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NGA 2012 Statistical Guide




Northeast GAS ASSOCIATION

STATISTICAL GUIDE TO THE NORTHEAST U.S. NATURAL GAS INDUSTRY *2012*

An annual review of statistics and trends relating to the region's natural gas industry

Northeast GAS ASSOCIATION

December 2012

The NGA *Statistical Guide* is intended as an introduction to the natural gas market in the Northeast U.S. region of New England, New York and New Jersey. Included are basic statistics on end-use markets, infrastructure, and natural gas issues and trends - from technology applications to environmental benefits.

Regional information is updated through calendar year 2011, where available. As much as possible the most recent data from other sources are presented.

NGA is grateful to its members companies for their cooperation and support in providing data and information for presentation in a regional tabulation.

Other particularly helpful sources of information are the U.S. Department of Energy/Energy Information Administration, the Federal Energy Regulatory Commission, Canada's National Energy Board, the American Gas Association, and the New York State Energy Research and Development Authority.

The Guide is prepared by Stephen Leahy of NGA. Please feel free to forward any suggestions, comments and revisions to: leahy@northeastgas.org.

NORTHEAST GAS MARKET AT-A-GLANCE

	NEW ENGLAND	***NEW YORK***	***NEW JERSEY***
Gas Customers	**2.5 million** (2,270,086 residential; 251,892 commercial & industrial)	**4.7 million** (4,331,228 residential; 406,794 commercial & industrial)	**2.9 million** (2,658,497 residential; 240,777 commercial & industrial)
Annual Consumption (2011)	**910 Bcf**	**1,199 Bcf**	**655 Bcf**
Interstate Pipelines	**5**	**11**	**5**
Miles of transmission pipeline	**2,528**	**4,551**	**1,469**
Underground Storage	**-**	**246 Bcf**	**-**
LNG import facilities	**3**	**-**	**-**
Gas production in-state, annual (2011)	**-**	**31 Bcf**	**-**
Gas Efficiency Program Budgets (2011)	**$155 million**	**$119 million**	**$106 million**
Primary energy consumption, leading fuels, % (2010)	**Natural Gas, 28%** Oil, 45% Nuclear, 12% Coal, 5% Hydro, 2% Renewables, 8% Elec. Flows, <1%	**Natural Gas, 33%** Oil, 36% Nuclear, 12% Coal, 4% Hydro, 7% Renewables, 5% Elec. Flows, 3%	**Natural Gas, 27%** Oil, 44% Nuclear, 14% Coal, 3% Renewables, 2% Elec. Flows, 9%
Gas utility sales revenues (2010)	**$3.7 billion**	**$5.2 billion**	**$3.5 billion**
Gas as a share of residential home heating fuels (2011)	**37%**	**56%**	**74%**
Total population	**14.4 million**	**19.5 million**	**8.8 million**
Gross state domestic product (GDP)	**$813 billion**	**$1,158 billion**	**$487 billion**
GDP as % of U.S. total	**5.3%**	**8%**	**3.3%**

Sources: NGA, NYSERDA, NY DEC, NY PSC, NJ BPU, American Council for an Energy Efficient Economy, AGA, U.S. EIA, PHMSA, U.S. Census Bureau, U.S. BEA
Updated by NGA, January 2013

SECTIONS

The Year in Review 2012

The Northeast Gas Association (NGA) is pleased to present our annual summary of market characteristics and recent developments in the Northeast U.S. region. This overview will summarize key features of the natural gas system in New England, New York and New Jersey, followed by a discussion of key market issues in 2012.

MARKET TRENDS

Population & Economy

The Northeast region comprises the states of Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont. The composite population is 42.8 million (12% of the U.S.), with a civilian labor force of 22 million. Total gross state domestic product for the multi-state region is $2.46 trillion (16.6% of the U.S. total).

Regional Natural Gas Market

There are 10 million natural gas customers in the 8-state region (14% of the U.S. total of 70 million). Total annual gas sendout on the regional gas system is 2.76 trillion cubic feet (Tcf), or 12% of U.S. total consumption (measured in volumes delivered to consumers).

Primary Energy

Natural gas represents 28% of the primary energy consumption of New England, 27% of New Jersey's, and 33% of New York's, compared to the national average of 25% (based on U.S. EIA data, 2010). The eight-state region consumes less coal than the national average, and generally more oil, nuclear and renewables (primarily hydro and biomass) than the national average.

Gas Customers

"Year in Review 2012"

There are 4.7 million natural gas customers in New York. Residential customers number roughly 4.3 million; commercial and industrial customers number over 400,000.

There are 2.5 million natural gas customers in New England. Residential customers number 2.3 million; commercial and industrial customers number about 260,000.

There are 2.9 million natural gas customers in New Jersey. Residential customers number 2.6 million; commercial and industrial customers number about 241,000.

Gas is the leading home heating fuel in New York, at 56%, with fuel oil second at 28%. In New England, fuel oil leads at 42%, with gas at 37%. In New Jersey, gas is the clear leader, with 74% of the primary home heating market and with oil at 12%. Taking the eight state area as a whole, gas represents 53% of the home heating market, and heating oil 29%.

Consumption/Sendout by Sector

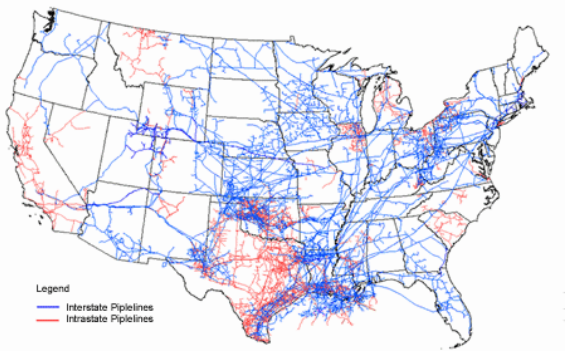
Total annual sendout on the New York gas system is about 1,199 billion cubic feet (Bcf), or 1.2 Tcf. In New England, annual sendout is about 910 Bcf. In New Jersey, annual sendout is about 650 Bcf [2011 data, U.S. EIA].

Gas consumption by end-use sector, according to the most recent U.S. Energy Information Administration (EIA) data, indicates the following: for New York, residential, 33%; commercial, 24%; industrial, 6%; power generation, 36%.

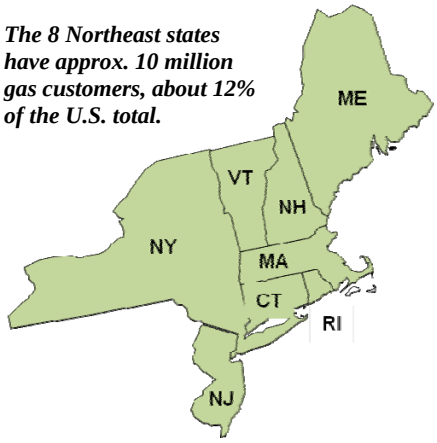
For New England, gas consumption by sector according to EIA was: residential, 22%; commercial, 17%; industrial, 13%; power generation, 48%.

For New Jersey, gas consumption by sector according to EIA was: residential, 33%; commercial, 29%; industrial, 8%; power generation, 30%.

Design day demand on the New York utility (LDC) system is about 6.7 Bcf/day, according to the NY DPS. On the New England system, LDC design day demand is about 4.2 Bcf/day. The New Jersey utility design day demand is over 4



The U.S. interstate natural gas pipeline system includes about 220,000 miles of pipeline, according to the U.S. EIA. The EIA map on the left illustrates the extensive system. In 2011, EIA reports that the national pipeline grid added 2,400 miles of pipeline, representing an addition of 13.7 billion cubic feet of capacity.



The 8 Northeast states have approx. 10 million gas customers, about 12% of the U.S. total.

Bcf/d. The peak season for Northeast demand is winter. The increasing use of gas for power generation, however, has meant a rising use of gas in the summer months, but still well below the winter demand period.

"Transportation" Service Customers

Following deregulation at the state retail level in the late 1990s, many larger commercial and industrial customers opted for gas purchased from marketers rather than from the gas utility. This gas is then "transported" along the local distribution company (LDC) distribution system.

In March 2011, the NY Public Service Commission (PSC) reported there were about 894,000 customers who have migrated to marketers for gas service, or 18.9% of total customers.

As of May 2012, New Jersey's Board of Public Utilities notes there were 220,963 customers in New Jersey who have migrated to other suppliers, or 7.6% of total gas customers in the state.

For New England in 2010, the LDCs reported having 30,000 customers who received transportation-only service, or about 1% of total customers.

About 18% of all residential customers in New York obtain their gas from a 3rd-party marketer; in New Jersey, the equivalent share is 6.6%; in New England the number is minimal.

Electric Generation Sector

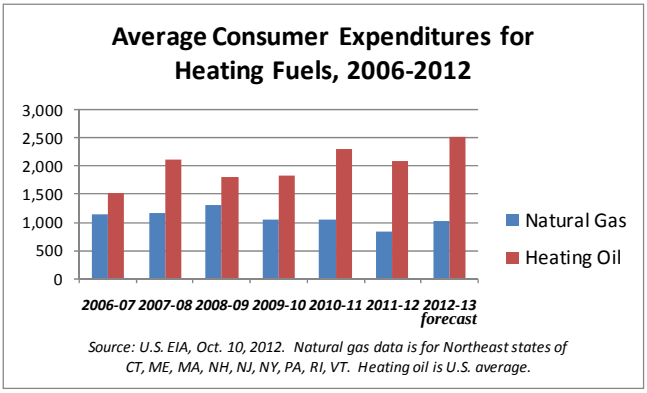
In all three areas - NE, NY and NJ - natural gas remains one of the leading current - and projected - fuel sources for electric generation, based on annual fuel mix and generator applications in the queue at ISO-NE, NYISO and PJM (for NJ).

In New York, gas in 2012 represents 16% of the electric generation capacity mix, with gas/oil forming another 38%. In New England, natural gas is about 43% of the electric generating capacity. Gas is about 56% of New Jersey in-state generation.

Utility Mergers

Two utility mergers were recently completed in the region, and one is in pro-

"Year in Review 2012"



As illustrated in the chart, natural gas in the Northeast (shown in blue) has had a price advantage over heating oil for the last several years, and the price differential is widening. Natural gas conversions are on the rise for the price factor among others.

Source: U.S. Energy Information Administration, Oct. 2012

cess.

In April 2012, the merger of Northeast Utilities (NU) and NSTAR was completed. The combined electric and gas company has about 3.5 million total customers.

In July 2012, Algonquin Power & Utilities, based in Ontario, completed its acquisition of National Grid's electric and gas utilities in the state of New Hampshire. The gas utility there has about 87,000 customers. The new utility is named Liberty Utilities - East.

In February 2012, Fortis, Inc., Canada's largest investor-owned distribution company, announced plans to acquire CH Energy Group, the parent company of Central Hudson Gas & Electric in New York. The transaction is expected to close in the first quarter of 2013. Central Hudson has approximately 300,000 electric and 75,000 natural gas customers.

Regional Market: Gas Supply Sources

In 2011, 95% of the natural gas consumed in the U.S. was produced domestically. The balance is imported from Canada, with a small share from imported liquefied natural gas (LNG).

The Northeast region traditionally has relied on three main supply areas: Gulf Coast U.S., Canada, and LNG. In the last decade, the supply sources have expanded to include Rockies gas and eastern Canada production. But the biggest change has occurred in just the last four years, with the rapid development of the Marcellus Shale gas basin in Appalachia. Production from the Marcellus is transforming the supply dynamic into the Northeast.

Shale gas in 2011 accounted for 35% of total dry gas production in the U.S. The Marcellus basin alone now represents over 26% of total U.S. shale gas pro-

duction. This extraordinary upswing in U.S. (and Northeast) production is resulting in new delivery points, new pipeline infrastructure to bring this shale gas to market, and lower prices for consumers.

This transformation is also changing the flow patterns from Canada and LNG. Imports from both sources, while still important, are in decline.

Canadian supplies have long played a significant role in gas supply to the Northeast U.S. In the last twenty years, five new pipeline systems opened in the region, connecting New England and New York to both western and eastern Canadian supply basins. Canada remains pivotal to the region, but with new Marcellus supplies so near, the level of imports has begun to decline. Canadian exports to the East were 789 Bcf in 2009 but 494 Bcf in 2011 – a decline of 37%.

Also contributing to the regional gas mix are LNG imports. LNG represents about 20% of New England's total annual gas supply, for instance, and is vital in helping local gas utilities meet winter peak day requirements (LNG provides about 30% of New England's utility peak day requirements, and 15% of downstate New York's).

In 2011, U.S. overall LNG imports were 349 Bcf (down from the high point of 771 Bcf in 2007). The Distrigas facility outside Boston imported 135 Bcf in 2011, which represented 39% of total U.S. imports. LNG inputs into the region are further enhanced via supplies from the Canaport LNG in New Brunswick, Canada. LNG imports to both facilities, however, while still significant to the region, are falling, as U.S. domestic production rises, and as the price for LNG in foreign markets is more enticing for shipments.

Pipeline and LNG Deliverability into the Region

New England

New England has 2,500 miles of gas transmission pipeline, according to the U.S. Department of Transportation/PHMSA.

The pipeline companies serving New England, interstate and intrastate, are: Algonquin Gas Transmission, Granite State Gas Transmission, Iroquois Gas Transmission System, Maritimes & Northeast Pipeline, Portland Natural Gas Transmission System, and Tennessee Gas Pipeline Co.

In addition, New England is the site of three import terminals for liquefied natural gas (LNG). The land-based terminal is owned by GDF SUEZ and operated by its subsidiary, Distrigas of Massachusetts Corp. (DOMAC). The LNG is delivered by tanker to the Distrigas terminal at Everett, MA, where there is storage capacity of 3.4 Bcf. Its principal supply sources are Trinidad and Yemen. The terminal has pipeline interconnections as well as connections with a major gas utility and a major power plant. LNG is also transported to multiple LDCs'

satellite storage tanks from trucks that fuel at the DOMAC terminal. The vaporization capability at its terminal is 715 MMcf/d; it also has daily sendout by truck of another 100 MMcf/day.

The Northeast Gateway facility offshore Cape Ann, MA is capable of receiving LNG cargoes and injecting the revaporized gas into the HubLine pipeline system of Spectra Energy. The offshore LNG facility, owned by Excelerate Energy, became fully operational in early 2008. It operates generally on a spot market basis. It has imported shipments from Trinidad, Egypt and Qatar, but has had no shipments since 2010.

In summer 2010 another offshore LNG facility near Cape Ann, MA was completed – the Neptune LNG facility of GDF SUEZ. It is capable of injecting an average of 400 million per day into Spectra's HubLine. It has been generally inactive since its start-up.

A fourth facility, Canaport LNG, owned and operated by Repsol and Irving Oil, is located not in New England but just over the Maine border in Saint John, New Brunswick, Canada. It became operational in June 2009. It can deliver up to 1 Bcf of gas a day into the Brunswick Pipeline, which connects with the Maritimes & Northeast Pipeline, which then can transport the volumes into the New England market. It sources its gas principally from Trinidad but has also imported supplies from Egypt, Qatar, Norway and Peru. Since its inception, it has delivered about 270 Bcf into the regional market.

Production in the Northeast continues to advance, through development of the Marcellus Shale. Pennsylvania has been the main locus of Marcellus production to date.

Photo: WR Keating

New York

New York has about 4,500 miles of gas transmission. The pipeline companies serving New York State, interstate and intrastate, are: Algonquin Gas Transmission, Columbia Gas Transmission, Dominion Transmission, Empire State Pipeline Co., Iroquois Gas Transmission System, Millennium Pipeline Company, National Fuel Gas Supply Co., North Country Pipeline, Tennessee Gas Pipeline Co., Texas Eastern Pipeline Co., and Transcontinental Gas Pipe Line Corp.

LNG is utilized by two local utilities in the New York City and Long Island areas. Consolidated Edison and National Grid have storage tanks to provide peak day support. The LNG is received from the pipeline in vapor

Another key supply point for the region is liquefied natural gas (LNG). The region has four import facilities, three in MA and one in New Brunswick, Canada. Nationally and regionally, LNG imports are down, as U.S. domestic production is on the increase. The interest is growing in the U.S. for potential LNG exports, in light of the robust U.S. supply base.

Photo: Repsol

form and then liquefied. New York has no LNG import facility.

New Jersey

New Jersey has about 1,500 miles of transmission pipeline.

The interstate pipeline companies serving New Jersey are: Algonquin Gas Transmission, Columbia Gas Transmission, Tennessee Gas Pipeline Co., Texas Eastern Pipeline Co., and Transcontinental Gas Pipe Line Corp.

The LDCs utilize local LNG storage for peak day support.

Regional Production

The Northeast traditionally has had only limited natural gas production, in New York and Pennsylvania. There is no gas resource production base in New Jersey or New England. In recent years however, with the advent of hydraulic fracturing and the development of shale resources, the Northeast, astonishingly, is turning into a major domestic natural gas production area.

The Marcellus Shale is a geographic formation in the Appalachian Basin, extending from West Virginia into Ohio, Pennsylvania and New York.

Another basin is the Utica Shale, located principally in Ohio, where the early production has focused on oil development, but which also holds significant natural gas reserves.

Estimates are that the Marcellus area alone may hold as much as 500 trillion cubic feet (Tcf) of natural gas.

Marcellus production in 2012 is over 8 billion cubic feet per day (Bcf/d). Pennsylvania is producing 6.8 billion cubic feet per day, representing (as of October 2012) 26% of all U.S. shale gas production (Source: U.S. EIA). The next few years promise further, greater volumes. It is estimated that Northeast production, for both Marcellus and Utica developments, could exceed 15 Bcf/d in the next five years.

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The interstate pipeline companies which serve the Appalachian region are adding numerous interconnects from area producers, large and small. Numerous projects have been completed, and more are under construction and in development, to bring this gas to market.

There are challenges in terms of infrastructure development, land and water access, and water treatment (water is one of the key ingredients in the hydraulic fracturing process used to dislodge the gas from the shale rock formations). The state environmental agencies among others are closely involved in balancing the environmental, energy and economic development variables at the state level.

While there is a shale gas resource in New York, use of the hydraulic fracturing process is not currently permitted there. As of late 2012, the state regulatory process in New York remains underway as the state considers further analysis of potential health-related issues related to its proposed final regulations on hydraulic fracturing.

Conventional production is permitted in New York. The Trenton-Black River area in particular has yielded steady production in recent years. In 2011, total annual state output was 31 Bcf. The state's conventional production has been declining since 2007 – as nearby shale gas supplies the market.

There is also some conventional production in eastern Canada.

Gas from offshore Nova Scotia in eastern Canada continues to be produced as part of the Sable Offshore Energy Project. Construction is underway on the development of another nearby offshore field, Deep Panuke – which is now expected to begin flowing in early 2013.

A gas production field in New Brunswick, Canada, the McCully field of Corridor Resources, began production in 2007, and provides about 35 million cubic feet of gas per day into the Maritimes and Northeast Pipeline.

Exploration for new finds also continues in other parts of the Canadian Maritime Provinces. Shale resources are also estimated to be potentially significant

The interstate pipeline system in the Northeast accesses supplies from multiple sources: Gulf Coast, mid-continent, Appalachia, and western and eastern Canada. The pipelines also can access storage at different points along their systems, including local storage in Pennsylvania and New York. With production well underway in Appalachia, these pipeline operators are undertaking numerous projects to add facilities to bring these new supplies to local markets in the Northeast.

there, as well as in Québec. There are also estimates of considerable natural gas reserves offshore Newfoundland that could be developed in the future. Environmental review issues are factors in the Canadian review process just as in the U.S. Quebec has a moratorium on shale production; New Brunswick is reviewing the issue.

In short, the Northeast region, a major consumer of natural gas and a high-priced energy market, is an increasingly significant locus for natural gas production – and future prospects appear very positive.

Regional Storage

Storage is a critical part of the natural gas supply and delivery chain. The Northeast has considerable underground storage, notably in Pennsylvania (9% of the U.S. total); New York's underground storage represents 2.7% of the U.S. total. The geology of New Jersey and New England is not suitable for underground gas storage.

New supply developments are transforming the traditional paths of supply sourcing into the region, creating a more diverse supply mix and a more robust delivery network.

Total gas storage in New York is 245 Bcf, with maximum deliverability of about 2 Bcf/day.

LNG is another important part of the Northeast storage portfolio. Total LNG storage capacity in New York is 3.2 Bcf, while LNG storage capacity in New Jersey is about 4 Bcf. Total LNG storage capacity in New England is 16 Bcf on the LDC system, and another 3.4 Bcf at the DOMAC import terminal. (The LNG facilities offshore Cape Ann, MA do not have a storage component.)

The Canaport LNG facility in Saint John, NB has 9.9 Bcf of storage on-site.

