Winter Preparedness of the Natural Gas and Electric Supply

2016-2017 Winter Season

Office of Electric, Gas, and Water
Office of Consumer Services

October 13, 2016
Albany, New York
Natural Gas
Winter Outlook

Cynthia H. McCarran
Deputy Director of Gas & Water
Office of Electric, Gas, and Water
HDD % Warmer or (Colder) than Normal
(Heating Seasons Nov 1 - March 31)

<table>
<thead>
<tr>
<th>Winter 01-02</th>
<th>Winter 02-03</th>
<th>Winter 03-04</th>
<th>Winter 04-05</th>
<th>Winter 05-06</th>
<th>Winter 06-07</th>
<th>Winter 07-08</th>
<th>Winter 08-09</th>
<th>Winter 09-10</th>
<th>Winter 10-11</th>
<th>Winter 11-12</th>
<th>Winter 12-13</th>
<th>Winter 13-14</th>
<th>Winter 14-15</th>
<th>Winter 15-16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albany</td>
<td>16.9%</td>
<td>-6.2%</td>
<td>0.0%</td>
<td>-1.3%</td>
<td>9.9%</td>
<td>5.7%</td>
<td>3.1%</td>
<td>1.2%</td>
<td>9.9%</td>
<td>-2.1%</td>
<td>20.5%</td>
<td>4.2%</td>
<td>-9.3%</td>
<td>-9.7%</td>
</tr>
<tr>
<td>NYC</td>
<td>21.3%</td>
<td>-8.4%</td>
<td>-2.9%</td>
<td>-0.2%</td>
<td>8.4%</td>
<td>6.3%</td>
<td>2.8%</td>
<td>-2.1%</td>
<td>5.8%</td>
<td>-4.0%</td>
<td>24.3%</td>
<td>0.4%</td>
<td>-9.7%</td>
<td>-12.2%</td>
</tr>
</tbody>
</table>
Adequate Capacity and Supplies

- Review of expected customer requirements for design weather conditions for this winter.
- Review of supplies to meet expected customer requirements for design weather conditions for this winter.
- Staff will continue to monitor supply, prices and interruptible customers throughout the winter.
NYMEX Gas Futures Prices

Forecast for November 2016 and beyond as of October 7, 2016
## LDC Commodity Portfolio

<table>
<thead>
<tr>
<th></th>
<th>2016-17 Typical Portfolio</th>
<th>2015-16 Winter Forecast $/dth</th>
<th>2015-16 Winter Actual $/dth</th>
<th>2016-17 Winter Forecast $/dth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Storage</td>
<td>33%</td>
<td>$2.01</td>
<td>$1.82</td>
<td>$1.79</td>
</tr>
<tr>
<td>Hedged Supply</td>
<td>14%</td>
<td>$3.10</td>
<td>$2.87</td>
<td>$2.56</td>
</tr>
<tr>
<td>Flowing Gas</td>
<td>53%</td>
<td>$2.05</td>
<td>$1.65</td>
<td>$2.44</td>
</tr>
<tr>
<td>Average Winter Commodity Price</td>
<td></td>
<td>$2.16</td>
<td>$1.88</td>
<td>$2.24</td>
</tr>
</tbody>
</table>

### New York State Gas Utility Typical 2016-17 Winter Supply Portfolio

- **Physical Storage**: 33%
- **Hedged Supply**: 14%
- **Flowing Gas**: 53%

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
<th>Average Winter Commodity Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage</td>
<td>33%</td>
<td>$2.16</td>
</tr>
<tr>
<td>Hedged</td>
<td>14%</td>
<td>$3.10</td>
</tr>
<tr>
<td>Unhedged</td>
<td>53%</td>
<td>$2.05</td>
</tr>
</tbody>
</table>

**Average Winter Commodity Price**

- **2016-17**: $2.24
- **2015-16**: $2.44
- **2015-16 Winter Actual**: $1.88
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>2015-16 Actual Weather</td>
<td>$610</td>
<td>$650</td>
<td>$694</td>
<td>+13.7%</td>
<td>+6.7%</td>
</tr>
</tbody>
</table>

Statewide Avg. Winter Bills

Residential Heating Customer
Typical Residential Customer Gas Supply Prices

- $1.00
- $2.00
- $3.00
- $4.00
- $5.00
- $6.00

Year:
- 2011/2012
- 2012/2013
- 2013/2014
- 2014/2015
- 2015/2016
- Forecast 2016/2017

State:
- Down State
- Upstate

$/dt
Coordination with Oil Industry

- Interruptible gas customers must meet certain requirements to maintain alternate fuel inventories so that there are no anticipated problems with fuel switching.

- LDCs will be conducting tests and may inspect alternate fuel burning equipment of interruptible customers where needed to ensure compliance with alternate fuel inventory requirements.

- Communications protocol was developed last winter season, and it will continue to be implemented. We have issued the protocols for comment and will bring it to the Commission by January to make them enforceable.
Summary

- NY gas utilities have contracted for adequate capacity and supplies and are ready to meet 2016-2017 winter conditions.

