Northeast Natural Gas Market: Overview and Focal Points

Northeast Natural Gas Region

Source: Velocity Suite Intelligent Map

Updated October 15, 2009

July 2010
Overview:

**Market Description**
Natural gas use is increasingly important to the Northeast. Though traditionally the Northeast has been a winter peaking region, increased reliance on natural-gas fired generation has evened out annual gas use. Increased dual requirements for natural gas as a space heat fuel and utilization of gas-fired plants has imposed greater challenges on the Northeast, compared to other regions, in aligning commercial and operating conditions between the gas and power industries. The Northeast has little indigenous production (mainly in the Appalachian basin) and none in New England although this trend could begin to change with the successful exploitation of the Marcellus Shale play located in the heart of Appalachia.

Beginning in 2009 the Rockies Express Pipeline began service to the Northeast opening up less expensive Rockies gas to the market. To take advantage of the additional supply pipeline operators added over 3 Billion Cubic Feet per day of additional capacity to the market between 2008 and quarter one 2009, the most in over a decade. Despite increased gas use for power generation, pipeline utilization remains highly seasonal; major regional pipelines often operate at high load factors during the winter resulting in basis differentials to upstream liquid trading points that may greatly exceed firm transportation tariff levels. Rockies and Marcellus Shale supply to the Northeast will become increasingly competitive with traditional supply from the Gulf. The influx of natural gas supply could help moderate the severe basis spikes that traditionally occur during winter peak demand days. The Northeast relies upon conventional and LNG storage to meet peak-day gas needs. LNG plays a critical role in the overall supply mix and at times accounts for up to 30 percent of peak-day gas needs in New England. Market participants in the Northeast can draw upon the nation’s most extensive portfolio of dual, gas-oil fired power plants to flexibly respond to market price and load changes.

**Geography**
Major Trading Hubs
Algonquin Citygates, Columbia Gas Appalachia, Dominion South Point, Dracut, Iroquois Zone 2, Niagara, Texas Eastern M3, Transco Zone 6 NY, and, Transco Zone 6 Non-NY.

Pipeline Flows

**Average Daily Southern Zones Deliveries to the Northeast**
- 2005: 6.9 Bcf/d
- 2006: 6.6 Bcf/d
- 2007: 7.3 Bcf/d
- 2008: 7.7 Bcf/d
- 2009: 8.2 Bcf/d (Jan-June)

Major Pipelines: Transco, Tennessee, Texas Eastern and Columbia carry a significant amount of gas from the Gulf coast to the Northeast.

**Average Daily Mid-Continent Deliveries to the Northeast**
- 2005: 1.6 Bcf/d
- 2006: 1.6 Bcf/d
- 2007: 1.5 Bcf/d
- 2008: 1.5 Bcf/d
- 2009: 1.3 Bcf/d (Jan-June)

Major Pipelines: Columbia, Texas Eastern and Dominion move gas from the Midwest to the Northeast.
Imports and Exports

**Average Daily Imports from Canada into the Northeast**
2005: 2.8 Bcf/d  
2006: 2.7 Bcf/d  
2007: 2.7 Bcf/d  
2008: 2.5 Bcf/d  
2009: 2.0 Bcf/d (Jan-June)

**Major Importers**
Maritimes and Northeast pipeline, Tennessee Gas Pipeline and Iroquois Gas Transmission System flow the majority of the gas from Canada to the Northeast. In 2009 the Brunswick Pipeline began service delivering LNG from the Canaport LNG terminal into New England. Together, they represent the following percentages of pipeline gas imports:

2005: 83%  
2006: 85%  
2007: 88%  
2008: 89%  
2009: 84% (Jan-June)
Average Daily LNG Send out:
2005: 0.3 Bcf/d
2006: 0.3 Bcf/d
2007: 0.5 Bcf/d
2008: 0.2 Bcf/d
2009: 0.3 Bcf/d (Jan-June)

Note: Represents daily receipts from Everett to Tennessee and Algonquin. 2009 numbers also represent the addition of Northeast Gateway Terminal deliveries to Algonquin. Excludes volumes delivered via truck, consumed at Mystic or other distribution.