Recent System Enhancements

2012 saw the completion of several pipeline infrastructure projects in the region. They included:

- ⇒ Dominion, "Appalachian Gateway Project";
- ⇒ Dominion, "Ellisburg to Craigs";
- ⇒ Dominion, "Northeast Expansion Project";
- ⇒ DTE, "Bluestone Pipeline Project" (Pennsylvania section);
- ⇒ Inergy, "Marc I Hub Line";

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Liquefied natural gas (LNG) represents an important local storage option for gas utilities, especially in New England, and is essential to helping LDCs meet winter peak demand. The utilities maintain local storage tanks, which are filled during the spring and summer months in time to help manage wintertime load. Shown here is a photo of a tank on the National Grid system, along with a solar panel array installed by Grid.

- ⇒ National Fuel Gas Supply, "Line N 2012";
- ⇒ National Fuel Gas Supply, "Northern Access";
- ⇒ Spectra Energy, "TEAM 2012";
- ⇒ Tennessee Gas Pipeline, "Northampton Southwick Compressor";
- ⇒ Tennessee Gas Pipeline, "Northeast Supply Diversification."

In 2013, several major infrastructure projects are also scheduled to become operational, further linking Marcellus supplies to markets.

As well, local distribution companies are investing in system growth to meet growing demand – a subject that is considered at greater length below.

Projected Market Growth

United States

The 2013 U.S. EIA Annual Energy Outlook forecasts 0.7% annual energy growth for the United States through the year 2040. EIA projects that natural gas will grow at a rate of 0.4% annually, with coal at 0.1%, renewables 1.7%, petroleum, 0.1%, and nuclear, 0.4%.

Regional Growth

The 2013 EIA Outlook projects a 0.5% annual rate growth rate for natural gas consumption in New England, and a growth rate of 0.6% in the Mid-Atlantic region – through 2040.

Planned Infrastructure Enhancements

The Northeast's natural gas industry is moving forward with numerous infrastructure projects designed to meet growing market demand within the 2013-2018

timeframe. The region remains constrained at several points on its natural gas system (particularly into the New York City / Long Island area and New England). New supplies and infrastructure will help to ease those constraints, and should help to improve the regional price situation. The multiple projects all center around bringing Marcellus Shale supplies to market. These projects will help further increase regional natural gas capacity, deliverability, flexibility and reliability, as well as provide economic and environmental benefits to the region.

Challenges for new projects include siting, environmental concerns, and securing market position. The New England region so far has not had any major pipeline projects linked to Marcellus, although there are several proposals in development, for the 2016-18 timeframe. A Concentric Energy Advisors study for Spectra Energy in spring 2012 estimated that if New England were to build out its regional infrastructure, the "direct benefit is estimated to range from approximately $270 to $340 billion," reflecting savings in the power generation and utility sectors, displacement of more expensive oil, and a reduction in the New England price premium. Securing contract commitments in New England however has been an issue, as the largest consuming sector, power generation, has been constrained by the economic structure of its electric market.

Another interesting development is the introduction of portable or mobile CNG and LNG to bring natural gas to communities and businesses not located near a pipeline system. With the dramatic price difference between gas and oil, some areas and businesses in northern New England, for instance, are opting for gas delivered by truck to meet energy needs at a more competitive price. The gas is transported via a trailer that also can serve to offload the gas into the facility.

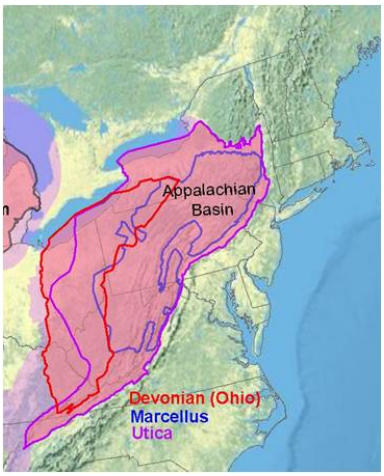
Photo: National Fuel Gas Supply

MARKET ISSUES

Supply Outlook

In terms of U.S. natural gas supply, the outlook is positive.

In August 2012, the U.S. Energy Information Administration (EIA) released its latest annual report on U.S. oil and gas reserves, for the year 2010. It found that "proved reserves of U.S. oil and natural gas in 2010 rose by the highest amounts ever recorded since the U.S. Energy Information Administration



The first natural gas produced in the U.S. was in New York State in the 19th century. Gas production has continued since then in New York and Appalachia, but a new period of significant growth now seems to be on the horizon. Geological estimates for shale gas potential in the Marcellus Shale and Utica Shale areas (identified in the map on the left) are promising. Production is underway and already flowing into the Northeast market. The resource base is transformative for the regional gas market. (Map: U.S. EIA)

(EIA) began publishing proved reserves estimates in 1977." EIA added: "Expanding shale gas developments in these and other areas, perhaps most notably in Pennsylvania's portion of the Appalachian Basin in the Marcellus play, drove overall increases in 2009 and 2010."

Shale gas in 2012 already provides about 35% of total U.S. dry natural gas production, compared to less than 5% only seven years ago.

Canada will remain an important supplier for years to come but its share of the U.S. market is expected to continue to decline over the long-term. As noted above, the growth of U.S. supplies is leading to lower imports from Canada into the Northeast U.S.; at the same time, natural gas demand within Canada is expected to grow, leaving less for export.

As one indicator of the changing dynamic, several pipelines in the U.S. Northeast, traditionally transporting imported supplies from Canada, are now, in 2012, *exporting* supplies to Ontario – a true reversal of historical supply patterns.

The potential of unconventional gas is not limited just to the U.S. but includes Canada as well. In November 2009, Canada's National Energy Board noted: "It appears that there is potential for 1000 Tcf of shale gas in place in Canada if not more." Major potential basins close to the Northeast market include the Utica Shale in Québec and the Horton Bluff in the Maritimes.

The rise in domestic U.S. production is also having an impact on LNG imports into the U.S. LNG imports into the U.S. dropped by 55% between 2007 and 2011, and the focus now for most areas of the U.S. is shifting from *imports* to potential *exports*. Several LNG import facilities in the U.S. – on both coasts and especially in the Gulf - are proposing to add liquefaction facilities so that they can *export* LNG to the world market – a reflection of the confidence in the extent of

U.S. domestic supplies. As much as 20 Bcf/d has been proposed for export from U.S. facilities, but the expectation is that the level of exports in coming decades will be more likely in the range of 3 to 6 Bcf/d.

With the Northeast delivery system still constrained at certain points, the regionally-based LNG facilities will continue to ease bottlenecks and increase supply and delivery options.

Efficiency Initiatives

The eight-state region is a recognized leader in per capita energy efficiency. A 2012 report by the American Council for an Energy Efficient Economy (ACEEE) noted that in 2011, $1.1 billion was invested in natural gas efficiency programs nationwide, of which $380 million – or one-third of the national total - was invested in the 8 Northeast states.

At the state level, several public utility commissions have implemented mechanisms to "decouple" utility revenues from sales to spur greater investment in cost -effective demand-side programs. At the industry level, collaboratives such as *GasNetworks* in several Northeast states provide innovative ideas on new energy-efficient technologies and equipment for gas customers.

Price Trends

The key variables in natural gas price formation are demand growth, the state of the economy, production levels, storage levels, weather, and alternative fuel prices. The natural gas price story in this new era of domestic production has been positive for consumers and the entire U.S. economy. In early July 2008, natural gas reached $13.50/MMBtu while oil hovered close to $150 a barrel. As of early December 2012, the Henry Hub natural gas price was around $3.50/MMBtu.

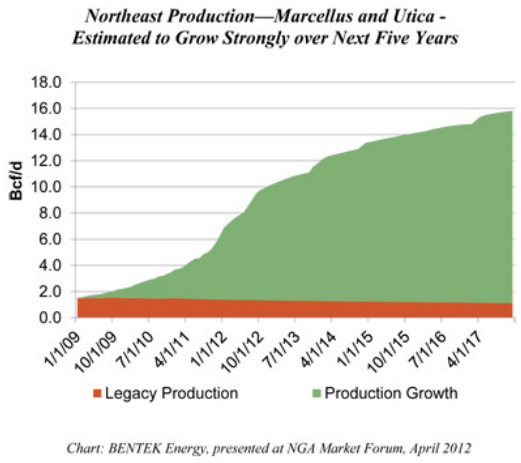


Chart: BENTEK Energy, presented at NGA Market Forum, April 2012

Source: BENTEK Energy

This significant shift reflects the wave of new natural gas supplies entering the market, as well as some lower demand during a prolonged economic slowdown.

The American Gas Association (AGA) in a May 2012 paper reported that lower natural gas commodity prices in the last three years have led to savings of almost $250 billion for end-use natural gas customers.

In a November 2012 paper, TD Economics noted: "Lower prices have cut costs for businesses and consumers, and dramatically shifted the economics of power generation."

FERC staff noted in November 2012 that "current natural gas prices and winter forwards are the lowest we have seen in ten years. The U.S. natural gas market is well supplied, with production at almost forty-year highs and inventories approaching last year's record."

Natural gas has advantages as a vehicle fuel, from lower fuel price to lower emissions. For fleet, bus and heavy-duty vehicles especially, both the CNG and LNG option make real sense. Shown above is a CNG-fueled truck.

It is projected that the natural gas price bandwidth will stay relatively moderate over the coming years, given the size of the domestic supply resource base. EIA's 2013 Outlook forecasts that Henry Hub spot prices will stay below $4 / MMBtu in 2011 dollars through 2018, and then rise along with demand. The Henry Hub spot price in 2030 is projected by EIA to be $5.40/MMBtu (2011 dollars). Price forecasts are always subject to change, however.

However, short-term volatility reflecting delivery constraints and weather will continue, especially in regional markets. The New England region, for instance, remains among the most price-sensitive markets in the country, reflecting its pipeline constraints.

The addition of new infrastructure in the Northeast, and the increased supply availability, should serve to narrow the basis differential between the Northeast market and the traditional market hubs and mitigate local volatility.

Gas and Electric Power Generation

The fastest-growing gas consumption sector in recent years, nationally and regionally, has been gas for electric generation. New technology, particularly combined-cycle technology (CCT), has made the natural gas power plant the energy system of choice. CCT's advantages include higher efficiency, lower heat

rates, shorter construction lead times, and reduced air emissions compared to the other fossil fuels.

Gas plants - along with wind - are the leading fuel type for new proposed power generation capacity in the generator queues in New Jersey, New York and New England. As the fossil fuel with the lowest carbon content, gas appears well-positioned as a viable power generation source for years to come. Natural gas also provides the potential to back-up intermittent energy sources such as windpower.

Nationally, a trend toward coal power plant retirements in light of environmental regulations is leading to natural gas as the likely baseload replacement source.

The Northeast states continue to be leaders in per capita energy efficiency.

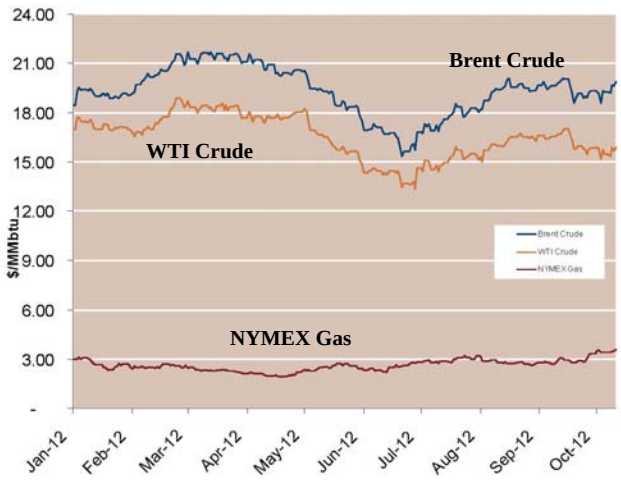
With the new supply and price paradigm, the regional power generation fleet, already highly dependent on natural gas, will likely become more so. There are several unresolved gas generation issues that continue to challenge the market. For example, most power generators in New England do not contract for firm gas pipeline capacity under their unilateral control and instead rely on "if and as available gas" non-firm capacity, or, in some cases, capacity held by third parties. Pipeline capacity has routinely been added to meet the needs of gas customers who desire firm service and are willing to execute firm contacts for such service. Relying on essentially interruptible capacity to supply the gas resource for a majority of gas power plants, as currently occurs in New England, does present significant reliability challenges to the energy market, particularly in the winter heating season.

Furthermore, as many generators are more reliant on interruptible capacity (in an already constrained system), it is also extremely critical that parties comply with pipeline operating rules, as well as the pipeline's tariff-required gas scheduling rules, so that system integrity is maintained to ensure customers that do contract for firm capacity receive that service. Pipeline utilization rates on the New England system remain high, and constraints are appear in summer months as well as winter.

The variances in the gas and electric operating "day" also impact planning and scheduling on both systems.

Plastic pipe being installed on a street outside Boston.

"Year in Review 2012"



The natural gas commodity price has not only moderated substantially in the last few years, but appears severed from the world oil price, as illustrated in this FERC chart. The chart compares natural gas, in red, to two crude oil price indices, WTI and Brent. Natural gas is 5 times lower on an MMBtu-basis comparison. EIA projects that the average Henry Hub price for 2013 will be around $3.50 per MMBtu. Chart: FERC, 10-12

In August 2012, the U.S. FERC held a series of technical conferences to review gas-electric market coordination issues. The challenge appears most acute in New England, where additional pipeline capacity is needed to meet the needs of gas generators, but the electric market does not provide sufficient incentives to encourage generators to sign up for more secure pipeline contracts.

Natural Gas Vehicles

Another sector receiving renewed attention has been the natural gas vehicle (NGV). NGVs remain a very competitive alternative fuel option, especially for fleets, bus systems, and a range of heavy-duty vehicles, including refuse trucks.

The price advantage compared to diesel and gasoline is strong – over 30% lower.

On the environmental front, NGVs have many comparative advantages. The U.S. Department of Energy notes: "Commercially available medium- and heavy-duty natural gas engines have demonstrated over 90% reductions of carbon monoxide (CO) and particulate matter, and more than 50% reduction in nitrogen oxides (NOx) relative to commercial diesel engines."

In February 2012, ACEEE rated the compressed natural gas (CNG) vehicle the "2nd greenest vehicle" on the road in the U.S. (the CNG Honda Civic had ranked #1 on the "green list" for the previous eight years!).

In October 2009, the National Research Council, which is affiliated with the National Academy of Science, released a report which examines the costs of energy production and use - such as the damage air pollution imposes on human

health - in different sectors of the economy, including transportation. Natural gas's impacts were summarized this way: "compressed natural gas had lower damages than other options, as the technology's operation and fuel produce very few emissions."

Compressed natural gas (CNG) has been the main NGV fuel to date as it accommodates the widest range of vehicles, from passenger cars to fleet vehicles to buses and garbage trucks. There is also new interest in LNG as a fuel for heavy-duty trucks. There are a few LNG fueling sites in New England currently, and many initiatives in the U.S. and Canada for "LNG highways" to provide fueling stations to facilitate truck travel. Gaz Métro in Québec, for instance, has inaugurated a "Blue Highway" to provide LNG fueling from Québec City to Toronto, and similar projects are underway in western Canada and in areas of the U.S.

Conversions and System Extensions to Meet Demand

The benefits of natural gas – lower price, lower emissions, domestic supply, etc. – are leading to higher levels of customer conversions and new customer development. Multiple states and municipalities are looking to natural gas as a way to help consumers and local economies, and to help meet air and health quality standards.

Some examples from the last two years include:

Connecticut: In October 2012, Governor Malloy's comprehensive energy strategy was released. It aims to make "a lower-cost natural gas option available to more than 275,000 residents and 75% of businesses in the next seven years".

Maine: The state wants to expand the reach of natural gas service to help businesses from paper mills to hospitals achieve lower costs – and offer more optionality to home heating customers.

Power generation is one of the leading natural gas consuming sectors in the Northeast region. Air emissions from power generation in the region have declined in the past decade thanks in part to the use of cleaner-burning and more efficient fuels such as natural gas.

NGA: "Natural gas can help the U.S. meet its environmental, energy, security and economic goals."

New Jersey: The 2011 State Energy Master Plan notes the value of expanding natural gas service in the southern part of the state.

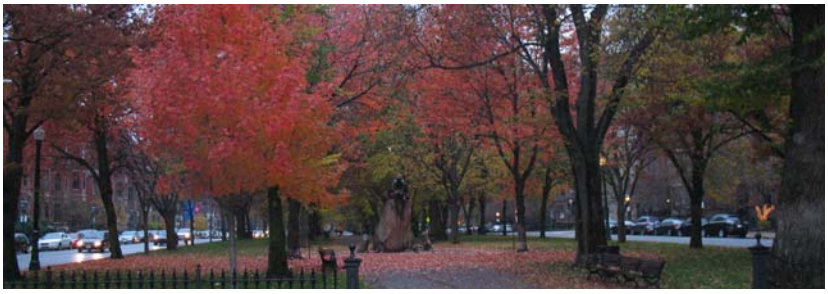
New York City: In August 2012, a study released by Mayor Bloomberg finds that "additional gas supply and infrastructure upgrades are needed to meet rising demands – particularly as city buildings make mandatory conversions from heavy oil to cleaner fuels." The study notes that "upgrades to natural gas services are critical for New York City to improve air quality and public health".

There are several planned system expansions on local utility systems. To note just a few:

- St. Lawrence Gas Company is underway with its Franklin County expansion.
- Vermont Gas Systems is moving forward with its Addison County system expansion (which now will include service across Lake Champlain to a paper mill in Ticonderoga, NY).
- Maine Natural Gas is extending its service area in central Maine with its Augusta/Kennebec Valley Area Project.

In November 2012, the New York Public Service Commission announced a proceeding to examine policies in the state regarding the expansion of natural gas service, "and consider whether we should take steps to foster its use through expansion of the natural gas delivery system or otherwise."

Against this backdrop, natural gas utilities in the region report increasingly high levels of new customers and customer conversions from other fuels. NSTAR's residential conversions in Massachusetts in 2012 are 5-times higher



than the previous 8-year average. Utilities report growth in the 40% range for new customer requests. Homes and businesses along an existing main are natural prospects; the challenge comes in reaching customers at a distance from the existing infrastructure. Managing the economics of line extensions is a new priority issue – as reflected in the NY Public Service Commission's recently-initiated proceeding.

Environmental Considerations

Environmental considerations play a key role in energy market choices. In the Northeast, which needs to meet national, regional and state air emission requirements, energy systems - from transportation to power generation - remain a key focus of policy, regulatory and public attention.

Because natural gas compares favorably to other fossil fuels regarding air emissions, it is the favored fuel for new power generation. MIT's June 2011 study on gas stated that using very efficient natural gas powerplants to replace coal-fired plants is "the most cost-effective way of reducing CO_2 emissions in the power sector" over the next 25 to 30 years. Natural gas will also play "a central role in integrating more intermittent renewable sources — wind and solar — into the electricity system because they can easily be brought in and out of service as needed."

In February 2012, researchers at the Harvard School of Engineering and Applied Sciences (SEAS) reported that the primary explanation for the reduction in CO_2 emissions from power generation in the U.S. in 2009 was that a decrease in the price of natural gas reduced the industry's reliance on coal. While the economic recession contributed partly to the drop in U.S. carbon emissions that year, by over 8% in the power sector, the main cause was replacement of coal by cleaner-burning natural gas.

In August 2012, the U.S. EIA reported that annual U.S. energy-related carbon emissions fell by 2.4% in 2011, and declined to a 20-year low in the first quarter of 2012. A key factor in this improving environmental performance is the rising use of natural gas and the fall in coal's share of total generation.

The natural gas industry is cognizant of its responsibility to reduce emissions from its own system operations. NGA continues as a participant in the U.S. EPA's "Natural Gas STAR" Program along with many of its distribution and transmission company members, to seek to reduce methane emissions from natural gas system operations. Progress continues on this front. For 2010 in the U.S., Natural Gas STAR partners reported methane emissions reduction of 94 Bcf, "a significant achievement" according to EPA. Reducing leaks is an issue of paramount

interest (see section on infrastructure replacement below).

Finally, an environmental issue of major interest concerns the development of shale gas.

Source: U.S. EPA

The MIT study on natural gas notes that "the environmental impacts of shale development are challenging but manageable." Argonne National Laboratory, in a September 2012 paper for the U.S. Department of Energy's "Clean Cities" Program, noted that even as improved science-based assessments of potential environmental impacts continue, "early results indicate that the risks can be managed and lowered through existing practices." Industry and government regulatory agencies are working to address development in an environmentally safe manner.

The natural gas production industry is addressing the issue of disclosure regarding the additives used in hydraulic fracturing. The Ground Water Protection Council (GWPC) and the Interstate Oil and Gas Compact Commission (IOGCC), with funding support from the United States Department of Energy (DOE), unveiled a web-based national registry disclosing the chemical additives used in the hydraulic fracturing process on a well-by-well basis. As of December 2012, over 33,000 wells are registered (see http://fracfocus.org).

Analyses of hydraulic fracturing - as reported in the NY DEC review released in mid-2011 - indicate "that no significant adverse impact to water resources is likely to occur due to underground vertical migration of fracturing fluids through the shale formations." In an October 2011 paper, the National Regulatory Research Institute (NRRI) noted: "Based on more than one million wells drilled with fracking, however, there is little evidence that fracking directly causes groundwater contamination...[R]eports show that these incidents resulted from surface spills, poor cementing jobs in wellbores, ad other operational failures."

