March 18, 2020

Update on New England Natural Gas Developments

Presentation to:

*ISO-NE Planning Advisory Committee*

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Northeast Gas Association
Topic Areas

- Recent winter.
- Infrastructure developments.
- Regional developments.
- Safety & mutual aid.
About NGA

- Non-profit trade association
- Local gas utilities (LDCs) serving New England, New York, New Jersey, Pennsylvania
- Several interstate pipeline companies
- LNG importers, suppliers and transporters; CNG suppliers
- Over 400 “associate member” companies, from industry suppliers and contractors to electric grid operators
- www.northeastgas.org
NGA’S ANTITRUST COMPLIANCE PROCEDURES

Adopted by the NGA Board of Directors on June 20, 2018

Objective
The Northeast Gas Association (NGA) and its member companies are committed to full compliance with all laws and regulations, and to maintaining the highest ethical standards in the way we conduct our operations and activities. Our commitment includes strict compliance with federal and state antitrust laws, which are designed to protect this country’s free competitive economy.

Responsibility for Antitrust Compliance
Compliance with the antitrust laws is a serious business. Antitrust violations may result in heavy fines for corporations, and in fines and even imprisonment for individuals. While NGA’s attorneys provide guidance on antitrust matters, you bear the ultimate responsibility for assuring that your actions and the actions of any of those under your direction comply with the antitrust laws.

Antitrust Guidelines
In all NGA operations and activities, you must avoid any discussions or conduct that might violate the antitrust laws or even raise an appearance of impropriety. The following guidelines will help you do that:

- **Do** consult counsel about any documents that touch on sensitive antitrust subjects such as pricing, market allocations, anti-employee poaching practices, refusals to deal with any company, and the like.
Northeast U.S. Natural Gas Service Areas

Gas Customers: 13.5 million
% of Home Heating: 59%
% of Power Gen: >40%
RECENT WINTER
Winter Season, in Brief

- No extended cold periods, no dramatic weather or sendout.

- Pipelines operated well. Algonquin completed its integrity management review at end of Dec. ‘19. LNG facilities operated fine.

- Four monitoring calls held of NGA Gas Supply Task Force – no actions needed.

- Regular communications with ISOs in region, NPCC.

Heat Degree Days, Nov. 2019 - Feb. 2020

New England: 7.3% warmer

Mid-Atlantic: 8.2% warmer

Source: U.S. NOAA.
EIA projects U.S. stocks by the end of this October could be at highest level ever. As of week ending March 6, stocks are at 2 trillion cubic feet (Tcf), which is 12% higher than the five-year average. East region stocks are 20% higher.
U.S. Production & Consumption Set New Records Last Year

U.S. natural gas production in 2019 set new all-time records.

Dry production level was 92.2 Bcf/d.

U.S. natural gas consumption in 2019 set new all-time record: **85 Bcf/d**.

EIA: “U.S. natural gas consumption grew in the electric power sector by 2.0 Bcf/d, or 7%, but remained relatively flat in the commercial, residential, and industrial sectors.”

Charts: U.S. EIA, March 2020
U.S. Commodity Price Trends & Forecast: Oil

West Texas Intermediate (WTI) crude oil price and NYMEX confidence intervals
dollars per barrel

Note: Confidence interval derived from options market information for the five trading days ending Mar 9, 2020. Intervals not calculated for months with sparse trading in near-the-money options contracts.

Sources: Short-Term Energy Outlook, March 2020, and CME Group

Chart: U.S. EIA, March 10, 2020
U.S. Commodity Price Trends & Forecast: Natural Gas

U.S. natural gas prices
dollars per thousand cubic feet

Sources: Short-Term Energy Outlook, March 2020, and Refinitiv

Chart: U.S. EIA, March 10, 2020
INFRASTRUCTURE DEVELOPMENTS
Recent & Current Pipeline Projects, 2019-20

2019 Projects, New England:
◆ PNGTS: “Portland XPress” [phase 2]
◆ PNGTS: “Westbrook XPress” [phase 1]

2020 Projects, New England:
◆ Enbridge: “Atlantic Bridge Project” [2nd phase]
◆ PNGTS: “Portland XPress” [phase 3]
◆ Tennessee: “Station 261 Upgrade”
Projects with Delayed Timeline

- Williams (Transco): “Northeast Supply Enhancement”
- AGL, NJ utilities, Enbridge: “PennEast”
- National Fuel Gas: “Northern Access”
REGIONAL DEVELOPMENTS
U.S. natural gas production in 2019 set new all-time record: **92 Bcf/d**.

