AGA American Gas Association

Natural Gas: Rewriting our Energy Future

America's natural gas utilities operate and maintain the 21st century infrastructure necessary to serve the nation's energy needs today and into the future.

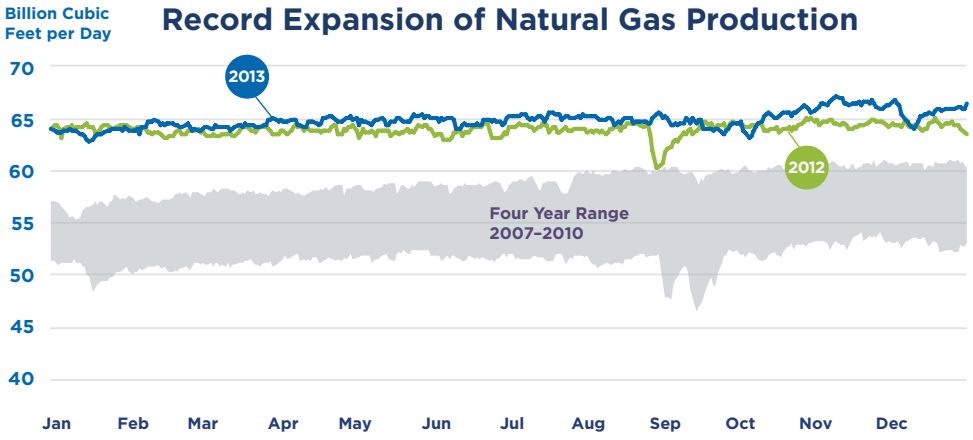
Natural gas has emerged as the foundation fuel for a clean and secure energy future in the United States. Supply resources today are enormous, bolstering confidence that natural gas can meet and sustain a significant share of future domestic energy needs. Domestic natural gas provides an incredible opportunity to drive economic growth, while protecting the environment and boosting national energy security. This energy vision is built upon the foundation of 2.4 million miles of natural gas pipelines, unmatched underground storage capability, and the safety and reliability of natural gas delivery systems. An extensive delivery infrastructure helps to ensure that North America's robust natural gas resources are positioned to satisfy significant new natural gas demand at affordable and competitive prices well into the future. Bolstered today by stable market conditions, communities are seeking greater access to natural gas for use in homes, businesses and vehicles, and this clean energy source is driving a renaissance in manufacturing.

Natural gas has undergone a transformational shift — from an energy source sometimes viewed as scarce and subject to significant price swings to one that is now recognized as a foundation fuel for a clean and secure energy future.

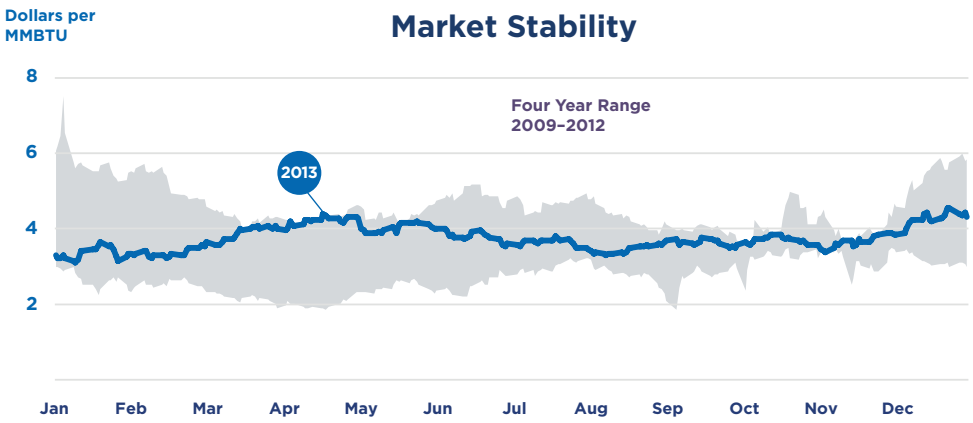
A New Era

Natural gas in America today is a great story. Advances in American drilling and other related exploration technologies have opened the door to efficient and responsible extraction of North American natural gas for delivery to customers of all types. Due to these critical resource development techniques, more than 50 percent of gas delivered today comes from resources described as unconventional. As a result, average natural gas production today is 30 percent higher than six years ago.