As stated above, the key issue of concern seems to be the proper handling of water fluids *after* the extraction process – how that water is handled, stored and treated. The Governor's Marcellus Shale Advisory Commission reported in 2011 that: "The primary concerns regarding hydraulic fracturing relate to surface spills of fluids, well control and lost containment of production and flowback water on the surface."

Other issues - like reducing the use of diesel fuel in the production process, enhancing "green completion" in the entire production cycle to reduce emission losses, and mitigating community impacts - are receiving industry attention. The industry is and must be responsible for best practices at all times.

Environmental responsibility is a central component of the entire process.

"Year in Review 2012"

Pipeline Safety

Pipeline safety is the primary issue for the industry. Federal and state regulatory requirements are rigorous, and several new regulations have been announced in recent years to enhance operations safety, from transmission and distribution integrity management to control room operations.

NGA and its member companies are continuing their work on important initiatives in the areas of public awareness, worker training, awareness of third party damage, integrity management implementation, and new technologies, among others.

Accelerated Pipeline Replacement

An issue related to safe operations and environmental performance is the replacement of older pipeline system components that are considered more "leak-prone" – that is, pipes constructed of bare steel or cast-iron. The accelerated repair and replacement of more "leak-prone" natural gas distribution system components is thus an issue of growing interest. The Pipeline and Hazardous Materials Safety Administration (PHMSA) of the U.S. Department of Transportation is urging action on repairing older, more leak-prone systems.

The Northeast states generally have levels of leak-prone distribution pipe components higher than the national average, reflecting older systems. Replacing these older components is a priority, for safety reasons and to reduce system leaks and related emissions. State regulatory agencies are working with utilities on programs to achieve pipe replacement in an economically appropriate manner.

Mutual Aid, Post-Storm

Recent years have brought a series of major storms to the U.S. and Northeast with considerable disruptions to infrastructure. The "Sandy Superstorm" of Fall 2012 was especially devastating to major sections of the Northeast. The storm hit on October 29, causing immediate disruptions in electricity, petroleum, transportation, and natural gas systems among others. The U.S. Department of Energy reported that "the day after Hurricane Sandy made landfall, 8.2 million customers were without power. For New Jersey, it was the largest power outage

in the history of the state." The economic impact of the storm is estimated in the range of tens of billions (for New York and New Jersey alone, the impact is estimated at over $70 billion).

For natural gas, the number of customers whose service was impacted in New Jersey, downstate New York and coastal Connecticut was an estimated 225,000. The storm brought flood damage and a storm surge that resulted in serious damage to areas of several gas LDC systems. It was the most serious disruption to local natural gas distribution system service in the Northeast and one of the largest in the U.S.

In advance of the storm, NGA enacted its utility mutual aid program to assist local gas distribution utilities in need of personnel and equipment. The response was prompt and positive. Even as utilities in the Northeast needed to first manage the impacts on their own systems, both gas and electric, they willingly provided help where they could. In addition, crews from utilities elsewhere in the U.S. also responded, as did crews from Canada (after special waivers were received from the U.S. and Canadian governments and the governments of NY and NJ). The work conditions were difficult, and housing for arriving crews, especially on Long Island, was limited. Over 800 personnel were dispatched to assist, from about 50 companies, from the U.S. and Canada, as well as from several contractors – in addition to the hundreds of personnel drawn from the two impacted utilities themselves.

NGA applauds the industry for its cooperation and readiness to help, and expresses thanks to the other industry associations in this process – the American Gas Association (AGA), the Southern Gas Association (SGA), and the Canadian Gas Association (CGA).

This recent storm demonstrates that planning is more vital than ever, as is a coordinated mutual aid program.

New Technology R&D

NGA has a notable R&D program operated by NYSEARCH. For over 20 years, NYSEARCH, originally developed by the New York Gas Group, has been one of the premier natural gas industry R&D programs in North America. NYSEARCH has been involved with innovative projects such as pipeline sensing and guided wave technology, and continues to utilize its own testbed facility in

Johnson City, NY for advanced demonstrations. In 2008, NYSEARCH staff was awarded the "Gas Industry Research Award."

NYSEARCH also helps to foster significant product commercializations, including the remote methane leak detector (RMLD). In 2010, NYSEARCH and InvoDane Engineering announced the commercialization of a new technology that will help owners inspect unpiggable pipelines. It is a significant technological advance.

NGA also has a program with the Gas Technology Institute (GTI) that transfers knowledge to natural gas utility partners about new technologies that can enhance operations, safety, efficiency, and analysis.

Technology is the bridge to our energy future; investment in natural gas technology is the avenue to progress.

Technology research & development continues to be essential to industry progress in such areas as supply development, environmental improvements, and increased operational safety.
NGA's NYSEARCH organization is an industry leader in North America on new technology innovations, and made several key project advances in 2012.
NGA is also pleased to partner with the Gas Technology Institute (GTI).

Photo: NYSEARCH

II.

REGIONAL ENERGY OVERVIEW

This section provides an introduction to the energy scene in New England, New York and New Jersey.

Among the areas addressed are:

- *economic profile*
- *projected energy consumption by fuel type*
- *primary energy mix*
- *electric generation mix*
- *state energy consumption.*

NORTHEAST ECONOMIC PROFILE

The Northeast states (New England, New Jersey and New York) represent a total population of 42.8 million, a civilian labor force of 22 million, gross state domestic product of $2.46 trillion, and account for 16.6% of total U.S. gross domestic product.

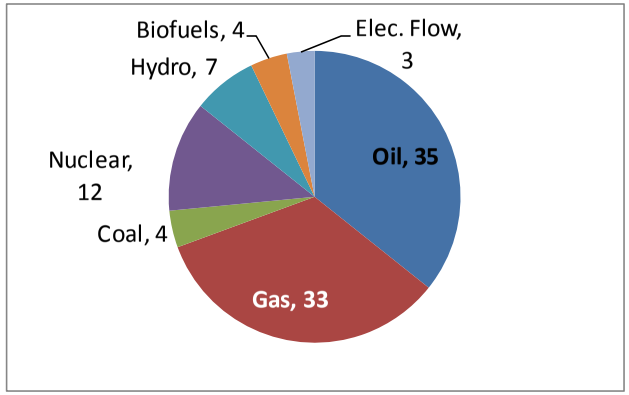
STATE	POPULATION (2011 est.)	HOUSEHOLDS (2011 est.) [total housing units]	LABOR FORCE (Aug. 2012) [thousands]	GROSS DOMESTIC PRODUCT (GDP) (2011) [$ billions]	GDP as % OF U.S. TOTAL (2011)	PER CAPITA PERSONAL INCOME (2011)
Connecticut	3,580,709	1,494,019	1,913	230.1	1.5	$57,902
Maine	1,328,188	725,577	721.3	51.6	0.3	$38,299
Massachusetts	6,587,536	2,818,940	3,493.5	391.8	2.6	$53,471
New Hampshire	1,318,194	617,704	746.4	63.6	0.4	$45,881
New Jersey	8,821,155	3,562,553	4,598.2	487	3.3	$52,430
New York	19,465,197	8,119,364	9,616.3	1,158	8.0	$51,126
Rhode Island	1,051,392	464,728	561.5	50.1	0.3	$43,875
Vermont	626,431	324,389	360.6	25.9	0.2	$41,572
U.S.	*342,761,133*	*132,312,404*		*14,981*	*100*	*$41,560*

Sources: U.S. Bureau of the Census, U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics. U.S. popula-

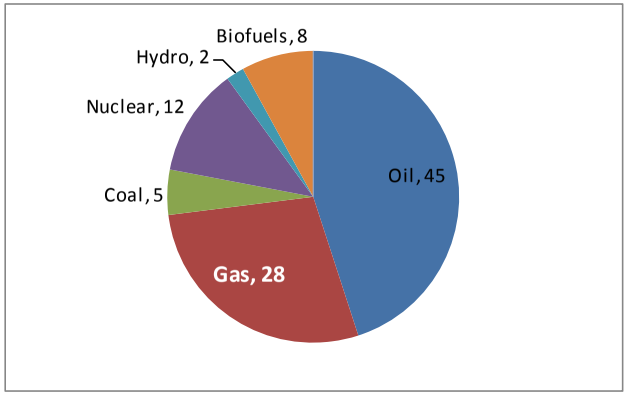
TOTAL PRIMARY ENERGY CONSUMPTION

A comparison of New England, New York and New Jersey primary energy consumption indicates a strong role for petroleum, reflecting the inclusion of the transportation sector, a relatively small role for coal compared to the national average, a consistent role for nuclear, a varying share for hydro and biofuels, and a solid share for natural gas. Interstate electricity flows also play a primary part.

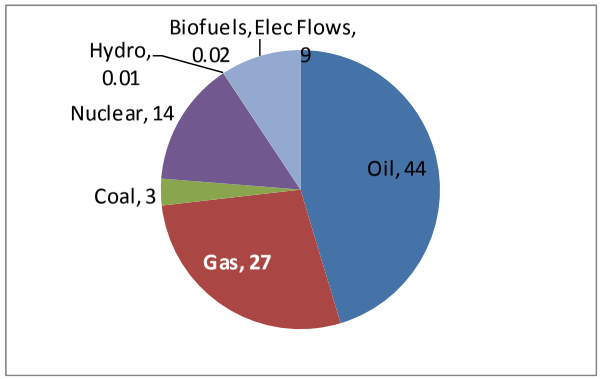
NEW YORK



NEW ENGLAND



NEW JERSEY

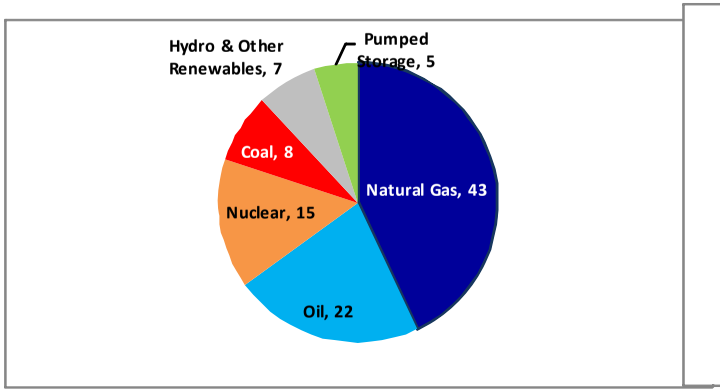


Sources: U.S. Energy Information Administration (EIA), "State Energy Data Report 2010," released 2012.

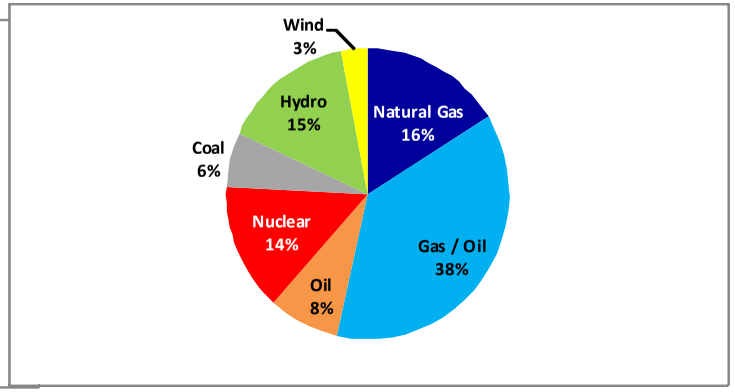
ELECTRIC GENERATION FUEL SOURCE

(% of total)

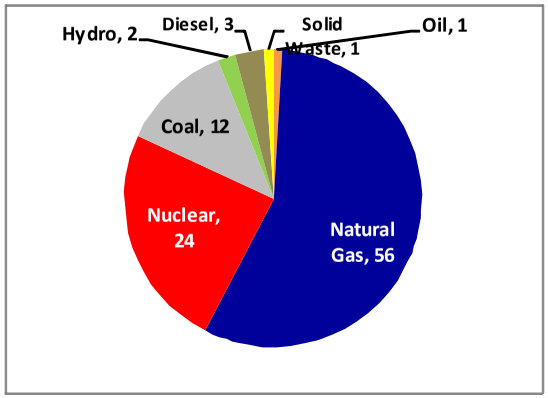
NEW ENGLAND



NEW YORK



Sources:
ISO New England, 2011 sources of total generation;
NY ISO, 2012 "Power Trends";
New Jersey existing installed capacity, "PJM 2011 Regional Transmission Expansion Plan."



NEW JERSEY

TOTAL ENERGY CONSUMPTION BY MAJOR SOURCE

The Northeast states consume less energy per capita than the U.S. on average. Source: U.S. Energy Information Administration, "State Energy Data Report 2010," released 2012. Sum of fuel totals is not equal to total consumption due to other energy components not shown. Rank signifies level of state consumption compared to 50 U.S. states and District of Columbia. Electricity is that sold to end users. The data for fuels in TBtu is EIA's estimates for the year 2010.

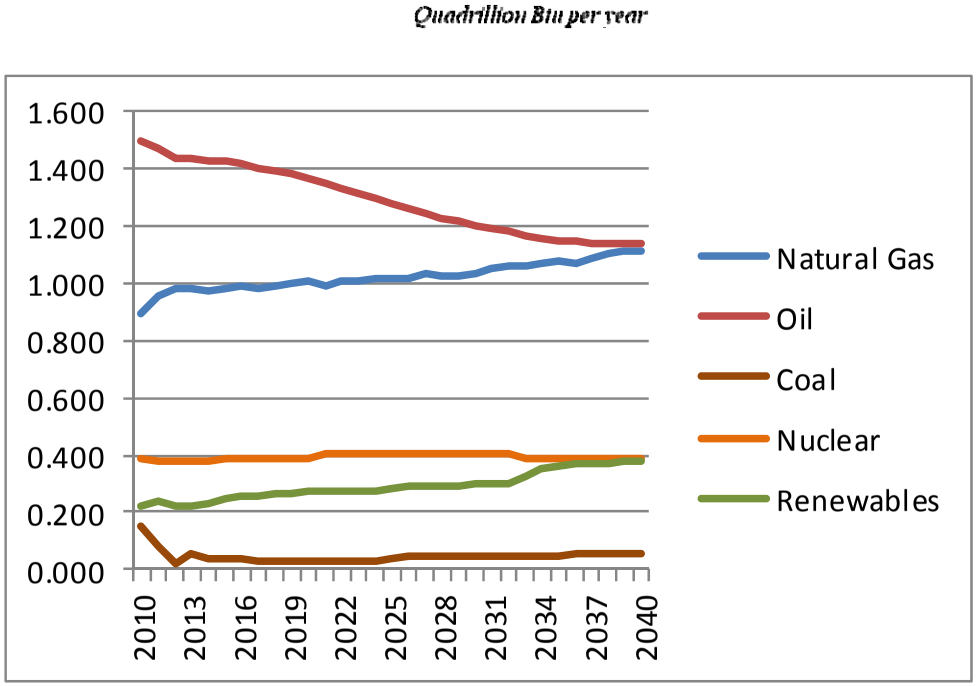
	Per Capita, 2010, Consumption		*Natural Gas*		*Petroleum*		*Coal*		*Electricity*	
	MMBtu	**Rank**	**TBtu**	**Rank**	**TBtu**	**Rank**	**TBtu**	**Rank**	**TBtu**	**Rank**
CT	211	47	203.8	37	343.4	33	28.7	44	103.7	35
ME	307	28	81	43	201.1	41	2.3	48	39.3	45
MA	213	46	445.3	16	605.7	20	83.8	36	194.9	26
NH	224	44	62.6	47	157.9	45	33.8	42	37.2	47
NJ	278	37	670.4	11	1,113.6	9	72	38	270.2	20
NY	192	50	1,224.4	4	1,371.6	5	167.1	33	493.5	7
RI	187	51	95.7	41	96.3	48	-	50	26.6	49
VT	236	42	8.5	50	81.8	50	-	51	19.1	51
Northeast			***2,791.7***		***3,971.4***		***387.7***		***1,184.5***	
U.S.			***24,314***		***37,081.7***		***20,869.1***		***12,810.3***	

PROJECTED ENERGY CONSUMPTION GROWTH, NEW ENGLAND

U.S. EIA projects natural gas to grow at an annual rate of 0.5% in New England through 2040.

EIA projects growth trends for other leading energy sources as follows:

Renewables, 1.6%
Coal, -1.3%
Nuclear, flat
Oil, -0.9%.



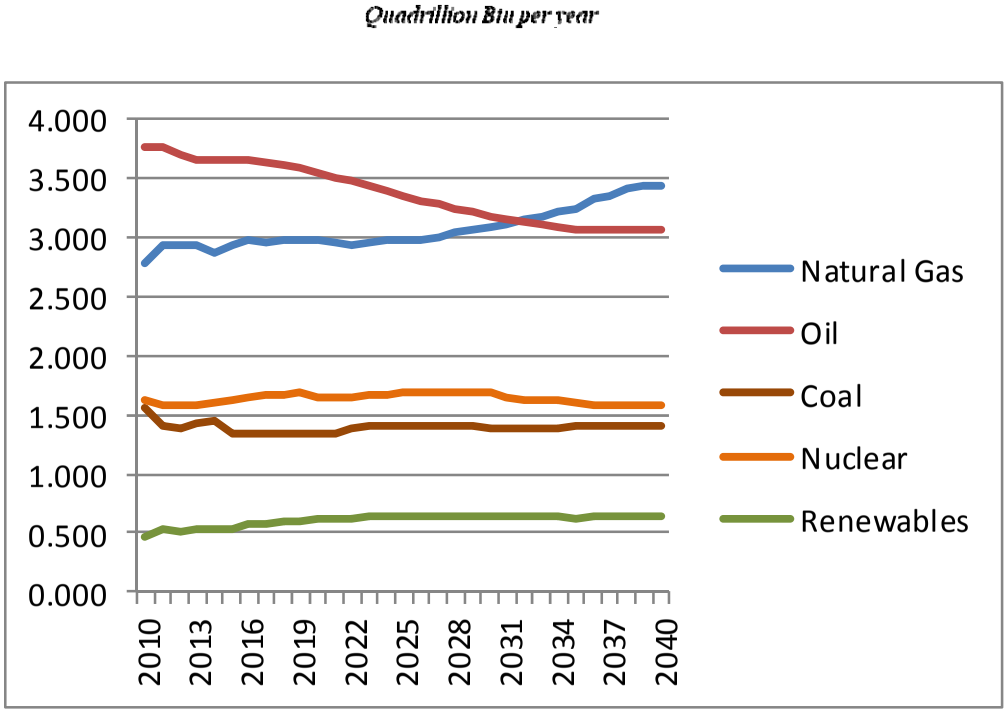
Source: U.S. Energy Information Administration, "2013 Annual Energy Outlook"

PROJECTED ENERGY CONSUMPTION GROWTH, MID-ATLANTIC

U.S. EIA projects natural gas to grow at an annual rate of 0.6% in the Mid-Atlantic region through 2040.

EIA projects growth trends for other leading energy sources as follows:

Renewables, 0.6%
Coal, 0.2%
Nuclear, flat
Oil, -0.7%.



Source: U.S. Energy Information Administration, "2013 Annual Energy Outlook"

III.

SUPPLIES & INFRASTRUCTURE

This section provides an introduction to the natural gas delivery network in the Northeast.

Among the areas addressed are:

- *Description of pipeline systems*
- *Liquefied natural gas (LNG)*
- *Sources of regional gas supply*
- *Proposed infrastructure enhancements.*

Description of Pipelines/LNG Import Facilities Serving the Northeast Market

Algonquin Gas Transmission Company is a business unit of Spectra Energy. Its system incorporates approximately 1,120 miles of pipe, with 11 interconnections/receipt points. Its system commences in NJ, connecting with Texas Eastern, and extends through NY, CT, northern RI, and eastern and southeastern MA. Its capacity is 2.44 Bcf/d.

Distrigas of Massachusetts Corporation (DOMAC), a subsidiary of GDF SUEZ, owns and operates an LNG import terminal in Everett, Massachusetts. It interconnects with both the Tennessee and Algonquin systems. It began operation in 1971. Its supply source is principally Trinidad & Tobago. Its vaporization sendout is approx. 715 MMcf/d, with another 100 MMcf/d by truck. Its storage is 3.4 Bcf.

Columbia Gas Transmission, Inc. is a subsidiary of NiSource, Inc. and headquartered in Richmond, VA. The company serves customers along its nearly 12,000-mile pipeline system in 10 Northeastern, Midwestern, and Mid-Atlantic states. It transports an average of 3 Bcf/day. It enters New York State through Pennsylvania and runs along the southern counties of New York bordering Pennsylvania; it also serves New Jersey. It has storage of 650 Bcf.

Dominion Transmission, Inc., headquartered in Richmond, VA, is the interstate gas transmission subsidiary of Dominion Resources. Primarily a provider of gas transportation and storage services, Dominion Transmission, Inc. operates the world's largest underground natural gas storage system. Dominion Transmission, Inc. maintains 7,800 miles of pipeline in six states—Ohio, West Virginia, Pennsylvania, New York, Maryland and Virginia. The system enters New York State through Pennsylvania, and continues to points in western, central, and eastern New York, extending to the Albany area.

