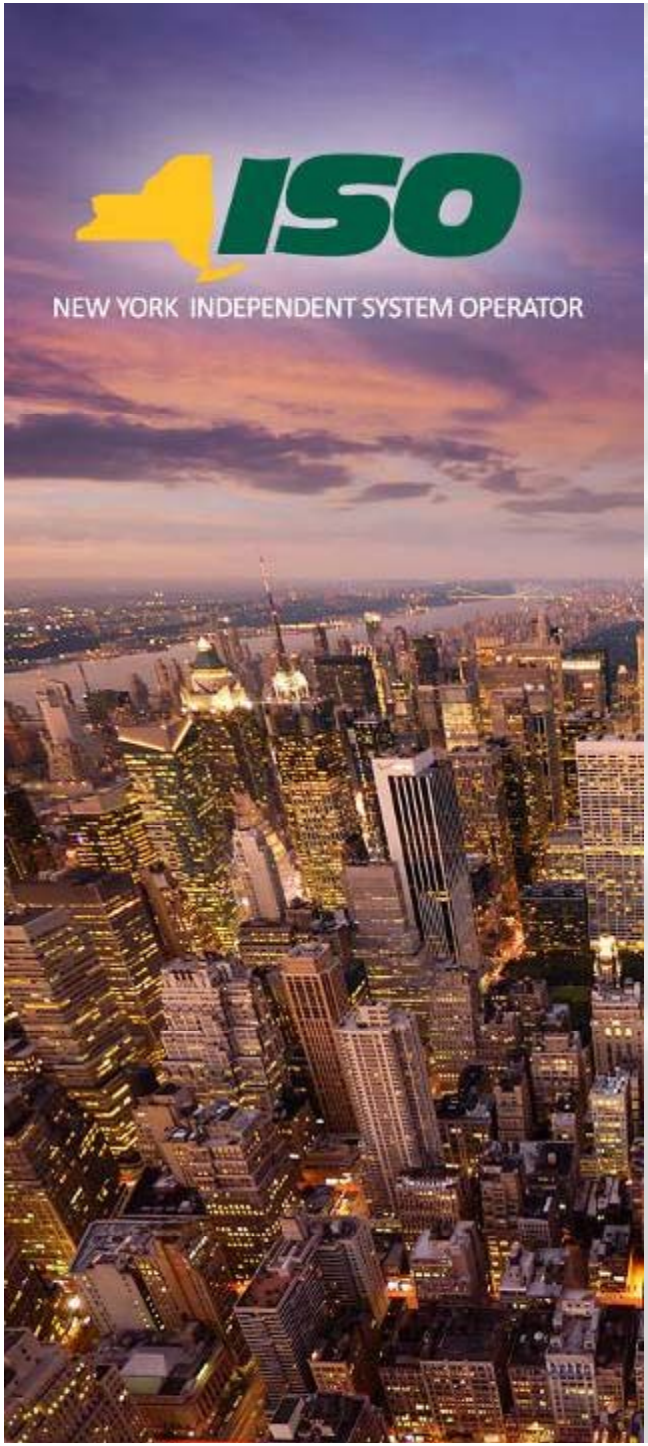
- **Natural Gas Reliability Advisory Group**
  - ***LDC's, Pipelines, Marketers, Customer Groups, NYSERDA, NYMEX***
- **Northeast Electric Gas Operating Committee**
  - ***Northeast Gas Pipelines, LDCs, ISO-NE, NYISO, and PJM***
- **NAESB**
- **Joint ISO-IRC & Interstate Natural Gas Association of America (INGAA)**
- **Others?**

Discussion Issues

- **Insufficient day-ahead gas nominations**
  - ***Under-nominations can create gas pipeline pressure problems even on non-peak days***
  - ***What can be done to minimize under-nominations?***
- **Firm gas customers receive first priority during peak design day conditions**
- **Coordination of scheduled or forced pipeline equipment outages with scheduled and forced electric transmission equipment outages**
  - ***Gas industry posts equipment outages posted on Electronic Bulletin Boards (by pipeline company?)***
  - ***Electric Transmission equipment outages posted on NYISO OASIS***
  - ***Opportunities for improved coordination?***

Future Discussion Topics

- **Continued discussion regarding communication and coordination improvements?**
  - **OFO informational improvements, maintenance scheduling processes**
- **Description of gas nomination process?**
- **Posting of northeast gas pipeline infrastructure (maps)?**
- **Future (gas & electric) planned infrastructure projects?**
- **Seasonal outlooks, infrastructure updates, publically available gas supply/pipeline study results?**
- **Predicted impacts of future market, regulatory, or business changes?**
- **Electric versus gas day definition?**
- **Comments to future NYISO Gas Study Scope?**
- **Role and/or opportunities for gas flexibility to incorporate intermittent resources in the electric markets?**
- **Scope of other joint electric-gas industry groups?**



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.

www.nyiso.com