- Commodity prices are in a downward trend compared to recent history.

- Compared to the five year average, customer bills this winter are expected to be the same or lower.
Bulk Electric System Preparedness

Leka P. Gjonaj
Electric Bulk Systems
Office of Electric, Gas, and Water
New York State Historic Coincident Peaks

**Historic Coincident Peaks**

- **Record Winter Peak:** 25,738
- **Forecast Winter:** 24,445
- **Record Summer Peak:** 33,956
- **Forecast Summer:** 32,076

<table>
<thead>
<tr>
<th>Year</th>
<th>Winter</th>
<th>Summer</th>
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<tbody>
<tr>
<td>1999</td>
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<tr>
<td>2017</td>
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</tbody>
</table>
## New York Winter 2016/17 Capability & Load

<table>
<thead>
<tr>
<th>NYISO Provided Data</th>
<th>MW</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016 Generation</td>
<td>40,092</td>
</tr>
<tr>
<td>New York Special Case Resources (SCRs)</td>
<td>842</td>
</tr>
<tr>
<td>External Purchase Contracts</td>
<td>504</td>
</tr>
<tr>
<td>LESS: Total Projected Capacity Outages</td>
<td>4,940</td>
</tr>
<tr>
<td><strong>TOTAL 2015 CAPACITY</strong></td>
<td><strong>36,498</strong></td>
</tr>
<tr>
<td>Load Forecast</td>
<td>24,445</td>
</tr>
<tr>
<td>Operating Reserve Requirement</td>
<td>2,620</td>
</tr>
<tr>
<td>Capacity Margin</td>
<td>9,433</td>
</tr>
</tbody>
</table>
Major Generation Facilities

- Staff reached out to major generation facility owners located primarily on the southeastern portion of New York.

- Lessons learned and beneficial changes made as result of the 2013/2014 Polar Vortex are continuing.

- On-site storage and replenishment of fuel oil is a critical issue.

- State Agencies and NYISO Winter Protocol
NYISO

- **Winter 2015/2016**
  - Enhanced shortage pricing curves – incentives for generators to meet day-ahead commitments – in effect as of November 4th, 2015
  - Increase total reserve requirements – in effect as of November 4th, 2015
  - NYISO and interstate pipelines can now share operational information with each other for the purpose of promoting reliable service or operational planning on either system

- **Winter 2016/2017**
  - Continue with prior enhancements and activities.

- **Neighboring RTO/ISO**
  - ISO New England
    - Continued Winter Reliability Program (WRP)
      - Compensation for unused oil inventory
      - Compensation for unused LNG contract volume
      - Demand response
      - Incentives for commissioning dual-fuel capacity
  - PJM
    - Enhanced Capacity Performance Proposal to begin winter 2016/2017
Electric Utility Portfolio
Price Volatility and
Supply Price Outlook

Paul J. Darmetko Jr.
Electric Rates & Tariffs
Office of Electric, Gas, and Water
NYISO Spot Market vs. Utility Full Service Residential Customer Supply Portfolio Volatility (Statewide 12-month rolling average)

Coefficient of Variation

Portfolio vs. Market
Average Energy Price Comparison
Winter Season

New York City LBMP ($/MWH)
- NYMEX Futures Dec 2015 - Mar 2016: $26.34
- Spot Market Dec 2015 - Mar 2016: $19.17
- NYMEX Futures Dec 2016 - Mar 2017: $40.68
- NYMEX Futures Dec 2017 - Mar 2018: $55.43

NY Hudson Valley LBMP ($/MWH)
- NYMEX Futures Dec 2015 - Mar 2016: $25.74
- Spot Market Dec 2015 - Mar 2016: $25.74
- NYMEX Futures Dec 2016 - Mar 2017: $44.04
- NYMEX Futures Dec 2017 - Mar 2018: $53.51

NY West LBMP ($/MWH)
- NYMEX Futures Dec 2015 - Mar 2016: $19.17
- Spot Market Dec 2015 - Mar 2016: $25.74
- NYMEX Futures Dec 2016 - Mar 2017: $44.04
- NYMEX Futures Dec 2017 - Mar 2018: $67.94

NYMEX Futures Dec 2015 - Mar 2016: $40.68
Spot Market Dec 2015 - Mar 2016: $53.51
NYMEX Futures Dec 2016 - Mar 2017: $65.26
NYMEX Futures Dec 2017 - Mar 2018: $67.94
Statewide Weighted Average Full Service Residential Supply Price

- Winter 2011-2012
- Winter 2012-2013
- Winter 2013-2014
- Winter 2014-2015
- Winter 2015-2016
- Est. Winter 2016-2017

Cents per kWh
DPS Outreach Efforts

- Outreach staff will provide materials on energy assistance, gas safety, and other issues that will be available to community based organizations
2016-2017 Winter Preparedness

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