Empire Pipeline is a subsidiary of National Fuel Gas Company. Empire is a 24-inch diameter natural gas transmission pipeline that originates at the U.S./Canada border at Niagara, and extends easterly 233 miles from Buffalo, NY to near Syracuse and then south to Corning. Constructed in 1992 and in service since 1993, Empire has a rated capacity in excess of 750 million cubic feet per day.

Excelerate Energy operates the Northeast Gateway Deepwater LNG Port facility located approx. 13 miles offshore near Cape Ann, MA. The facility received its first shipment in May 2008. The physical infrastructure consists of a dual subsea buoysystem and an approx. 16 mile long pipeline connecting into the HubLine pipeline operated by Algonquin Gas Transmission. The Northeast Gateway infrastructure can accommodate gas deliveries up to 800 million cubic feet per day.

Granite State Gas Transmission, Inc. is a unit of Unitil. Granite State operates 86-miles of underground interstate pipeline extending from the MA-NH border through the New Hampshire coastal area to Portland, Maine, transporting gas from other pipeline companies. The NH portion began operation in 1956; in 1966 the line was extended to Maine.

Iroquois Gas Transmission System is a 411-mile interstate pipeline owned by a partnership of 5 U.S. and Canadian energy companies. It began operation in 1991. It transports natural gas from TransCanada PipeLine at the Ontario/NY border and travels through NY and CT to Long Island and into the New York City area. It has a peak day deliverability of 1.5 Bcf/d.

Maritimes & Northeast Pipeline (M&NE) is a partnership of Spectra Energy, Emera and ExxonMobil. It transports gas from the Maritimes to markets in Atlantic Canada and New England. The total pipeline is 690 miles, with about 338 miles located in Maine, New Hampshire and Massachusetts. Its U.S. capacity is 830 MMcf/d; its capacity in Canada is 555 MMcf/d.

Millennium Pipeline traverses New York's lower Hudson Valley and Southern Tier. It is comprised of 182 miles of 30 inch diameter steel pipeline and related 15,000 horsepower compressor station capable of transporting up to 650,000 dekatherms per day of natural gas. It is owned by subsidiaries of NiSource, National Grid and DTE Energy. It delivered 151 Bcf in 2011, up from 64 Bcf in 2009. It began commercial operations in December 2008.

National Fuel Gas Supply Corporation provides interstate natural gas transmission and storage for affiliated and nonaffiliated companies through an integrated gas pipeline system of 2,877 miles that extends from southwestern Pennsylvania to the New York-Canadian border at the Niagara River. It also owns and operates 28 underground natural gas storage areas and is co-owner and operator of four others.

Neptune LNG is an LNG facility located approximately ten miles off the coast of Gloucester, MA. It is owned by GDF SUEZ. It was completed in 2010. It connects with the Spectra underwater HubLine system via a 13 mile-interconnect. It is designed to deliver from 400 to 750 million cubic feet per day.

North Country Pipeline is an intrastate pipeline of approximately 22 miles that runs from the Canadian border in northeastern New York near Champlain to the Plattsburgh area, with natural gas imported from the TransCanada system. It has a capacity of about 100 DTH/day.

Portland Natural Gas Transmission (PNGTS) is sponsored by an international consortium of energy companies - TransCanada PipeLines and Gaz Métro. It transports western Canadian gas to New England from an interconnection with TransCanada PipeLines (through the TQM extension). On the U.S. side, it involves 292 miles of pipeline including 50 miles of variously sized laterals, extending through northern NH to southern Maine and interconnecting with Maritimes & Northeast through the Joint Facilities. Its capacity is 168 MMcf/d. It interconnects with the Maritimes & Northeast Pipeline at Westbrook, Maine; from there, the Joint Facilities line extends to Dracut, MA.

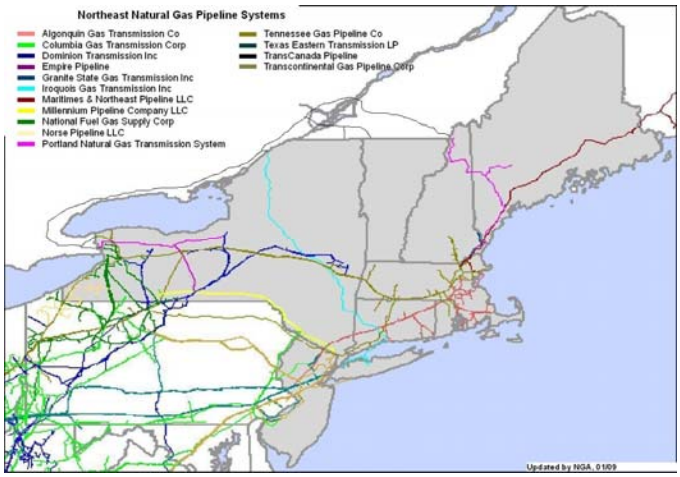
Repsol operates the Canaport LNG facility located in Saint John, New Brunswick, Canada; its project partner is Irving Oil. The facility received its first shipment in June 2009. The physical infrastructure consists of three storage tanks with total capacity of 10 Bcf. The terminal has a maximum sendout capacity of 1.2 Bcf/day. Regasified LNG from the terminal flows through the Brunswick Pipeline, a 90 mile pipeline connecting the terminal to the Maritimes & Northeast Pipeline at the Maine border.

Tennessee Gas Pipeline Company is a business unit of Kinder Morgan. The Tennessee Gas Pipeline has 13,800 miles of pipeline. Tennessee's system enters New England at two points: western Mass. near West Pittsfield and southern Connecticut near Greenwich. It enters New York at several points – from southwestern Pennsylvania, central Pennsylvania, an interconnect at Niagara, and through New Jersey into the New York City area and on to Connecticut. It has approx. 90 Bcf of storage, 75 compressor stations, and a winter peak of 7.6 Bcf/d.

Texas Eastern Transmission Company is a business unit of Spectra Energy. Its system incorporates approximately 9,200 miles of pipe, from the U.S. Gulf Coast to New Jersey. Its capacity is 6.7 Bcf/d, with storage of 75 Bcf.

TransCanada PipeLine has a network of approximately 35,500 miles of pipeline which transports the majority of western Canada's natural gas production to markets in Canada and the United States. It interconnects with several systems serving New York and New England.

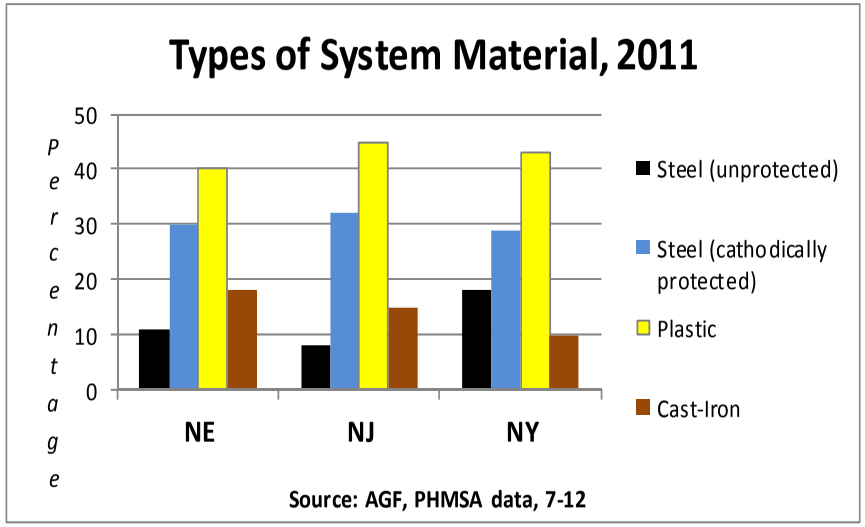
Transcontinental (Transco) is a subsidiary of Williams Company. The Transco pipeline comprises an 10,000-mile pipeline system, extending from South Texas to New York City. The peak system design capacity is 9.7 billion cubic feet per day. In the Northeast, it provides gas service to New York City, New Jersey and the Mid-Atlantic region. It has 52 compressor stations and 200 Bcf of seasonal storage.



UTILITY MILES OF PIPELINE AND MAIN, NORTHEAST

The miles of pipeline and distribution mains form a basic indicator of access to the gas market. The Northeast has continued to increase both its transmission and distribution systems; planned infrastructure enhancements and LDC system growth will produce expansions to these numbers in coming years.

The chart below shows percentage of pipeline mains by material by region, 2011. Plastic pipe is in the 40 percentile range for all three regions, but is the dominant method for new distribution pipe, and now represents 65% of all U.S. system pipe.



Distribution & Transmission

Connecticut	8,234
Maine	1,182
Massachusetts	22,194
New Hampshire	2,123
New Jersey	34,918
New York	51,953
Rhode Island	3,226
Vermont	750
Total	*124,580*

Source: PHMSA, U.S. Department of Transportation

NORTHEAST PIPELINE PROJECTS IN PROCESS

2012 saw several infrastructure projects placed in service in the region, to link Marcellus supplies to market. Several other projects are in the regulatory and development process for the period 2013-2018 and are summarized below. This list changes with market conditions—please visit NGA's web site during the year for updated listings.

PROJECT	COMPANY	DESCRIPTION	EST. IN-SERVICE	STATUS
Minisink Compressor	Millennium Pipeline	Proposed new compressor station in town of Minisink, NY. Will increase pipeline capacity from 525,400 to 675,000 Dth/d.	1st qtr, 2013	Filed with FERC, 7-11. Approved by FERC, 7-12.
Line "N" 2013	National Fuel Gas Supply	Planned capacity 30,000 Dth/d. 1.2 miles of 24" replacement.	Nov. 2013	Blanket certificate. Open season closed, 3-12.
NJ/NY Expansion Project	Spectra Energy	800 MMcf/d expansion connecting Northeastern PA Marcellus supplies with a new delivery point in Manhattan. Signed customers are Chesapeake Energy, Con Edison and StatOil Natural Gas. 15.9 miles of new 30" pipe and replacement of approx. 5 miles of 42" pipe on Texas Eastern system.	Nov. 2013	Announced 12-09. Filed with FERC, 12-10. FERC issues draft EIS, 9-11. Approved by FERC, 5-12.
Northeast Supply Link	Williams / Transco	The proposed Northeast Supply Link Project is designed to provide 250,000 dekatherms per day of firm service on Williams Partners' Transco natural gas pipeline. Involves 13 miles of additional pipe in PA and NJ.	Nov. 2013	Open season held, March 2010. Filed with FERC, 12-11.

This table is based on publicly-available information as of Nov. 2012; project details may change.

NORTHEAST PIPELINE PROJECTS IN PROCESS (cont'd)

PROJECT	COMPANY	DESCRIPTION	EST. IN-SERVICE	STATUS
Hancock Compressor	Millennium Pipeline	Proposed new compressor station.	Nov. 2013	
MPP	Tennessee Gas Pipeline	240,000 Dth/d from the developing production region along TGP's 300 line to serve established markets, including markets in the Northeast. Shippers are Chesapeake Energy and Southwestern.	Nov. 2013	Shippers confirmed. FERC order received.
Mercer Expansion	National Fuel Gas Supply	Planned capacity of 150,000 Dth/day at Mercer, with modifications to TGP IC. 82 miles of 24" pipe.	2014	Blanket certificate.
Central Tioga County Extension	Empire Pipeline (NFGS)	Planned capacity of 200,000 to 250,000 Dth/day.	2014 / 2015	Market dependent.
Rockaway Lateral / Northeast Connector	Williams / Transco	The project would involve the construction of a 3.17-mile, 26-inch pipeline lateral (approximately 2.27 miles of offshore pipeline and 0.38 miles of onshore pipeline) interconnecting with a 26" lateral pipeline proposed to be constructed by National Grid. Adds an incremental 100 Mdt/day as well as being able to deliver existing Long Beach volumes. Sized for future expansions up to an add'l 432 Mdt/day.	Nov. 2014	Precedent agreements signed June 2009.

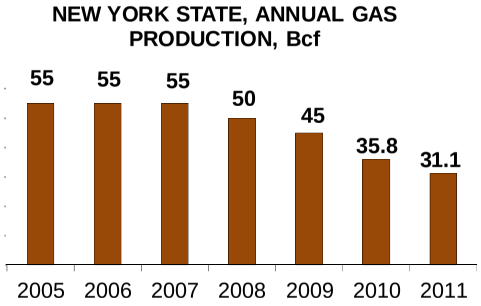
This table is based on publicly-available information as of Nov. 2012; project details may change.

NORTHEAST PIPELINE PROJECTS IN PROCESS (cont'd)

PROJECT	COMPANY	DESCRIPTION	EST. IN-SERVICE	STATUS
TEAM 2014	Spectra Energy	2nd phase of TEAM provides additional opportunities in OH/PA/WV region. Fully scalable potential up to 1.4 Bcf/d. Chevron USA and EQT Energy are confirmed as anchor shippers.	4th qtr, 2014	Open season held; anchor shippers announced, Apr. 2012.
Rose Lake	Tennessee Gas Pipeline	Will provide 230 MMcf/d of firm transportation capacity on Tennessee's system in northeastern PA for markets in the Northeast.	Nov. 2014	FERC filing, 10-12.
Constitution Pipeline	Cabot/Williams	Approximately 120-mile Constitution Pipeline is being designed to extend from Susquehanna County, PA, to the Iroquois Gas Transmission and Tennessee Gas Pipeline systems in Schoharie County, N.Y. Proposed capacity of 650 MMCf/d. Cabot and Southwestern are announced shippers.	2015	Announced spring 2012. Pre-filing process with FERC.
Algonquin Incremental Market (AIM)	Spectra Energy	Approximate 450 MMcf/d takeaway capacity from Ramapo to head of G system. Geared to Northeast and New England.	2nd half 2016	Open season, Sept. 20 to Nov. 2, 2012
Northeast Expansion	Tennessee Gas Pipeline	Proposed enhancement to link Tennessee Marcellus receipts with the Iroquois Transmission system and thereby link into New England (zones 5, 6). Deliveries to upstate NY and New England. Proposed capacity from 0.5 to 1.7 Bcf/d.	Nov. 2016 to 2018	Proposed.

This table is based on publicly-available information as of Nov. 2012; project details may change.

NATURAL GAS PRODUCTION IN NORTHEAST U.S.



Source: NY State Dept. of Environmental Conservation/ Office of Oil & Gas

The New York State Department of Environmental Conservation / Division of Mineral Resources reports that gas production in the state in 2011 was 31.1 billion cubic feet (Bcf), down from 36 Bcf in 2010, or 13%. The 2011 production was driven primarily by wells in the Trenton-Black River formation in the Finger Lakes region. The production is from conventional gas wells; the hydraulic fracturing drilling process is under environmental review in the state.

Natural gas production in Pennsylvania continues steady and rapid growth, as illustrated in the chart below from the U.S. Energy Information Administration (EIA). From June 2011 to June 2012, Marcellus production nearly doubled in the state.

As of fall 2012, Pennsylvania shale gas production is about 6.8 Bcf per day. Pennsylvania produces close to 10% of total U.S. dry gas production.

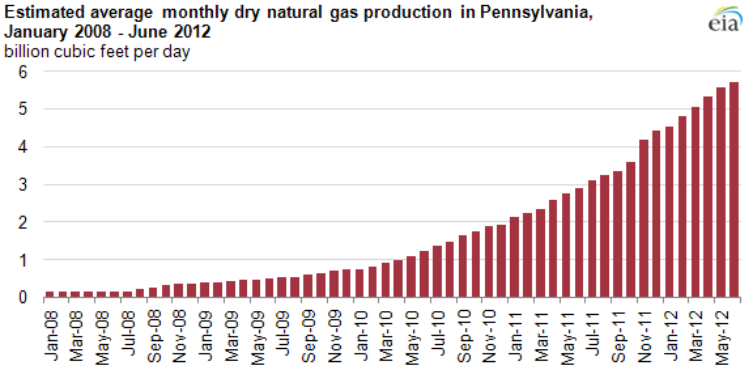
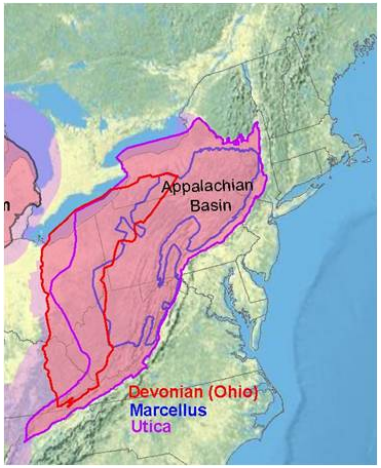


Chart: U.S. Energy Information Administration

SHALE GAS DEVELOPMENT IN THE NORTHEAST / MIDWEST



Map: U.S. EIA

Significant shale gas basins have emerged in the Northeast region in recent years: the Marcellus Shale and Utica Shale in the Appalachian basin. The Marcellus Shale runs through several mid-Atlantic states, including West Virginia, Pennsylvania and New York. Shale gas now represents about 35% of U.S. dry natural gas production—up from less than 5% in 2007.

Estimates are that the Marcellus basin alone may hold as much as 500 trillion cubic feet (Tcf) of natural gas.

Current Marcellus production is centered in Pennsylvania and West Virginia. Production there is about 8 billion cubic feet per day, and is expected to grow further in coming years.

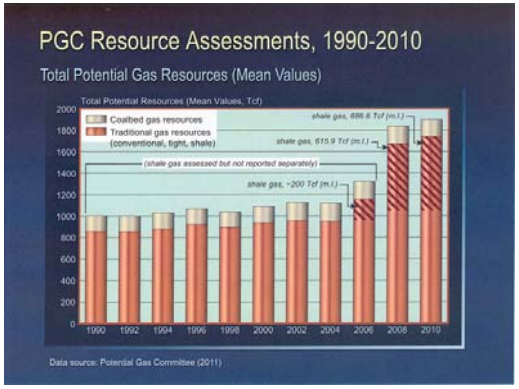
The Utica Shale, centered principally in Ohio, is both an oil and natural gas play, but production volumes have mostly been oil to date, reflecting the price spread between natural gas and oil.

New technology in the form of horizontal drilling has enabled producers to access the shale gas in a technically and economically feasible manner. The developments face challenges of siting, water usage and water treatment, but responsible environmental management is an essential part of the process.

Already, as outlined in preceding pages, the interstate pipelines in the Northeast are working to increase their interconnections to bring these new supplies to market. This new infrastructure development is quickly transforming the gas supply dynamic in the region.

There are also potential shale resources located in Eastern Canada, in Quebec and the Maritimes (New Brunswick and Nova Scotia). Whether these resources are developed has yet to be seen.

INCREASING GAS POTENTIAL IN THE U.S.



The major natural gas supply news of recent years has been the increasing output from unconventional gas resources, principally shale. In a September 2010 report, the U.S. EIA noted: "With these recent gains in domestic production, the United States is now the largest producer of natural gas in the world." And future potential seems bright. Every 2 years, the Potential Gas Committee (PGC) of the Colorado School of Mines releases a long-term assessment of U.S. potential natural gas supply. Its 2010 assessment, released in April 2011, and illustrated in the PGC chart above, shows an increase in total estimated potential supplies from the previous study, due in large part to shale (shown in the red stripe). The 2010 assessment is "the highest resource evaluation in the Committee's 46-year history."

U.S. NATURAL GAS RESERVE BASE

U.S. Wet Natural Gas Proved Reserves, 1980-2010

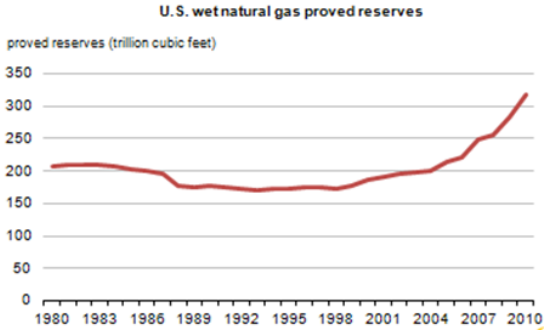


Chart: U.S. Energy Information Administration, 8-12

The proved reserves of natural gas continue to grow in the U.S. This reflects new discoveries and extensions of existing fields, as well as the role of technology in increasing access. The U.S. EIA chart above shows changes in the proved reserve base over the last 30 years. In its 2010 annual report (released in 2012), EIA noted: "proved reserves of U.S. oil and natural gas in 2010 rose by the highest amounts ever recorded since the U.S. Energy Information Administration (EIA) began publishing proved reserves estimates in 1977." EIA added: "Pennsylvania's proved natural gas reserves more than doubled in 2010, contributing about one-fifth of the overall U.S. increase."

LNG SERVING NEW ENGLAND MARKET

Import facilities:

Distrigas terminal, Everett, MA (part of GDF SUEZ). Began operation in 1971.
• Storage of 3.4 billion cubic feet.
• On a sustainable basis, the vaporization capacity is approximately 715 million cubic feet per day.
• Additional sendout capability of 100 MMBtu/d in liquid via truck.

