NYISO: Gas-Electric Coordination

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Fuel Mix – Statewide

Generating Capacity by Fuel Source

- Dual Fuel (Gas & Oil) 47%
- Nuclear 14%
- Hydro 11%
- Hydro Pumped Storage 4%
- Wind 4%
- Other Renewables 1%
- Gas 8%
- Oil 7%

Natural gas supplies 55% of statewide generating capacity (47% is dual fuel capacity that can use gas or oil)
Fuel Mix – NYC & Long Island
Generating Capacity by Fuel Source

New York City

- Gas: 13%
- Dual Fuel (Gas & Oil): 83%
- Oil: 4%

Long Island

- Dual Fuel (Gas & Oil): 66%
- Gas: 7%
- Oil: 24%
- Renewables: 3%
Proposed Generation

Proposed Power Projects
(New York Independent System Operator Interconnection Study Queue, March 31, 2013)

Projects using natural gas (gas and dual fuel) account for nearly 70% of all proposed generating capacity.

*N includes methane, wood and solid waste
# Differences in Market Timing

- **Operating Day Differences**
  - **Gas Day:** 10 a.m. – 10 a.m. (ET)
  - **Electric Day:** 12:00 a.m. – 12:00 a.m.

- **Scheduling Differences**

<table>
<thead>
<tr>
<th>Day Ahead</th>
<th>Electric Day</th>
<th>Day Ahead</th>
<th>Gas Day</th>
</tr>
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<tbody>
<tr>
<td>Bids: 5 a.m.</td>
<td>RTC/RTD: 75 min and 5 min</td>
<td><strong>Timely Nomination Cycle:</strong> 12:30 p.m.</td>
<td>Intraday 1 (ID1) Cycle: 11:00 a.m.</td>
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<tr>
<td>Schedule: 11 a.m.</td>
<td></td>
<td>Evening Nomination Cycle: 7:00 p.m.</td>
<td>Intraday 2 (ID2) Cycle: 6:00 p.m.</td>
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Challenges Related to Timing Differences

1. Electric and Gas Operating Days
   - End of the Gas Day overlaps with the morning load pick-up
   - May lead to need for balancing

2. Electric and Gas Scheduling
   - While there is generally flexibility related to gas nominations, most gas purchasing takes place weekday mornings, with weekend packages
   - Gas is not easily purchased (illiquid gas market) on weekends, holidays, evening, and overnight hours
Potential Reliability Concerns

- Depending on:
  - How much gas a generator nominated
  - How much gas a generator already burned
  - Pipeline system conditions at the time
  - If the pipeline system is operating at peak capacity

- A generator may or may not be able to respond to RT dispatch signals

- Could even have a situation where a generator is called on outside of DA schedule, pipeline/LDC can manage the imbalance, but there is no marketer to arrange the gas purchase
Electric-Gas Coordination Working Group

- Open discussions in ongoing meetings includes Gas Pipelines, LDCs, Generators, Gas Suppliers
  - Timing processes – Price certainty versus volume certainty
  - Scheduling (Supply) – Holiday issues, off peak
  - Nomination (Transportation) – NAESB schedules & gas tariff flexibility
  - Balancing
  - Gas Operating Day Timing
  - Cost Recovery Discussions (e.g. IBRT)
  - Actual implications of Operational Flow Orders
  - Actual peak performance of both gas and electric systems
  - Seasonal Assessments
  - Fuel Capability Surveys
  - Input to Regional Study Scope & Objectives
Gas-Electric Coordination

- Infrastructure Maintenance
  - *NYISO has initiated a process to review and monitor pipeline, transmission, and generation outages.*

- NYISO Control Center Visualization
  - *Gas Pipeline System*
    - OFOs and status of pipeline alerts
    - During cold snaps - gas nominations, gas burned, and alternate fuel capability & inventory

- **Underway:** Means to improve several hour ahead generator operating capacity
  - *Reality is a generator may not know whether or not they will be able to secure gas supplies over next several hours*
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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