Marcellus Shale producing **~32 Bcf/d**.

PA is **2nd** largest gas producing state in U.S.
Residential Customer Growth in Region Has Continued

Since 2012, natural gas has added over 1 million new household customers in the Northeast states.
### Current Residential Heating Fuel Mix by Region

<table>
<thead>
<tr>
<th>Region</th>
<th>Natural Gas</th>
<th>Heating Oil</th>
<th>Electricity</th>
</tr>
</thead>
<tbody>
<tr>
<td>New England</td>
<td>40%</td>
<td>35%</td>
<td>14%</td>
</tr>
<tr>
<td>Northeast</td>
<td>59%</td>
<td>21%</td>
<td>16%</td>
</tr>
</tbody>
</table>

**New England Homes, Fuel Type %**
- Natural Gas: 40%
- Heating Oil: 35%
- Electricity: 14%

**Northeast Homes, Fuel Type %**
- Natural Gas: 59%
- Heating Oil: 21%
- Electricity: 16%

Source: U.S. Census Bureau
Some Recent Additions to Gas Generation Capacity

- **Footprint Power Salem Harbor**
  - Salem, MA
  - 674 MWs
  - Online June 2018

- **CPV Towantic Energy Center**
  - Oxford, CT
  - 805 MWs
  - Online June 2018

- **PSEG Power Bridgeport Harbor Station 5**
  - Bridgeport, CT
  - 485 MWs
  - Online June 2019

- **CPV Valley Energy Center**
  - Wawayanda, NY
  - 680 MWs
  - Online Fall 2018

- **NRG Canal 3**
  - Sandwich, MA
  - 333 MWs
  - Online June 2019

- **Exelon West Medway**
  - Medway, MA
  - 200 MWs
  - Online June 2019
Proposed Municipal Gas Bans

Summer 2019: Berkeley and San Jose, CA passed ordinances to halt new natural gas installations in buildings/homes.

Nov. 2019: Brookline, MA town meeting approves by-law to prohibit fossil fuels to heat new commercial or residential buildings starting in January 2021. Must be approved by Attorney General.

Dec. 2019: Ordinance Committee of Cambridge City Council approves motion to prohibit new natural gas connections in city buildings; now goes to full Council for consideration. City Solicitor observes that such a prohibition might not be legal.

Dec. 2019: NGA offered testimony at Cambridge public hearing objecting to proposed ordinance – citing energy affordability & customer choice as chief reasons.

Harvard’s Planning Office submitted a letter to the Ordinance Committee, posing some questions:

“What analysis has been done to determine that a prohibition of natural gas is feasible?”

“Does the existing electrical infrastructure have the capacity to take on this significant additional load that would occur if this were adopted?”

“Would oil still be allowed?”
According to MA DEP’s latest GHG inventory report, natural gas systems in MA = 1.1% of total state GHG emissions (it was 2.6% in 1990). According to CT PURA’s recent GHG inventory, “natural gas leakage” sector equals <1% of total.
Methane emissions from natural gas systems in MA have declined by 68% since 1990, according to MA DEP’s latest GHG inventory report. Nationally, methane emissions from natural gas systems are down ~24% since 1990.
Northeast States Lead U.S. in Gas Efficiency Investments

9 Northeast states = $572 million investment in 2018, 40% of U.S. total.

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We Support April as National Safe Digging Month
Safety System Review
Post-Merrimack Valley

- Overpressurization incident on Sept. 13, 2018 in Lawrence, MA, impacting Lawrence, Andover, N. Andover.


- NGA & several member utilities working with consultant (The Blacksmith Group) to develop “Pipeline Safety Management System” for MA (and other states’) gas utilities.
NGA’s Annual Regional Market Trends Forum

Postponed

NGA 2020 Regional Market Trends Forum - “Natural Gas in the Northeast”
April 23, 2020
Hartford, CT
Questions?