Northeast Gateway facility, offshore Cape Ann, MA. Began operation in 2008.
• Operated by Excelerate Energy.
• Sendout capability of 0.4 to 0.8 Bcf/d in vapor via underwater HubLine.

Canaport facility, Saint John, NB, Canada. Began operation in 2009.
• Operated by Repsol in partnership with Irving Oil.
• Sendout capability of 1 Bcf/d in vapor via Brunswick Pipeline into Maritimes & Northeast.
• Three storage tanks of 3.3 Bcf each, or 10 Bcf total.

Neptune facility, offshore Gloucester, MA (part of GDF SUEZ). Completed in 2010.
• Average sendout capability of 0.4 Bcf/day, but peak day capability of 0.75 Bcf/d.
• Connects to underwater pipeline, HubLine, via 13.4 miles of offshore pipe.

LDC satellite tanks/peak-shaving units:

• 45 tanks in 30 communities in 5 states (CT, ME, MA, NH, RI).
• LDCs' total LNG storage capacity is 16 Bcf.
• LDCs' vaporization capacity is 1.4 Bcf/day.
• Liquefaction is available at 6 LDC-owned facilities - total liquefaction capability is 0.05 Bcf/day.

UNDERGROUND STORAGE IN NY

• 25 natural gas storage facilities.
• Total capacity: 245 billion cubic feet.
• Maximum deliverability: 1.98 Bcf/day

Source: U.S. Energy Information Administration, New York State Dept. of Environmental Conservation

LNG IN NEW YORK

LDC-owned peak-shaving plants:

• New York City area and Long Island, on Con Edison and National Grid systems.
• Storage capacity of approximately 3.2 Bcf.
• LNG obtained via liquefaction of pipeline gas.
• Vaporization capacity is approximately 0.5 Bcf/day.
• Liquefaction capacity is approximately 0.018 Bcf/day.

LNG IN NEW JERSEY

• Storage capacity of approximately 3.7 Bcf.
• LDC tanks in 6 communities, owned by 4 LDCs, as well as one pipeline-owned facility.
• Vaporization capacity is approximately 0.7 Bcf/day.

NORTHEAST NATURAL GAS STORAGE

Storage is essential to the natural gas supply and delivery system. The principal storage system in the U.S. is underground storage, in salt caverns, aquifers, and depleted oil and gas fields. There are 400 such facilities in the U.S., with demonstrated peak working gas capacity of about 4.1 Tcf.

For the Northeast, there are two main types of storage: underground, and liquefied natural gas (LNG).

There is no underground storage in New England or New Jersey, as the map indicates, because of the unsuitability of the region's geology.

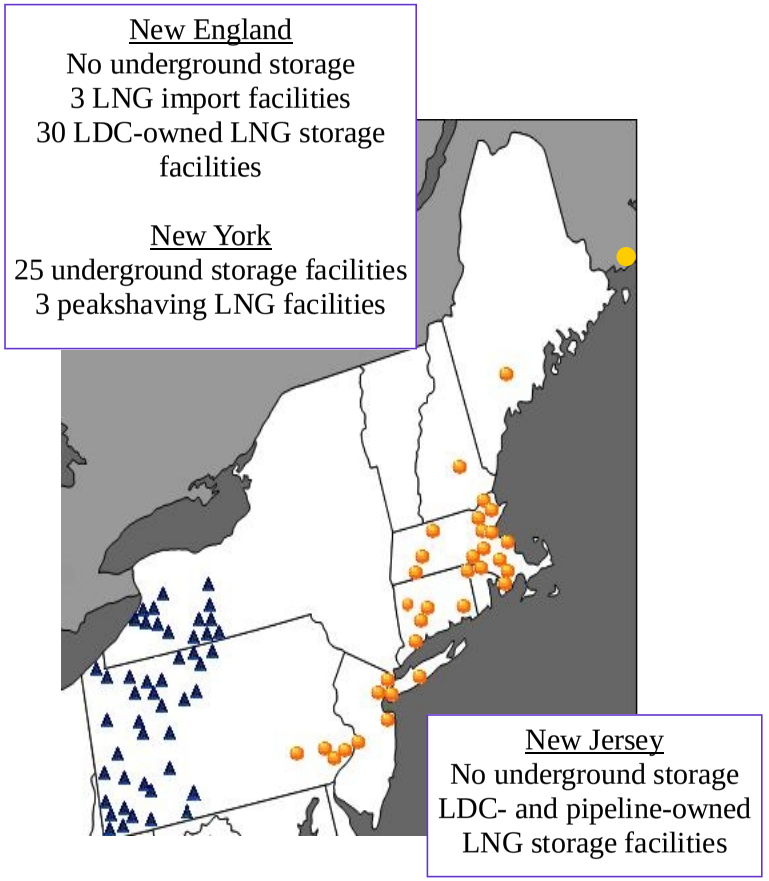
New England and New Jersey do utilize LNG. There are three LNG import facilities operating in the Northeast, all near the greater Boston area. There is also a facility in New Brunswick, Canada, close to the U.S. border.

In addition, the LDCs operate above-ground LNG storage tanks for peak-shaving.

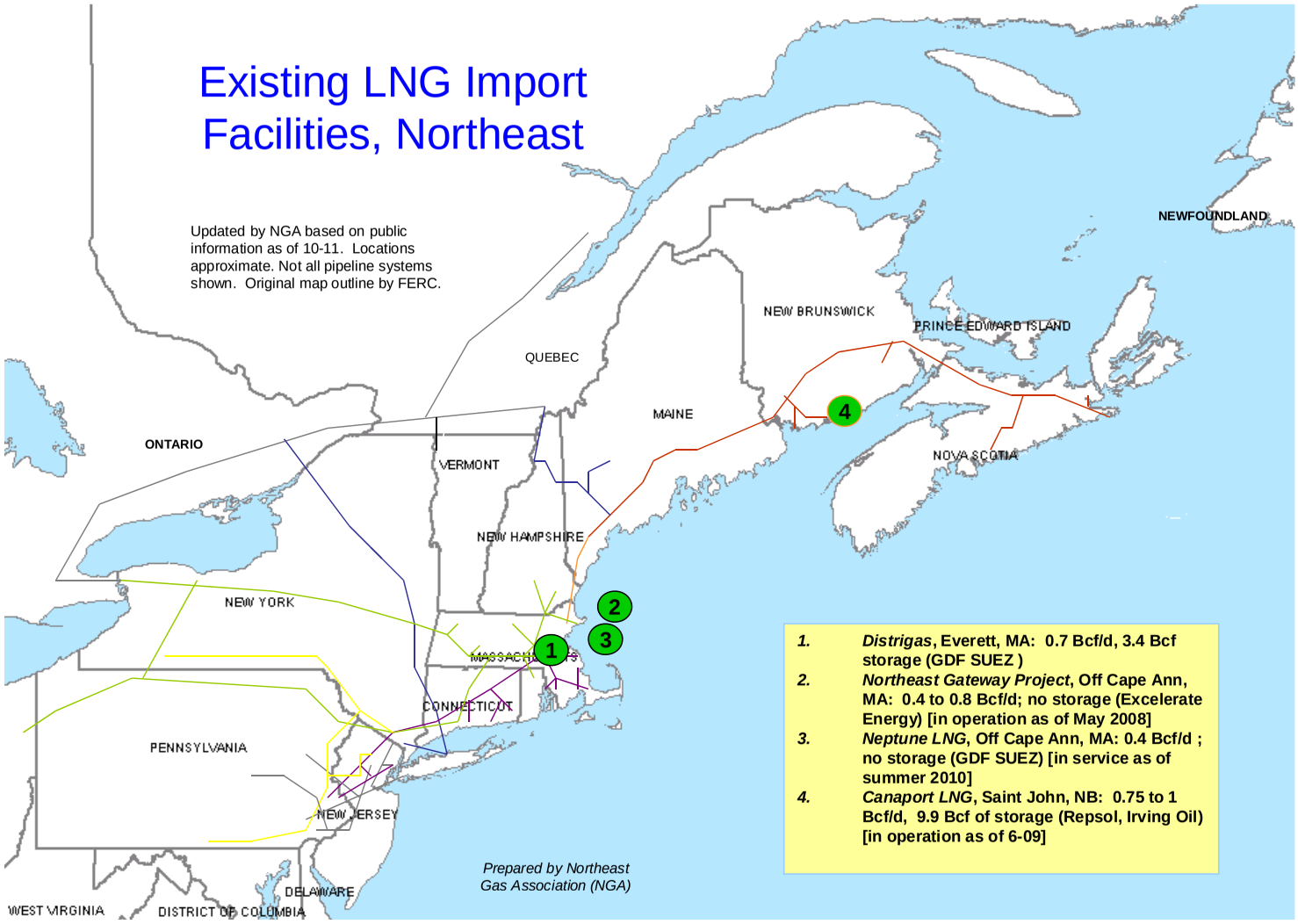
Pennsylvania has considerable underground gas storage, 9% of total U.S. capacity.

New York has 25 underground storage facilities. New York's underground storage represents about 2.7% of the U.S. total.

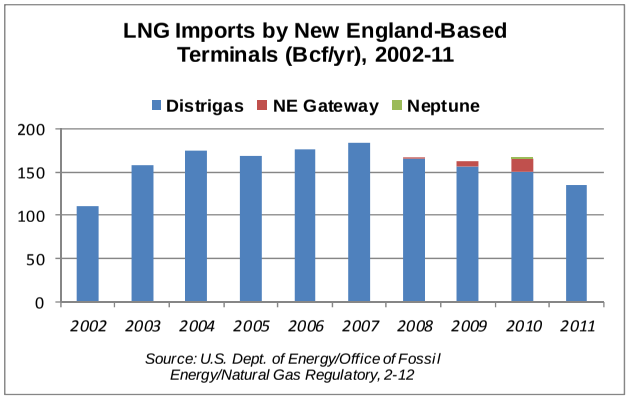
New York also has 3 LNG peakshaving facilities, in the downstate area.



Blue = underground storage, orange = LNG.
Source: U.S. EIA


Existing LNG Import Facilities, Northeast
Updated by NGA based on public information as of 10-11. Locations approximate. Not all pipeline systems shown. Original map outline by FERC.
NEWFOUNDLAND
NEW BRUNSWICK
PRINCE EDWARD ISLAND
QUEBEC
MAINE
ONTARIO
VERMONT
NOVA SCOTIA
NEW HAMPSHIRE
NEW YORK
MASSACHUSETTS
CONNECTICUT
PENNSYLVANIA
NEW JERSEY
DELAWARE
WEST VIRGINIA
DISTRICT OF COLUMBIA
1
2
3
4
1. Distrigas, Everett, MA: 0.7 Bcf/d, 3.4 Bcf storage (GDF SUEZ)
2. Northeast Gateway Project, Off Cape Ann, MA: 0.4 to 0.8 Bcf/d; no storage (Excelerate Energy) [in operation as of May 2008]
3. Neptune LNG, Off Cape Ann, MA: 0.4 Bcf/d ; no storage (GDF SUEZ) [in service as of summer 2010]
4. Canaport LNG, Saint John, NB: 0.75 to 1 Bcf/d, 9.9 Bcf of storage (Repsol, Irving Oil) [in operation as of 6-09]
Prepared by Northeast Gas Association (NGA)

LNG ANNUAL VOLUMES IMPORTED INTO NEW ENGLAND TERMINALS, 2011



LNG imports into New England remained steady if reduced in 2011, at 135 Bcf total, compared to 165 in 2010. Distrigas of MA represented nearly 40% of the U.S. total. The two offshore LNG facilities-Northeast Gateway and Neptune-had no cargoes in 2011 and none to date in 2012 (through November).

The low price of domestic shale gas and the higher price for LNG in overseas markets is rapidly changing the LNG dynamic in the U.S. and regionally.

Source: U.S. Department of Energy, Office of Fossil Energy, Office of Natural Gas & Petroleum Import Activities.

Liquefied natural gas (LNG) is an important component of the region's gas supply. Distrigas of Massachusetts Corp. (DOMAC), a subsidiary of GDF SUEZ, owns and operates a land-based facility at Everett, MA. There are two facilities located offshore near Gloucester, MA: the Northeast Gateway Deepwater Port owned and operated by Excelerate Energy; and Neptune LNG, owned by GDF SUEZ.

Repsol's Canaport LNG facility in nearby New Brunswick, Canada has been a key supplier since its startup in mid-2009. Since its inception, it has supplied about 270 Bcf to the market. The chart below from the FERC shows the levels of LNG supplies from Canaport (shown in red) that have flowed into the M&NE Pipeline. As shown in the graphic, the level of volumes has been lower through much of 2012, again reflecting changing supply dynamics.

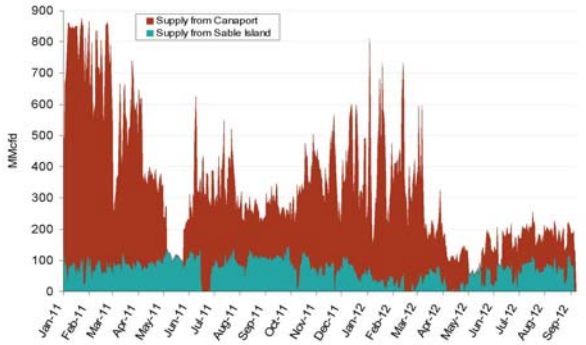


Chart: U.S. FERC, Office of Market Oversight, Sept. 2012

PROPANE / AIR: DECLINING LDC SHARE

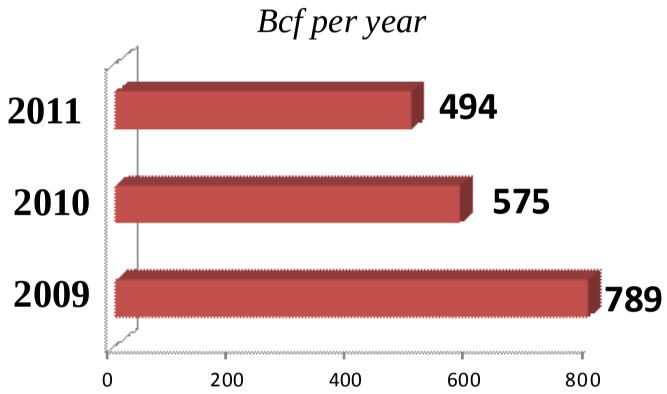
Propane / LP Air Storage Capacity at New England LDCs: 1998 to 2012

Year	Number of Communities with Facilities	Number of Tanks	Storage Capacity in Gallons
1998	**46**	**346**	**16,053,819**
2012	**17**	**127**	**5,613,572**

As natural gas pipeline capacity and LNG storage have increased in the region, propane storage at the gas-utility level has declined. Propane/air has traditionally been used to supplement gas pipeline capacity for several utilities in the Northeast.

The rise of natural gas production in the Appalachian region meanwhile may create opportunities for propane development in the region.

CANADIAN GAS EXPORTS TO THE NORTHEAST U.S.



Source: Canada's National Energy Board

Canadian imports have long been a major source of U.S. - and Northeast - natural gas supply. The Northeast has drawn supplies from Alberta, offshore Nova Scotia and New Brunswick. Increasingly however the supply dynamic is changing, as U.S. domestic production rises, reducing the need for imports. As indicated in the chart above, Northeast U.S. imports have declined considerably over the last few years.

In 2011, the U.S. met 95% of its gas consumption needs from its own domestic supplies. U.S. pipeline imports from Canada fell by 5% in 2011, to 3,110 Bcf. (Around 92% of U.S. imports of natural gas in 2011 came from Canada.) For the first 8 months of 2012, U.S. EIA reports that net imports from Canada to the U.S. fell by about 7% from the same period in 2011.

Sources: National Energy Board, Canada, and U.S. Department of Energy, "U.S. Natural Gas Imports and Exports 2011"

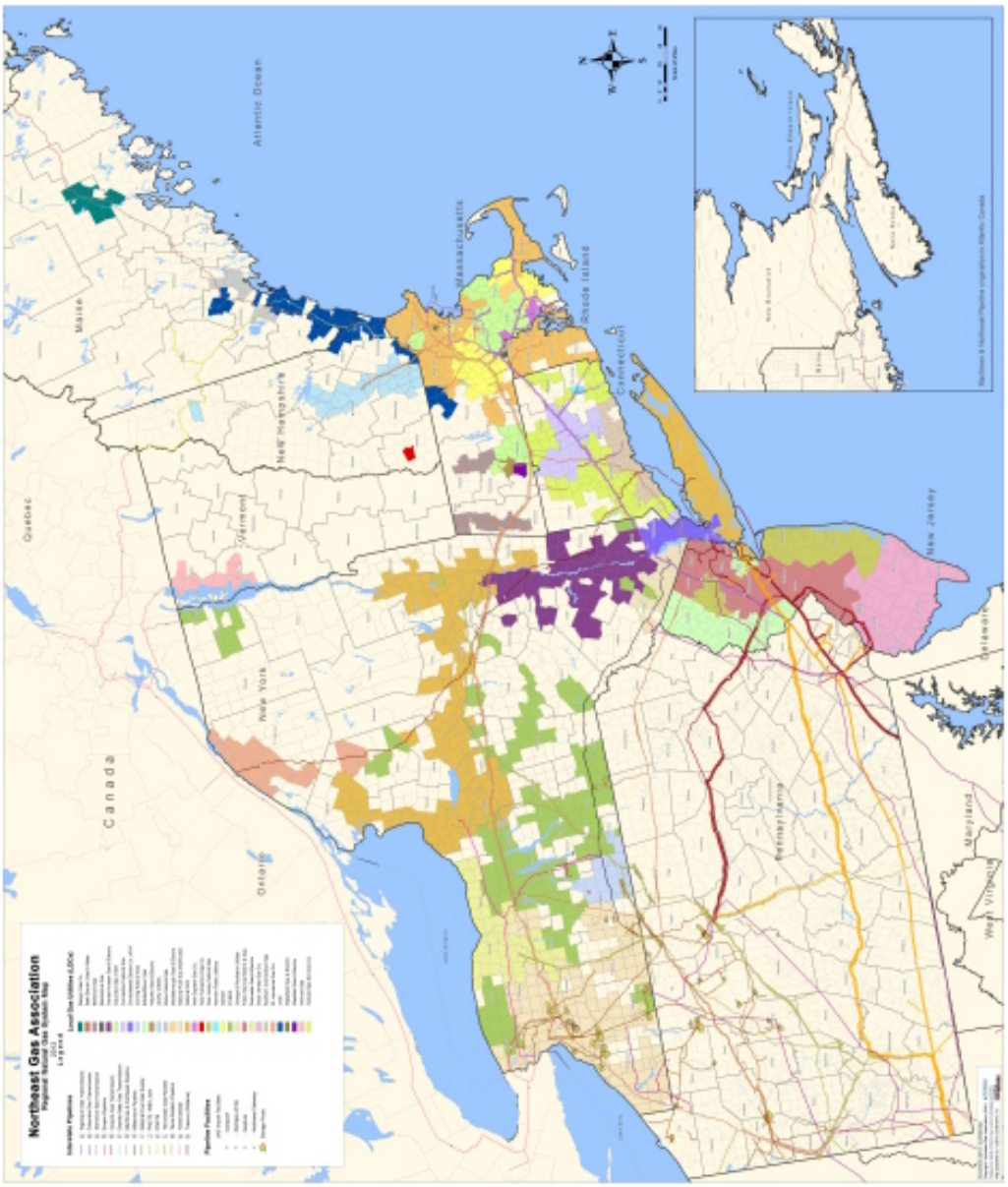
IV.

NATURAL GAS TRENDS IN THE NORTHEAST

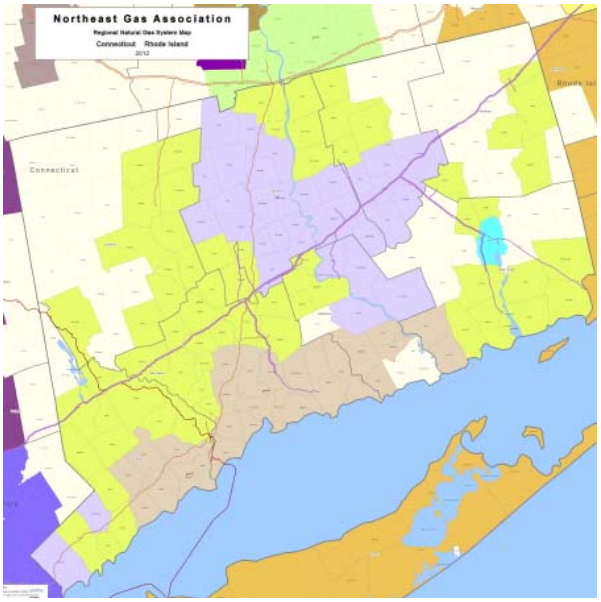
This section provides an introduction to the natural gas industry in the Northeast.

Among the areas addressed are:

- *Gas consumption by sector*
- *Price trends*
- *Growth areas*
- *Gas & power generation.*


Northeast Gas Association
Regional Natural Gas System Map
Atlantic Ocean
Maine
New Hampshire
Vermont
New York
Massachusetts
Rhode Island
Connecticut
New Jersey
Pennsylvania
Maryland
West Virginia
Delaware
Ohio
Canada
Quebec
Ontario

CONNECTICUT



Natural Gas Use in Connecticut

Primary energy: 27%

Electric generation capacity: 32%

% of households with gas as main heating fuel: 32%

Annual consumption: 223 billion cubic feet (Bcf) of natural gas.