Contact Information
For specific issues regarding the Northeast Natural Gas Region please contact the following Analysts:

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## Annual Average Spot Hub Prices

### Annual Average Day Ahead Prices ($/MMBtu)

<table>
<thead>
<tr>
<th>Hub Type</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>5-Year Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algonquin Citygates</td>
<td>$9.75</td>
<td>$7.40</td>
<td>$8.17</td>
<td>$10.06</td>
<td>$4.80</td>
<td>$8.04</td>
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<tr>
<td>Transco Z6 NY</td>
<td>$10.03</td>
<td>$7.37</td>
<td>$8.46</td>
<td>$10.13</td>
<td>$4.89</td>
<td>$8.18</td>
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<tr>
<td>Transco Z6 non-NY</td>
<td>$9.63</td>
<td>$7.30</td>
<td>$7.77</td>
<td>$9.85</td>
<td>$4.64</td>
<td>$7.84</td>
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<tr>
<td>Columbia-Appalachia</td>
<td>$9.18</td>
<td>$6.97</td>
<td>$7.20</td>
<td>$9.18</td>
<td>$4.11</td>
<td>$7.33</td>
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<tr>
<td>Niagara</td>
<td>$8.88</td>
<td>$6.96</td>
<td>$7.32</td>
<td>$9.25</td>
<td>$4.33</td>
<td>$7.35</td>
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</table>

Source: Derived from Platts data. Updated January 8, 2010
Northeast Natural Gas Market: Spot Prices and Basis

Source: Derived from Platts data.

Updated July 9, 2010
Northeast Natural Gas Market: Average Basis to Henry Hub

Northeastern Monthly Average Basis Value to Henry Hub

Source: Derived from Platt's data.

Updated July 9, 2010
Published and Traded Daily Spot Volumes at Algonquin

Source: Derived from Platts and ICE data.

Updated July 9, 2010
Northeast Natural Gas Market: Trading Volumes at Transco Zone 6

Published and Traded Daily Spot Volumes at Transco Zone 6

Volume in Thousands of MMBtu

Source: Derived from *Platts* and *ICE* data.

Updated July 9, 2010
**Sendout From New England LNG Terminals**

Source: Derived from Bentek data.

Updated April 9, 2010
Northeast Natural Gas Market: Maritimes Pipeline Flows

Maritimes Pipeline Flows

Source: Derived from Bentek data.

Updated July 9, 2010
Northeast Region Underground Working NG In Storage

Source: Derived from EIA data. Due to a change in methodology, as of October ’09 the NE region includes KY, OH, and VA. Updated July 9, 2010
Daily Northeast Natural Gas Demand
All Sectors

Source: Derived from Bentek Energy and Weekly NOAA data.
Northeast Natural Gas Consumption for Power Generation

2005 - 2008 Range
2009
2010

Source: Derived from Bentek Data

Updated July 9, 2010
Natural Gas Infrastructure Additions

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>IN SERVICE</th>
<th>MAX CAPACITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) REX (Clarington)</td>
<td>Nov-09</td>
<td>1.800 Bcfd</td>
</tr>
<tr>
<td>2) DTI Hub</td>
<td>Dec-09</td>
<td>0.200 Bcfd</td>
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<tr>
<td>3) TETCO Northern Bridge</td>
<td>Nov-09</td>
<td>0.150 Bcfd</td>
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<td>4) Transco Sentinel Phase II</td>
<td>Nov-09</td>
<td>0.102 Bcfd</td>
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<td>5) Iroquois 09/09 Phase III</td>
<td>Nov-09</td>
<td>0.025 Bcfd</td>
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<td>6) AGT J-2 Loop</td>
<td>Sep-09</td>
<td>0.140 Bcfd</td>
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<td>7) Neptune Offshore LNG</td>
<td>Nov-09</td>
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<td>8) Canaport LNG</td>
<td>Jun-09</td>
<td>1.000 Bcfd</td>
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Source: Derived from Bentek data.

Updated November 5, 2009