Natural Gas Pipelines Serving Connecticut

- ***Algonquin Gas Transmission***, a subsidiary of Spectra Energy.
- ***Iroquois Gas Transmission***.
- ***Tennessee Gas Pipeline Company***, a subsidiary of Kinder Morgan.

Natural Gas Utilities in Connecticut

There are 4 natural gas utilities:

Connecticut Natural Gas
(purple area on map)

Norwich Public Utilities
(aqua area on map)

The Southern Connecticut Gas Co.
(light brown area on map)

Yankee Gas Services Co.
(lime-green area on map)

Natural Gas Utility Customers:

There are approximately 550,000 natural gas customers in the state.

LNG Storage in Connecticut

There is utility liquefied natural gas (LNG) storage facilities in four communities.

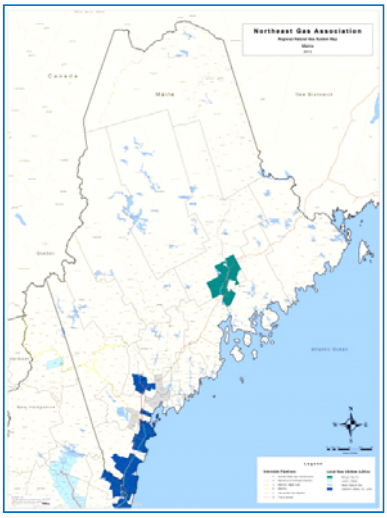
Underground Storage

None.

Natural Gas Production

None.

MAINE



Natural Gas Utilities in Maine

There are 3 natural gas utilities:

Bangor Gas
(green area on map)

Maine Natural Gas
(grey area on map)

Unitil
(blue area on map)

Natural Gas Use in Maine

Primary energy: 20%

Electric generation capacity: 48%

% of households with gas as main heating fuel: 5%

Annual consumption: 68 billion cubic feet (Bcf) of natural gas.

Natural Gas Utility Customers :

There are approximately 21,000 natural gas customers in the state.

Natural Gas Pipelines Serving Maine

4 natural gas pipelines transport gas:

- ***Portland Natural Gas Transmission (PNGTS).*** It is owned by TransCanada PipeLines and Gaz Métro.
- ***Maritimes & Northeast Pipeline***. It is owned by Emera, Spectra Energy and Exxon Mobil.
- ***Joint Facilities of PNGTS and Maritimes & Northeast Pipeline***.
- ***Granite State Gas Transmission***. It is owned by Unitil.

LNG Storage in Maine

There is a utility liquefied natural gas (LNG) storage facility in 1 community.

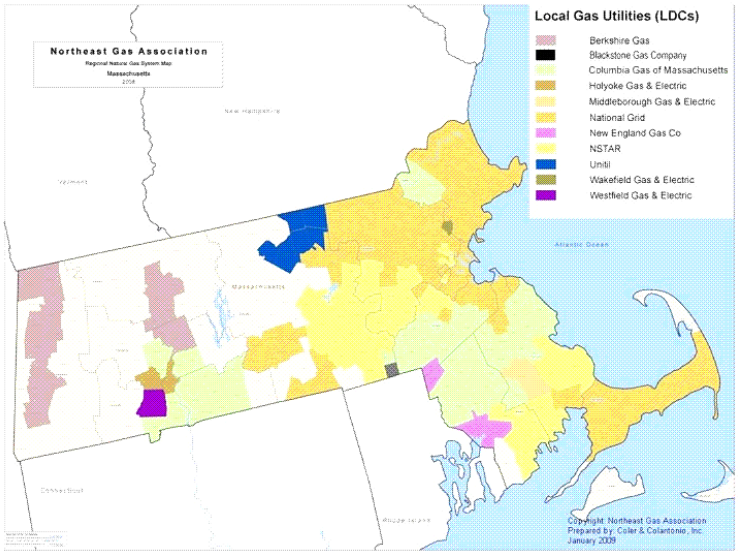
Underground Storage

None.

Natural Gas Production

None.

MASSACHUSETTS



Natural Gas Pipelines Serving Massachusetts

- ***Algonquin Gas Transmission***, a subsidiary of Spectra Energy.
- ***Tennessee Gas Pipeline Company***, a subsidiary of Kinder Morgan.
- ***Joint Facilities of PNGTS and Maritimes & Northeast***.

Natural Gas Use in Massachusetts

Primary energy: 32%

Electric generation capacity: 48%

% of households with gas as main heating fuel: 49%

Annual consumption: 442 billion cubic feet (Bcf) of natural gas.

Local Gas Utilities:

There are eleven natural gas utilities in the state.

Natural Gas Utility Customers:

There are approximately 1.5 million natural gas customers in the state.

LNG Import Facilities

There are three—one onshore, two offshore.

- **Distrigas of Massachusetts**, a subsidiary of GDF SUEZ NA
- **Neptune**, a subsidiary of GDF SUEZ NA
- **Northeast Gateway**, a subsidiary of Excelerate Energy

LNG Storage in Massachusetts

There is utility liquefied natural gas (LNG) storage facilities in 19 communities.

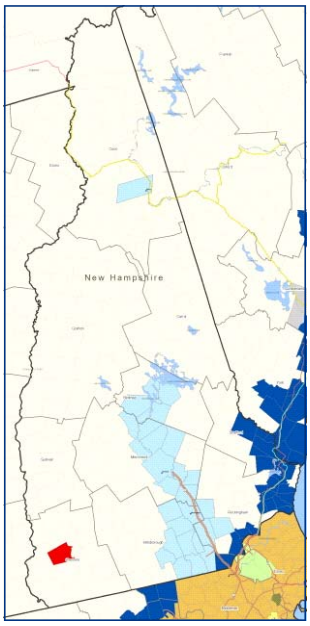
Underground Storage

None.

Natural Gas Production

None.

NEW HAMPSHIRE



Natural Gas Utilities in New Hampshire

There are 3 natural gas utilities:

Liberty Utilities
(light blue area on map)

New Hampshire Gas Co.
(red area on map)

Unitil Corp.
(dark blue area on map)

Natural Gas Use in New Hampshire

Primary energy: 21%

Electric generation capacity: 29%

% of households with gas as main heating fuel: 20%

Annual consumption: 69 billion cubic feet (Bcf) of natural gas.

Natural Gas Utility Customers :

There are approximately 117,000 natural gas customers in the state.

Natural Gas Pipelines Serving New Hampshire

4 natural gas pipelines transport gas:

- ***Portland Natural Gas Transmission (PNGTS).*** It is owned by TransCanada PipeLines and Gaz Métro.
- ***Tennessee Gas Pipeline Company***, a subsidiary of Kinder Morgan.
- ***Joint Facilities of PNGTS and Maritimes & Northeast Pipeline***.
- ***Granite State Gas Transmission***. It is owned by Unitil.

LNG Storage in New Hampshire

There is utility liquefied natural gas (LNG) storage facilities in 3 communities.

Underground Storage

None.

Natural Gas Production

None.

NEW JERSEY

Natural Gas Utilities in New Jersey
There are 4 natural gas utilities:

Elizabethtown Gas
(pale green area on map)

New Jersey Natural Gas
(dark gold area on map)

PSE&G
(dark red area on map)

South Jersey Gas
(light purple area on map)

Natural Gas Use in New Jersey

Primary energy: 27%

Electric generation capacity: 56%

% of households with gas as main heating fuel: 74%

Annual consumption: 655 billion cubic feet (Bcf) of natural gas.

Natural Gas Utility Customers:

There are approximately 2.9 million natural gas customers in the state.

Natural Gas Pipelines Serving New Jersey

- ***Columbia Transmission***, a subsidiary of NiSource.
- ***Dominion Transmission***
- ***Texas Eastern Transmission***, a subsidiary of Spectra Energy.
- ***Tennessee Gas Pipeline Company***, a subsidiary of Kinder Morgan.
- ***Transcontinental Pipeline***, a subsidiary of Williams.

LNG Storage in New Jersey

There is utility liquefied natural gas (LNG) storage facilities in several communities.

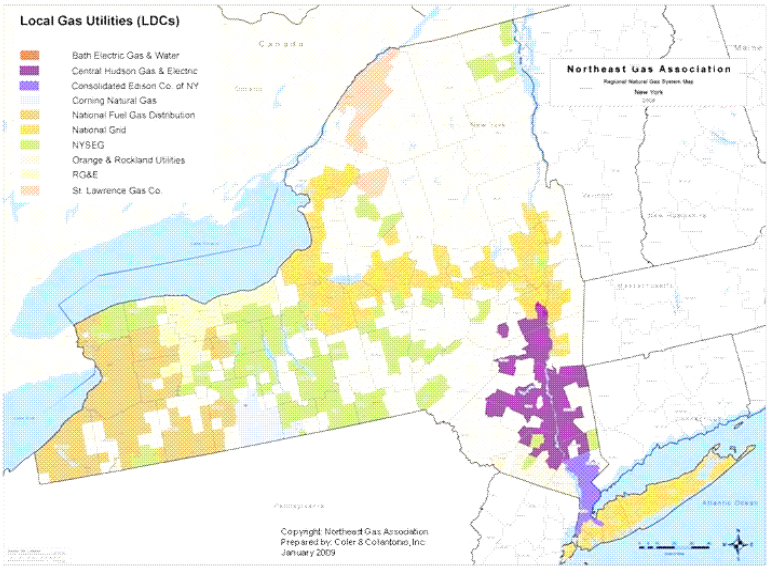
Underground Storage

None.

Natural Gas Production

None.

NEW YORK



Natural Gas Use in New York

Primary energy: 33%

Electric generation capacity: 17% gas, with another 38% of gas/oil.

% of households with gas as main heating fuel: 56%

Annual consumption: 1,199 billion cubic feet (Bcf) of natural gas.

Local Gas Utilities:

There are ten natural gas utilities in the state.

Natural Gas Utility Customers:

There are approximately 4.7 million natural gas customers in the state.

Natural Gas Production

In 2011, production was 31 Bcf.

Natural Gas Pipelines Serving NY

- ***Algonquin Gas Transmission and Texas Eastern***
- ***Columbia Transmission***
- ***Dominion***
- ***Empire Pipeline***
- ***Iroquois Gas Transmission***
- ***Millennium Pipeline***
- ***National Fuel Gas Supply***
- ***North County Pipeline***
- ***Tennessee Gas Pipeline Company***
- ***Transcontinental Pipeline.***

LNG Storage in New York

There is utility liquefied natural gas (LNG) storage facilities in three communities.

Underground Storage

Approximately 245 Bcf.

RHODE ISLAND

Natural Gas Utility in Rhode Island

There is 1 natural gas utility:

National Grid
(tan area on map)

Natural Gas Use in Rhode Island

Primary energy: 48%

Electric generation capacity: 99%

% of households with gas as main heating fuel: 51%

Annual consumption: 99 billion cubic feet (Bcf) of natural gas.

Natural Gas Utility Customers:

There are approximately 248,000 natural gas customers in the state.

Natural Gas Pipelines Serving Rhode Island

2 natural gas pipelines transport gas:

- ***Algonquin Gas Transmission,*** a subsidiary of Spectra Energy.
- ***Tennessee Gas Pipeline,*** a subsidiary of Kinder Morgan.

LNG Storage in Rhode Island

There is utility liquefied natural gas (LNG) storage facilities in 3 communities.

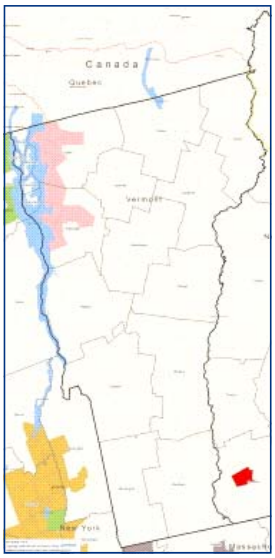
Underground Storage

None.

Natural Gas Production

None.

VERMONT



Natural Gas Utility in Vermont
There is 1 natural gas utility:

Vermont Gas Systems
(pink area on map)

Natural Gas Use in Vermont

Primary energy: 6%

Electric generation capacity: 0%

% of households with gas as main heating fuel: 15%

Annual consumption: 8.5 billion cubic feet (Bcf) of natural gas.

Natural Gas Utility Customers :

There are approximately 43,000 natural gas customers in the state.

Natural Gas Pipeline Supplying Vermont

1 natural gas pipeline transports gas to the VT border:

- ***TransCanada Pipelines***.

LNG Storage in Vermont

None.

Underground Storage

None.

Natural Gas Production

None.

NORTHEAST STATES' ANNUAL NATURAL GAS CONSUMPTION BY SECTOR, 2011 (Bcf)

STATE	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	ELECTRIC POWER	*TOTAL**
CT	44	45	26	108	***223***
ME	1	6	27	34	***68***
MA	129	81	45	186	***442***
NH	7	9	6	47	***69***
NJ	214	192	50	199	***655***
NY	394	291	76	434	***1,199***
RI	17	11	7	64	***99***
VT	3	2	3	0.05	***8***

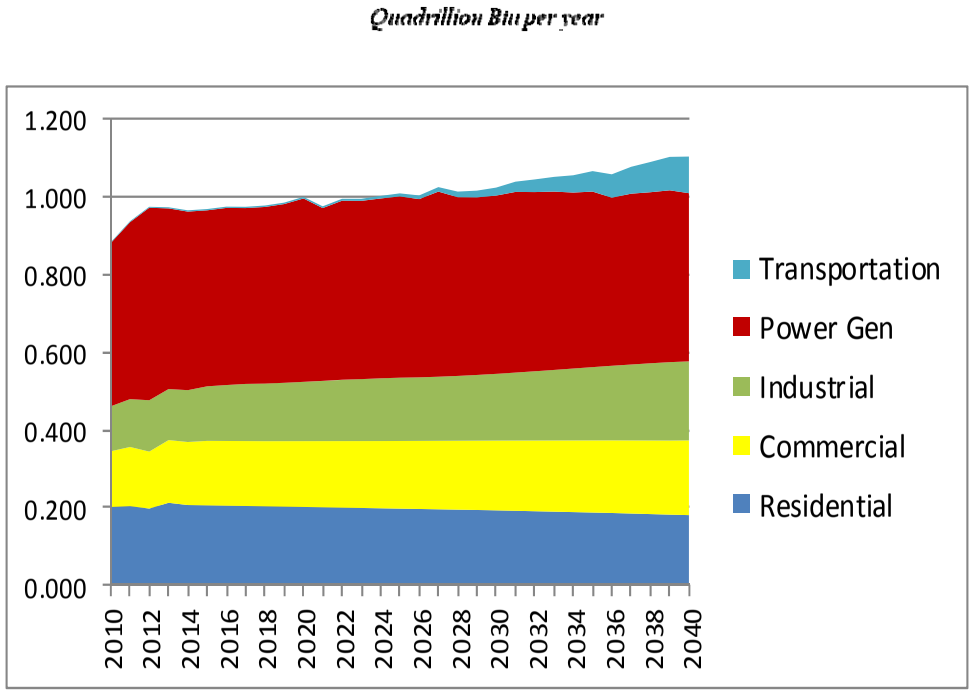
Source: U.S. Energy Information Administration, "Natural Gas Annual 2011," released January 2013. Numbers are rounded-off. *Vehicle fuel consumption not shown, which slightly increases total number for some states.

PROJECTED NATURAL GAS MARKET GROWTH, NEW ENGLAND

U.S. EIA projects natural gas to grow at an annual rate of 0.5% in New England through 2040.

Projected sectoral growth rates:

Residential: -0.4%
Commercial: 0.8%
Industrial: 1.8%
Power Gen: -0.2%
Transportation (CNG & LNG): 13.5%



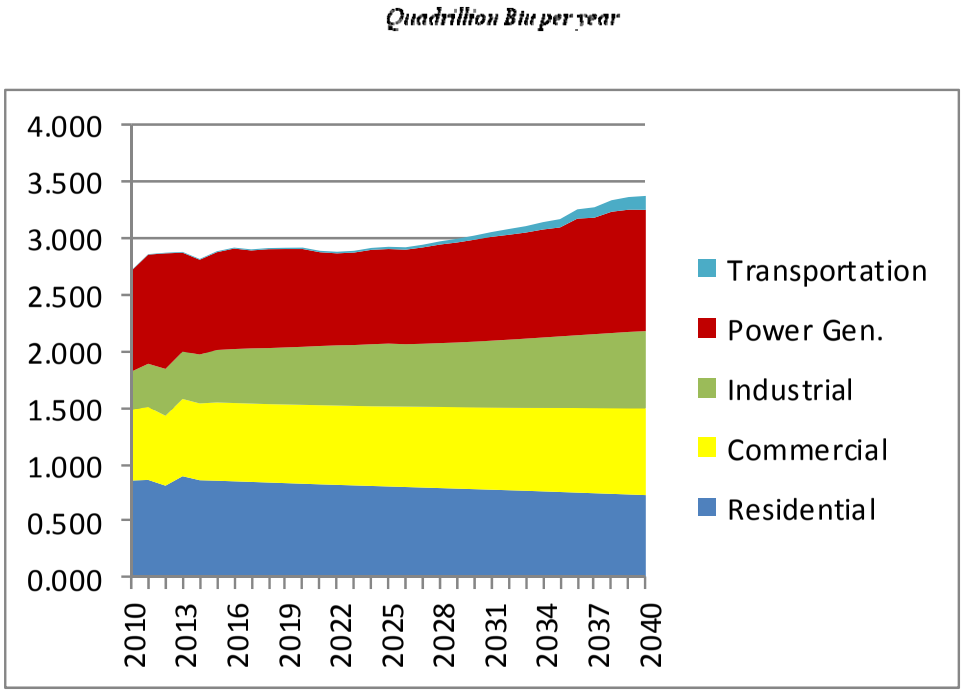
Source: U.S. Energy Information Administration, "2013 Annual Energy Outlook"

PROJECTED NATURAL GAS MARKET GROWTH, MID-ATLANTIC

U.S. EIA projects natural gas to grow at an annual rate of 0.6% in the Mid-Atlantic region (NJ, NJ, PA) through 2040.

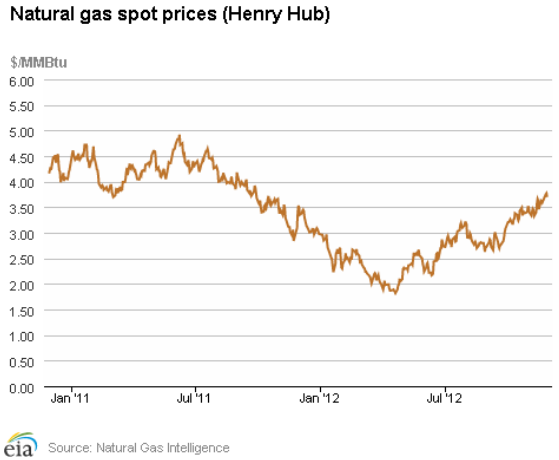
Projected sectoral growth rates:

Residential: -0.6%
Commercial: 0.6%
Industrial: 2%
Power Gen: 0.4%
Transportation (CNG & LNG): ***11***.8%



Source: U.S. Energy Information Administration, "2013 Annual Energy Outlook"

NATURAL GAS PRICE TRENDS



Source: U.S. Energy Information Administration (EIA), November 2012.

U.S. natural gas prices in 2011-12 have continued on a relatively steady and downward path. Over the last two years the Henry Hub spot price has been in the $3 per MMBtu range. Natural gas spot prices in 2011 were at their lowest level in a decade. The graph above from the U.S. Energy Information Administration (EIA) illustrates well the recent bandwidth of the U.S. natural gas spot price. As FERC staff noted in November 2012: "Current natural gas prices and winter forwards are the lowest we have seen in ten years. The U.S. natural gas market is well supplied, with production at almost forty-year highs and inventories approaching last year's record."

While there can still be volatility reflecting transportation constraints and weather impacts, these are seen as short-term. The New England region remains among the most price-sensitive markets in the country, reflecting its pipeline constraints.

The outlook for natural gas prices in the U.S. is for continued low to moderate prices. EIA in November 2012 projected that the average U.S. Henry Hub natural gas spot price in 2013 would be $3.50/MMBtu.

RESIDENTIAL HEATING FUELS

STATE	2011%	1990 %	1980 %
Connecticut	**Gas, 32** Oil, 48 Elec., 15	**Gas, 26.3** Oil, 54.4 Elec., 15.1	**Gas, 21.6** Oil, 63.8 Elec., 10.7
Maine	**Gas, 4** Oil, 72 Elec., 5	**Gas, 1.8** Oil, 69.5 Elec., 11.7	**Gas, 1.5** Oil, 71.3 Elec., 10.6
Massachusetts	**Gas, 48** Oil, 34 Elec., 13	**Gas, 38** Oil, 44 Elec., 13.5	**Gas, 32.8** Oil, 54 Elec., 9.6
New Hampshire	**Gas, 20** Oil, 51 Elec., 8	**Gas, 15.2** Oil, 55.8 Elec., 12.4	**Gas, 11.8** Oil, 59.8 Elec., 13.4
New Jersey	**Gas, 73** Oil, 13 Elec., 11	**Gas, 57.5** Oil, 29.2 Elec., 10	**Gas, 44.2** Oil, 46 Elec., 7.9
New York	**Gas, 54** Oil, 30 Elec., 9	**Gas, 45.7** Oil, 39.6 Elec., 8.5	**Gas, 39.3** Oil, 51.9 Elec., 5.1
Rhode Island	**Gas, 49** Oil, 38 Elec., 8	**Gas, 40.7** Oil, 47 Elec., 7.9	**Gas, 32.3** Oil, 57.2 Elec., 6.9
Vermont	**Gas, 15** Oil, 50 Elec., 4	**Gas, 8** Oil, 54.3 Elec., 9.1	**Gas, 6** Oil, 61 Elec., 10.1

Source: U.S. Census Bureau, "Profile of Selected Housing Characteristics." Data is 2011 estimates.

Natural gas continues to make inroads in the residential heating market in the region. This table illustrates the leading house heating fuels, by percentage, for the years 1980, 1990 and 2011. For the 8 state region, natural gas in 2011 represented 51% of home heating, compared to 32% for heating oil.

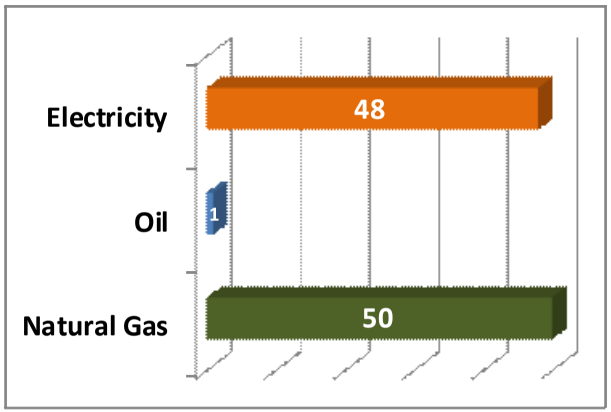
According to the most recent data, natural gas represented 54% of the home heating market in New York state, and nearly three-fourths of the home heating market in New Jersey.

In New England, gas's share is 35.7% . Heating oil is still the leading fuel in that sub-regional heating market, at 43.7%. Electricity is 11.6%.

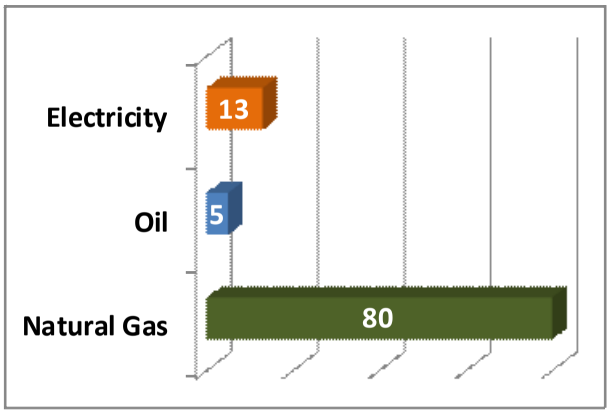
Other fuels, not shown here, are wood and propane, of particular note in northern New England.

NEW HOME HEATING FUEL CHOICE - 2010

U.S. (%)



NORTHEAST (%)



In both the U.S. and the Northeast, natural gas is the leading fuel of choice for heating in new home construction. Oil is the 2nd most popular heating fuel in the Northeast, compared to electricity in the nation as a whole.

(The data presented here represents total home construction in 2010.)

Source: U.S. Bureau of the Census, American Gas Association

CONVERSIONS TO NATURAL GAS

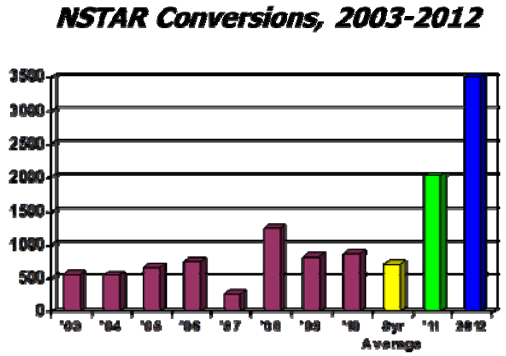


Chart: NSTAR

In recent years, the region's natural gas utilities report record numbers of service requests for new customers and for conversions from other heating fuels. The charts on this page illustrate the recent growth for 2 utilities—NSTAR in MA and Con Edison in New York City. The numbers are high in all the states of the region.

The near-term opportunities for distribution companies are to add "non-heat" customers and others along the existing main, in a cost-effective manner. The challenge is to extend the mains to areas not currently served by distribution lines, in an economical manner for the utility and prospective customer. The time is certainly right, with lower commodity prices and a price advantage over competing fuels. AGA estimates that U.S. natural gas customers saved almost $250 billion from 2008 to 2010 due to lower commodity prices.

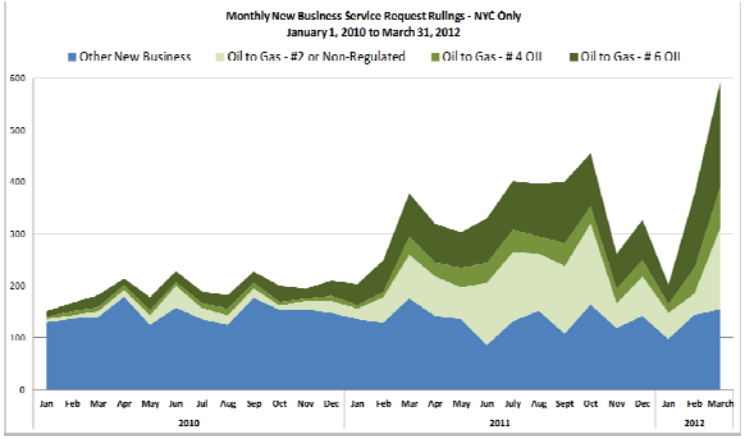
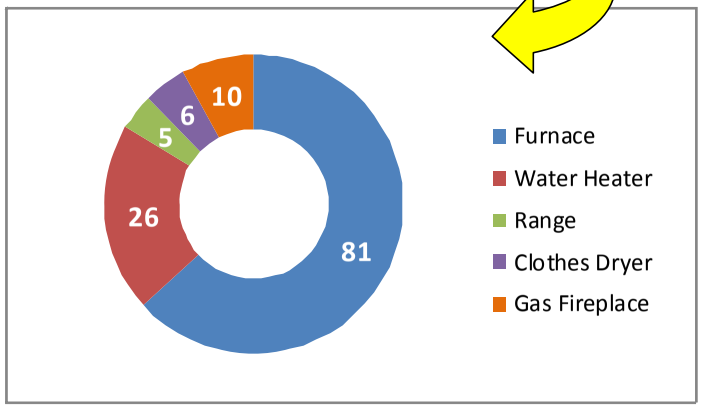


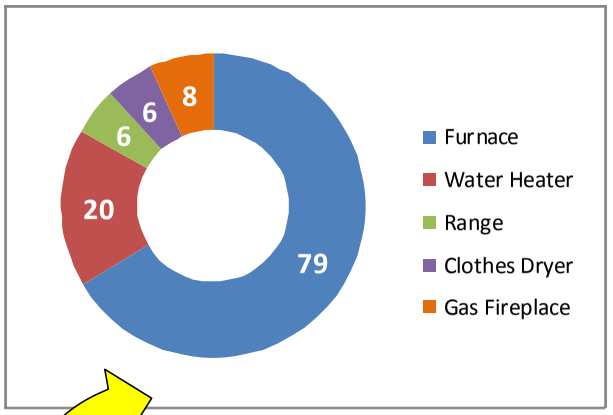
Chart: Consolidated Edison Co. of NY, 4-12

ANNUAL GAS CONSUMPTION BY APPLIANCE
RESIDENTIAL MARKET

New England Gas Consumption per Major End-Uses, Mcf per household, annual, 2010

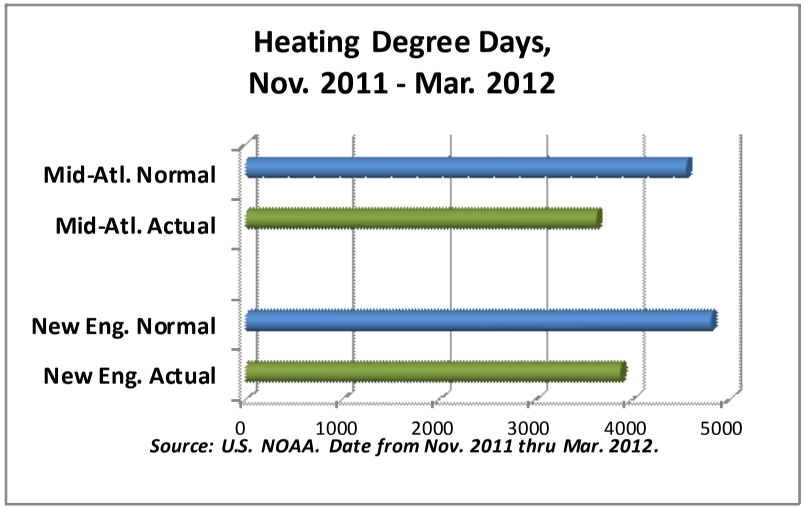
Source: American Gas Association.
Numbers rounded off.





Mid-Atlantic Gas Consumption per Major End-Uses, Mcf per household, annual, 2010

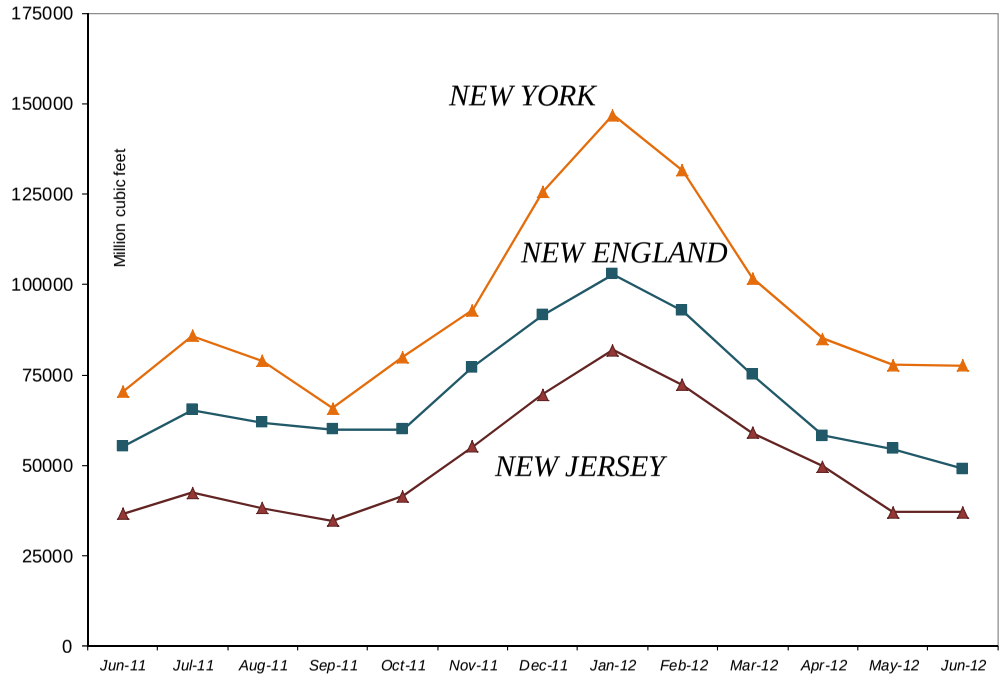
NORTHEAST HEATING SEASON
DEGREE DAYS
Winter of 2011/2012



Heating degree days measure the coldness of the weather experienced. This graph illustrates New England and Middle Atlantic regional heating degree days for the period from Nov. 2011 through March 2012. Both the New England and Mid-Atlantic regions experienced warmer-than-normal temperatures in this period.

Sources: U.S. NOAA, American Gas Association

NEW ENGLAND / NEW JERSEY / NEW YORK
MONTHLY LOAD CURVE

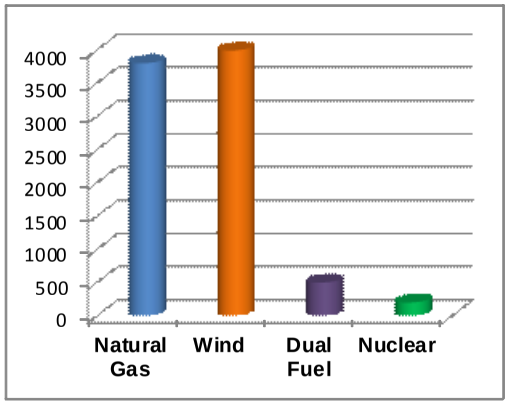


Source: U.S. Energy Information Administration, "Natural Gas Monthly"

This graph displays the monthly variations in gas consumption in New England, New Jersey and New York, for the illustrative period of June 2011 through June 2012. As can be seen, all three regions are winter-peaking systems, recording their highest sendouts in this annual cycle in January (even as the recent winter was much warmer than normal).

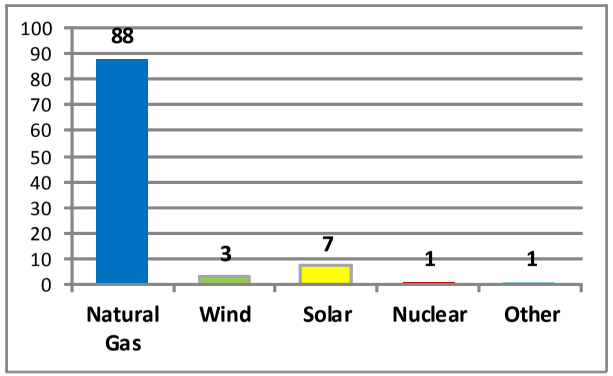
PROJECTED NATURAL GAS ADDITIONS IN REGIONAL ELECTRIC GENERATION SECTOR

PROPOSED GENERATOR ADDITIONS, NEW YORK, Megawatts (Source: NY ISO Generator Queue, as of 4-12)

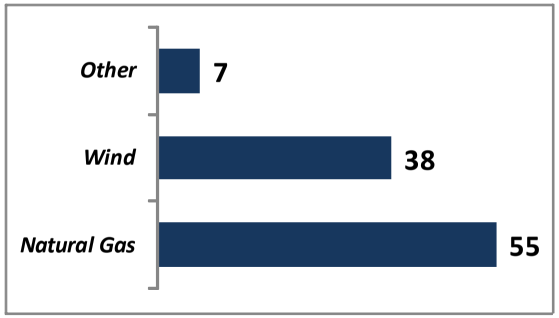


Natural gas has been an increasingly significant fuel in the Northeast electric power system. The region's electric grid operators, as shown in these graphics, report that natural gas remains among the leading choices for proposed new power plants. Renewable energy and efficiency (not portrayed) are the other leading future power sources at this time.

PROPOSED GENERATOR ADDITIONS, NEW JERSEY, Percentage (Source: PJM RTEP Generator Queue, as of 1-12)



PROPOSED GENERATOR ADDITIONS, NEW ENGLAND, Percentage of nameplate capacity (Source: ISO-NE Generator Queue, as of 7-12)



V.

TECHNOLOGY & ENVIRONMENTAL ISSUES

New technologies and environmental issues have been key drivers in shaping the regional gas market in recent years.

Among the areas addressed are:

- *Natural gas vehicles*
- *Power generation technologies*
- *Efficiency investments*
- *RD&D advances.*

NATURAL GAS VEHICLES

Natural gas fueled vehicles (also known as NGVs) have shown steady growth in recent years nationally and regionally. CNG vehicles represent 13% of all alternatively-fueled vehicles on the road in the U.S. LNG, especially for trucks and other heavy-duty vehicles, is another alternative fueling option of growing interest.

These vehicles provide environmental benefits, reliability, cost-effectiveness, and are sourced from domestic supplies. The cost differential from both gasoline and diesel has been significant in recent years—as much as 50% lower.

The U.S. Department of Energy's alternative fuel vehicle website notes that natural gas burns cleaner than conventional gasoline or diesel due to its lower carbon content.

In February 2012, ACEEE rated a CNG vehicle the 2nd "greenest vehicle" on the road in the U.S. (the vehicle, the Honda Civic, had been the top-rated green vehicle for the previous 8 years).

In October 2009, the National Research Council, affiliated with the National Academy of Science, released a report which noted that, for the transportation sector, "compressed natural gas had lower damages than other options, as the technology's operation and fuel produce very few emissions."

According to the U.S. Department of Energy's Alternative Fuels Data Center, as of fall 2012, New York State has 113 compressed natural gas (CNG) fueling stations, New Jersey has 27, and New England has 47. Not all are publicly available however, and efforts are underway to increase the number of stations.

The first LNG vehicle fueling station on the U.S. east coast was opened in late 2010 in Bridgeport, CT. In summer 2012, another LNG station was added at the Distrigas facility in Everett, MA (see photo to right), and private LNG dispensers have been added for truck travel in several New England states.

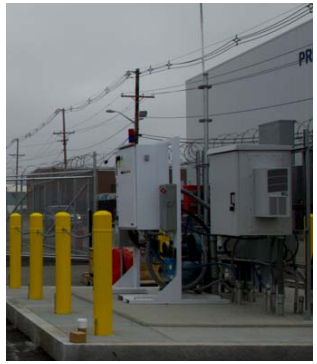


Photo: Distrigas

CNG AND LNG FOR VEHICLES AND MOBILE SERVICE

The rise in North American natural gas production and the drop in commodity prices is leading to a renewed focus on natural gas as a transportation fuel. As well, areas not served by pipeline infrastructure are looking at ways to gain access to the fuel—via mobile delivery systems.

TRANSPORT FUEL

Compressed Natural Gas (CNG)

U.S. DOE:"CNG is typically stored in a tank at a pressure of 3,000 to 3,600 pounds per square inch. The engine functions the same way as a gasoline engine: the fuel-air mixture is compressed and ignited by a spark plug and the expanding gases produce rotational forces that propel the vehicle."
Markets: refuse trucks, shuttle buses, package delivery trucks, passenger vehicles.

CNG truck owned by Frito-Lay

Liquefied Natural Gas (LNG)

U.S. DOE:"LNG is super-cooled and stored in its liquid phase at minus 260F in special insulated tanks." Markets: heavy-duty trucks, often with long routes, taking advantage of the greater energy density of LNG.

Photo: LNG/CNG truck owned by Gulf Oil

MOBILE SOURCE

A growing market for CNG and LNG is the "portable natural gas" technology.
CNG or LNG can be delivered via truck to serve commercial or industrial sites.
The gas is transported via a trailer that also can serve to offload the gas into the facility.
This application is proving especially popular in areas of northern New England and the Maritimes of Canada where natural gas pipeline infrastructure has yet to reach.

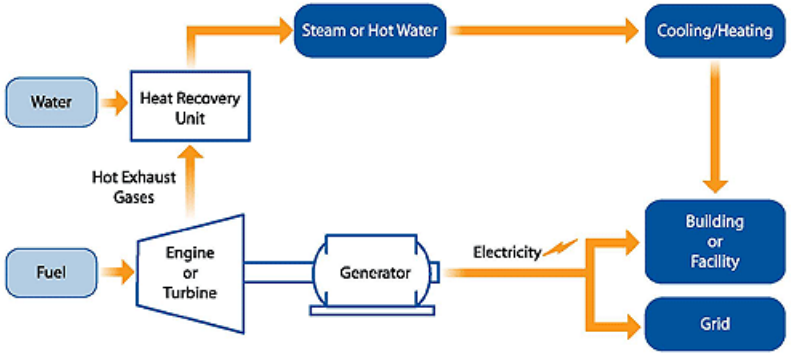
Photo of trailer : Irving Oil

NEW TECHNOLOGY OPTIONS: CHP & FUEL CELLS

Natural gas is a key fuel input for energy systems that represent new technologies with opportunities for reduced air emissions, higher system efficiency, and greater reliability.

Combined heat and power (CHP)**, also known as cogeneration, is the simultaneous production of electricity and heat from a single fuel source – such as natural gas.* ***Natural gas fuels 72% of existing CHP capacity in the U.S. *Total generating capacity in the U.S. from CHP in 2010 was 82 gigawatts, representing 12% of total MWh generated annually. The U.S. EPA notes that "gas turbines produce a high quality (high temperature) thermal output suitable for most combined heat and power applications...There is a significant amount of gas turbine based CHP capacity operating in the United States located at industrial and institutional facilities. Much of this capacity is concentrated in large combined-cycle CHP systems that maximize power production for sale to the grid. However, a significant number of simple-cycle gas turbine based CHP systems are in operation at a variety of applications including oil recovery, chemicals, paper production, food processing, and universities." CHP is environmentally beneficial. EPA reports that, "because of their relatively high efficiency and reliance on natural gas as the primary fuel, gas turbines emit substantially less carbon dioxide (CO2) per kilowatt-hour (kWh) generated than any other fossil technology in general commercial use."*

Gas Turbine or Engine with Heat Recovery Unit *Source: U.S. EPA*



***Fuel Cells** use "hydrogen as the fuel in an electrochemical process, similar to what occurs in a battery, that generates electricity" (EPA). The primary fuel source for the fuel cell is hydrogen, which can be obtained from natural gas and other fuels containing hydrocarbons. Fuel cells provide great advancements in efficiency and lower emissions. The National Academy of Science noted in an Oct. 2009 report that, looking ahead, "natural gas-powered fuel cells could become mainstream and generate significant amounts of electricity."*

NYSEARCH

NGA's NYSEARCH is recognized as one of the leading gas industry research and development organizations in the U.S., with pioneering programs that have received national and international recognition. NYSEARCH has recorded significant RD&D achievements - monitoring technology developments, identifying common needs, performing market research, evaluating potential technical solutions, and conducting product development. Recent success stories include the development, testing and commercialization of the Remote Methane Leak Detector (RMLD), and the EXPLORER II robotics program.

For further information, visit the NYSEARCH web site at www.nysearch.org.

Photo: NYSEARCH

GTI TECHNOLOGY OUTREACH

NGA over the last 15 years has maintained a solid working partnership with GTI - the Gas Technology Institute. GTI's objectives are to "expand the supply of affordable natural gas and renewable energy; ensure a safe and reliable energy infrastructure; promote the clean and efficient use of energy resources; and reduce carbon emissions to the environment." Its web site is: www.gastechnology.org/

Some of GTI's scope areas are outlined below.

FOSSIL FUEL AIR EMISSIONS COMPARISONS

Natural gas technologies for electric generation provide substantial clean air benefits over other fuel systems. The combustion turbine and combined-cycle technologies remain probably the most highly-favored generating technology in the nation and region; while the fuel cell technology holds great promise for future development. In August 2012, the U.S. EIA reported that annual U.S. energy-related carbon emissions fell by 2.4% in 2011, and that they declined to a 20-year low in the first quarter of 2012. A key factor in this improving environmental performance is the rising use of natural gas and the fall in coal's share of total generation.

Comparison of Air Pollution from Fossil Fuels

(average emission rates measured in pounds for air pollutants produced per megawatt hour of electricity generated, U.S.)

	SO^2	NOx	CO_2
Natural Gas	0.1	1.7	1,135
Oil	12	4	1,672
Coal	13	6	2,249

Source: U.S. EPA

Comparing Oil and Natural Gas Emissions

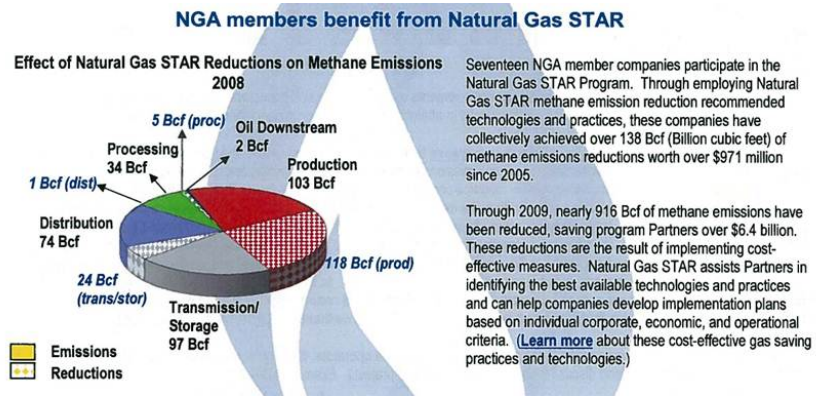
Pounds per MMBtu

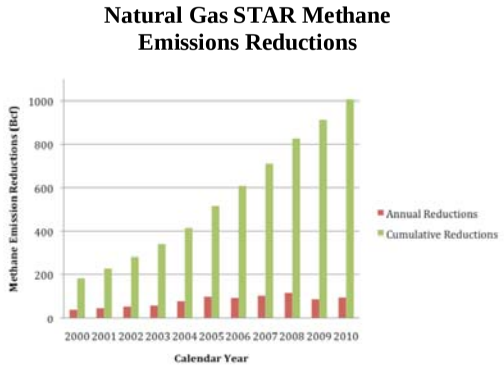
		Oil	Natural Gas
SO_x	✓ Higher with Oil	0.203	0.001
NO_x	✓ Higher with Oil	0.129	0.092
CO	✓ Higher with Gas	0.036	0.039
Particulates	✓ Higher with Oil	.003	.002
TOC's	✓ Higher with Oil	0.18	0.11
Organics	✓ Higher with Oil	**Multiple Sources**	**Multiple Sources**
Metals	✓ Higher with Oil	**Multiple Sources**	**Multiple Sources**

Source: GTI, "Oil and Gas Options in the Northeast: Creating the Scientific Basis for Comparing Fuel Differences," July 2003

ADDRESSING GREENHOUSE GAS EMISSIONS

Natural gas is a contributor to greenhouse gas emissions, but is the cleanest of all fossil fuels, and as a result, natural gas is noted as part of the solution to the climate change challenge. At the same time, utility companies are implementing efficiency programs to reduce usage and emissions. Furthermore, natural gas companies are striving to reduce their emissions of methane, which is a greenhouse gas. Companies at all levels of the natural gas production and transmission chain are working to reduce pipeline leaks, fugitive emissions, and impacts from venting. One highly successful program has been the "Natural Gas STAR" program of the U.S. EPA. Now in its 18th year, the program invites voluntary participation from industry segments to reduce methane emissions. Over 1,000 billion cubic feet (Bcf) of methane emissions have been reduced by participating companies. NGA and a number of LDCs also participate in this program. EPA reports that "the 2010 reductions represent a significant achievement. In financial terms, the 101 Bcf of total reductions for 2010 represents about $505 million at $5 per thousand cubic foot…[T]he reductions achieved during the 2010 calendar year avoided emissions of 11.31 million tonnes carbon equivalent."





Source: U.S. EPA

ACCELERATING REPLACEMENT OF MORE "LEAK-PRONE" PIPE MATERIALS

Miles of Distribution Main Considered "Replacement Candidates" by Type, and Percentage of Total Main Considered "Leak-Prone"

STATE	BARE STEEL	COATED UNPROTEC-TED STEEL	IRON	PERCENT OF TOTAL
Connecticut	195	55	1,521	**23.1%**
Maine	2	15	59	**9.8%**
Massachusetts	1,902	1,161	3,903	**32.9%**
New Hampshire	38	23	140	**10.7%**
New Jersey	1,821	787	5,168	**23.2%**
New York	7,246	1,425	4,541	**27.7%**
Rhode Island	392	188	891	**46.8%**
Vermont	-	-	-	**0.0%**

Source: American Gas Foundation report, 7-12, based on 2011 PHMSA data

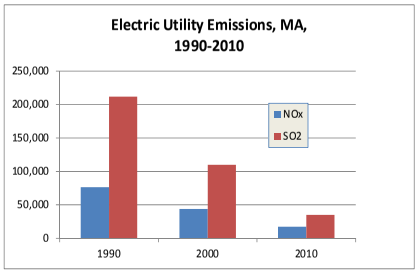
Accelerated repair and replacement of more "leak-prone" natural gas distribution system components is an issue of growing interest. The Pipeline and Hazardous Materials Safety Administration (PHMSA) of the U.S. Department of Transportation is urging action on repairing older, more leak-prone systems. In summer 2012, the American Gas Foundation (AGF) released a report entitled: "Gas Distribution Infrastructure: Pipeline Replacement and Upgrades." The report notes that "approximately 9% of distribution service mains in the United States are constructed of materials that are considered leak-prone." The comparable percentages for the Northeast states of leak-prone distribution pipe components are generally higher, reflecting older systems than the national average. The table displays miles of "leak-prone" materials by state, and the percentage of "leak-prone" pipe compared to total state system.

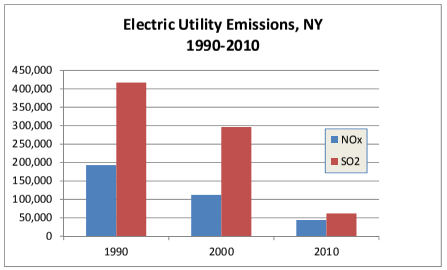
REDUCING EMISSIONS IN THE POWER SECTOR

A key part of any strategy to reduce U.S. air emissions is to increase the role of low-and zero-carbon sources in the transportation and power sectors.

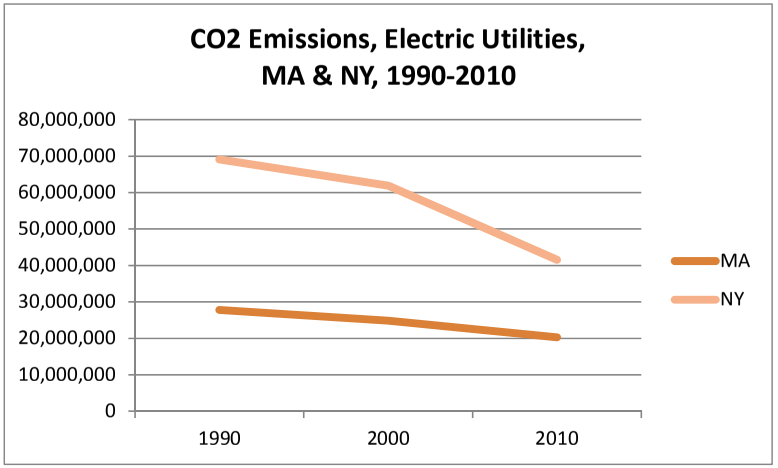
The electric utility sector in the Northeast has achieved major reductions in several air emission areas over the last 20 years—in part thanks to new, more efficient power sources, from natural gas to renewables. The charts to the right show changes in utility emissions for SO2, NOX and CO2, for MA and NY, for the years 1990, 2000 and 2010.

In February 2012, researchers at the Harvard School of Engineering and Applied Sciences (SEAS) reported that the primary explanation for the reduction in CO_2 emissions from power generation in the U.S. in 2009 was that a decrease in the price of natural gas reduced the industry's reliance on coal. While the economic recession contributed partly to the drop in U.S. carbon emissions that year, by over 8% in the power sector, the main cause was replacement of coal by cleaner -burning natural gas.

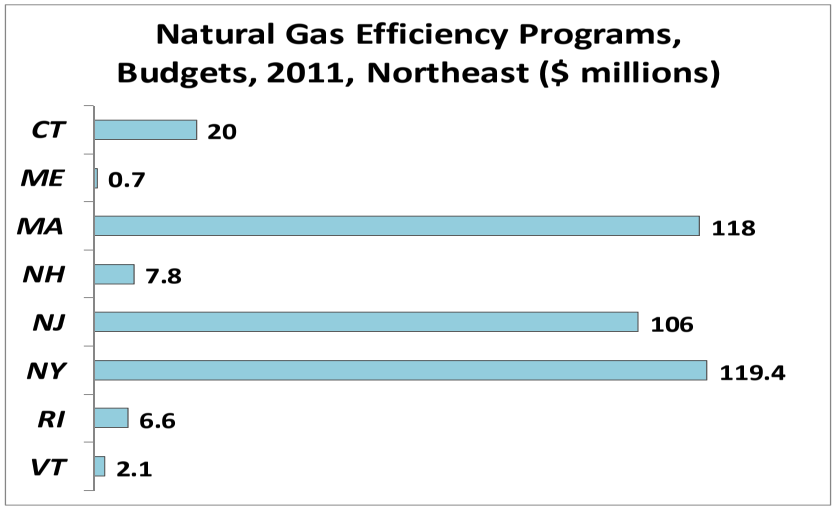




Source: U.S. EIA, "Electric Power Annual 2010," released 11-11



NATURAL GAS EFFICIENCY



Source: ACEEE, "2011 State Energy Efficiency Scorecard", released October 2012

Natural gas efficiency programs are a central part of the evolving national and regional natural gas supply/ demand portfolio. Efficiency remains a resource of immense opportunity. The Northeast states already are national leaders in their per capita energy efficiency, and the utilities in the region, electric and gas, have been active for years in efficiency programs.

The 2012 annual ACEEE Scorecard for Energy Efficiency, which looks at both electric and natural gas programs, found that five Northeast states were in the top 10 in the U.S.: MA, NY, RI, VT and CT.

In 2011, $1.1 billion was invested in natural gas efficiency programs nationwide, according to the ACEEE. Of that, $380 million – or one-third of the national total - was invested in the 8 Northeast states. These investments will grow even further in coming years.

VI. NGA's MEMBER LOCAL DISTRIBUTION COMPANIES

(*as of November 2012)*

Bangor Gas Company
21 Main Street
Bangor, Maine 04402
(207) 941-9595
www.bangorgas.com

Bath Electric, Gas & Water System
7-11 South Avenue
Bath, NY 14810
(607) 776-3072

The Berkshire Gas Company
115 Cheshire Road, P.O. Box 138
Pittsfield, Massachusetts 01202
(413) 442-1511
www.berkshiregas.com

Blackstone Gas Company
61 Main Street, P.O. Box 162
Blackstone, Massachusetts 01504
(508) 883-9516
www.blackstonegas.com

Central Hudson Gas & Electric Corp.
284 South Avenue
Poughkeepsie, NY 12601
(845) 452-2000
www.cenhud.com

Columbia Gas of Massachusetts
4 Technology Drive, Suite 250
Westborough, Massachusetts 01581
(508) 836-7000
www.columbiagasma.com

Connecticut Natural Gas Corp.
77 Hartland Street, 4th floor
East Hartford, Connecticut 06108
(860) 727-3000
www.cngcorp.com

Consolidated Edison Co. of NY, Inc.
4 Irving Place
New York, NY 10003
(212) 460-4600
www.coned.com

Corning Natural Gas Corp.
330 West William Street
Corning, NY 14830
(607) 936-3755
www.corninggas.com

Holyoke Gas & Electric Dept.
99 Suffolk Street
Holyoke, Massachusetts 01040
(413) 536-9300
www.hged.com

Liberty Utilities
11 Northeastern Boulevard
Salem, NH 03079
(603) 328-2700
www.libertyutilities.com

NGA's LDC MEMBERS *(as of 11-12)*

Maine Natural Gas
PO Box 99
Brunswick, Maine 04011
(207) 729-0420
www.mainenaturalgas.com

Middleborough Gas & Electric Dept.
32 South Main Street
Middleborough, Massachusetts 02346
(508) 947-1371
www.mgandeonline.com

National Fuel Gas Distribution Co.
6363 Main Street
Williamsville, NY 14221
(716) 857-7000
www.natfuel.com

National Grid
One MetroTech Center
Brooklyn, NY 11201
(718) 403-2000
www.nationalgrid.com

40 Sylvan Road
Waltham, Massachusetts 02451
(781) 466-5000
www.nationalgrid.com

New England Gas Company
10 North Main Street
Fall River, MA 02722
(508) 324-7811
www.negasco.com

New Hampshire Gas Company
32 Central Square
Keene, NH 03431
(603) 352-1230

New Jersey Natural Gas Co.
1415 Wyckoff Road
Wall, NJ 07719
(732) 938-7977
www.njng.com

New York State Electric & Gas
4500 Vestal Parkway East
Binghamton, NY 13902
(607) 762-7200
www.nyseg.com

Norwich Public Utilities
173 North Main Street
Norwich, Connecticut 06360
(860) 887-2555
www.norwichpublicutilities.com

NSTAR Gas (part of NU)
One NSTAR Way
Westwood, Massachusetts 02090
(800) 592-2000
www.nstar.com

NGA's LDC MEMBERS *(as of 11-12)*

Orange & Rockland Utilities, Inc.
One Blue Hill Plaza
Pearl River, NY 10965
(914) 352-6000
www.oru.com

Public Service Electric & Gas Co.
80 Park Plaza
Newark, NJ 07101
(973) 430-7000
www.pseg.com

Rochester Gas & Electric Corp.
89 East Avenue
Rochester, NY 14649
(585) 546-2700
www.rge.com

The Southern Connecticut Gas Co.
855 Main Street, P.O. Box 1540
Bridgeport, Connecticut 06604
(203) 382-8111
www.soconngas.com

South Jersey Gas
One South Jersey Plaza
Folsom, New Jersey 08037
(609) 561-9000
www.southjerseygas.com

St. Lawrence Gas Company
33 Stearns Street
Massena, NY 13662
(315) 769-3516
www.stlawrencegas.com

Unitil
6 Liberty Lane West
Hampton, NH 03842
(888) 886-4845
www.unitil.com

Vermont Gas Systems, Inc.
P.O. Box 467
S. Burlington, Vermont 05402
(802) 863-4511
www.vermontgas.com

Wakefield Municipal Gas & Light Department
9 Albion Street, P.O. Box 190
Wakefield, Massachusetts 01880
(781) 246-6363
www.wmgld.com

Westfield Gas & Elect. Light Dept.
100 Elm Street
Westfield, Massachusetts 01085
(413) 572-0100
www.wgeld.org

Yankee Gas Services Company
(part of NU)
107 Selden Street
Berlin, Connecticut 06037
(800) 286-5000
www.yankeegas.com

TRANSMISSION COMPANIES AND LNG MEMBERS *(as of 11-12)*

Algonquin Gas Transmission Company
890 Winter Street, Suite 300
Waltham, Massachusetts 02451
(617) 254-4050
www.spectraenergy.com

Distrigas of Massachusetts Corp.
(part of GDF SUEZ)
20 City Square, 3rd Floor
Charlestown, Massachusetts 02129
(617) 886-8300
www.domac.com

Granite State Gas Transmission, Inc.
1075 Forest Avenue
Portland, Maine 04104
(207) 797-8002
www.unitil.com

Iroquois Gas Transmission System
One Corporate Drive, Suite 600
Shelton, Connecticut 06484
(203) 925-7200
www.iroquois.com

Maritimes & Northeast Pipeline
890 Winter Street, Suite 300
Waltham, Massachusetts 02451
(617) 254-4050
www.mnp-usa.com

Millennium Pipeline
One Blue Hill Plaza, 7th floor
Pearl River, NY 10965
(800).572-7515
www.millenniumpipeline.com

North Country Gas Pipeline Corp.
99 Weed Street, PO Box 2985
Plattsburgh, New York 12901
(518) 563-1072

Portland Natural Gas Transmission System (PNGTS)
One Harbour Place, Suite 375
Portsmouth, NH 03801
(603) 559-5500
www.pngts.com

Repsol Energy North America
2001 Timberloch Place, Suite 3000
The Woodlands, Texas 77380
(281) 297-1128
www.repsolenergy.com

Talisman Energy USA
337 Daniel Zenker Drive
Horseheads, NY 14845
(607) 562-4000
www.talisman-energy.com

Tennessee Gas Pipeline Company
1001 Louisiana
Houston, TX 77002
(713) 420-2600
www.kindermorgan.com

TransCanada PipeLines Ltd.
450 1st Street S.W.
Calgary, AB T2P 5H1
(877) 920-7473
www.transcanada.com

VII. ABOUT NGA

The Northeast Gas Association (NGA) is a regional trade association that focuses on education and training, operations, planning, technology research and development, and increasing public awareness of natural gas in the Northeast U.S.

NGA represents natural gas distribution companies, transmission companies, liquefied natural gas importers, and manufacturers and suppliers to the industry. These member companies provide natural gas to approximately 10 million customers in eight states (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont).

Mission Statement

The Northeast Gas Association's mission is to promote and enhance the safe, reliable, efficient, and environmentally responsible delivery of natural gas to customers in the region, and to advocate for the industry from production to delivery.

Its web site is www.northeastgas.org/

For further information, contact NGA at:

Northeast Gas Association
75 Second Avenue, Suite 510
Needham, Massachusetts 02494-2859
Tel. 781-455-6800
Fax 781-455-6828

Its NYSEARCH office is located at:

20 Waterview Boulevard, 4th floor
Parsippany, NJ 07054
Tel. 973-265-1900
www.nysearch.org

DATA SOURCES

The data sources used in the Guide are referenced on each page. NGA is grateful to the many agencies and individuals from a variety of sectors who provided information and guidance in the preparation of this report.

Documents of particular interest include the following:

American Gas Association (www.aga.org)
- "Gas Facts 2010"

New York State Energy Research and Development Authority (NYSERDA) (www.nyserda.org)
- "Patterns and Trends - New York State Energy Profiles: 1991-2010"

U.S. Department of Energy, Office of Fossil Energy, Office of Natural Gas & Petroleum Import and Export Activities
- "Natural Gas Imports and Exports"

U.S. Energy Information Administration (www.eia.gov)
- "Annual Energy Outlook 2013"
- "Natural Gas Annual 2011"
- "Natural Gas Monthly"
- "State Energy Data Report 2010"

National Energy Board of Canada
- "Statistics: Natural Gas Exports and Imports"

NGA will continue during the year to provide up-to-date summaries of regional gas industry developments, and will make that information available on its web site at:
www.northeastgas.org.

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Parsippany, New Jersey
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tel. 973-265-1900

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