Affordable corresponding natural gas prices and resilient supply continue to support an extraordinary range of current applications for this foundation fuel and will support future consumption as well. This trend can and should continue if the full economic, environmental and national security value of natural gas is to be realized.



Natural Gas Daily Production. *Source: Bentek Energy*



Natural Gas Spot Price at Henry Hub. *Source: EIA*

The natural gas market today is characterized by a strong supply position and relative market stability. Significant potential exists for expanding its use in homes, businesses, power generation, industrial plants and vehicles, as well as the export of liquefied natural gas.

Prevailing natural gas supply fundamentals along with a reliable natural gas delivery infrastructure suggest that a range of demand scenarios can be met within an estimated price band of $4.00 to $6.50 per MMBtu, a level well below the peak market prices of the preceding decade.

Safe, Reliable and Clean

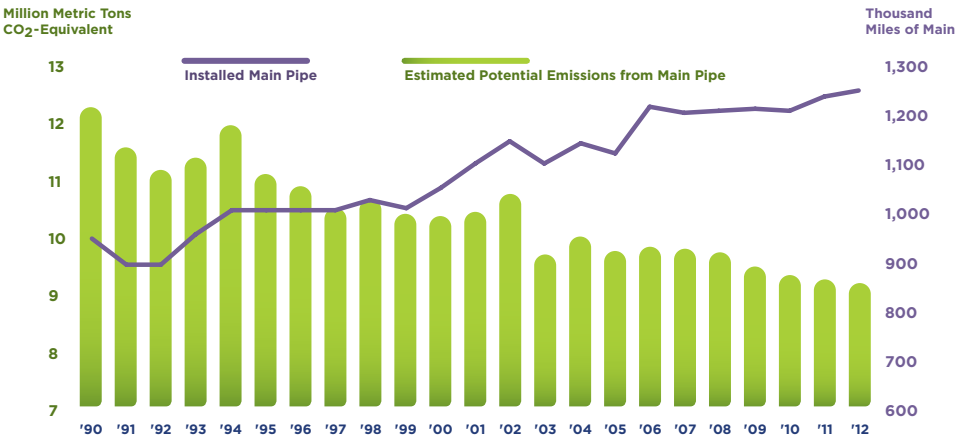
According to the U.S. Department of Transportation, our domestic abundance of clean natural gas is delivered via the safest energy delivery system in the nation. Even with the historically excellent performance of the nation's natural gas delivery system, natural gas utilities remain vigilant and committed to continually upgrading this crucial infrastructure. Our modernization efforts will continue to build upon the industry's exceptional track record of safety and reliability.

In the past decade, natural gas utilities have installed modern plastic pipes at a rate of 30,000 miles per year and installed cathodically protected steel mains at 1,500 miles per year both connecting new customers and upgrading existing pipeline infrastructure. Pipes that may no longer be fit for service are being replaced with ones made from more modern materials, which increases safety and reduces emissions. Thanks to these efforts, there are over 2 million miles of plastic and steel main and service pipeline in the natural gas system today.

Nearly 40 states have a program to facilitate accelerated replacement and modernization of natural gas distribution pipelines no longer fit for service. Decisions to replace pipe are based on enhanced risk-based integrity management programs.

America's natural gas utilities work with their state regulators, legislators and other key stakeholders to advance these important safety policies that both enhance system integrity and reliability and support increased access to natural gas service for homes and businesses. The incredible progress in this area is due primarily to a common set of goals and values shared by utilities, regulators and legislators. Each is committed to increasing both pipeline safety and affordable access to our nation's abundance of clean natural gas.

Emissions Have Declined Even as Pipelines Have Expanded



Replacing pipeline with protected steel and plastic materials reduces emissions more than 95 percent.

Continued efforts to upgrade and modernize the natural gas pipeline network to enhance safety are also lowering emissions.

Expanding natural gas use provides a demonstrated path for improving the environment. As one of the cleanest energy sources, natural gas produces fewer pollutants and half the greenhouse gas emissions of other fossil fuels. This advantage is further enhanced by the efficient direct use of natural gas in home and commercial appliances and industrial processes.

Emissions from the natural gas distribution system are low and declining. Upgrades during the last 25 years have significantly reduced the total amount of natural gas emissions released during distribution operations, even as the system has grown. Modernized infrastructure and installation practices, such as the installation of pipelines made from cutting-edge materials, has resulted in a 17 percent decrease of natural gas emissions during the same time period.

Only 1.3 percent of natural gas is emitted as it travels from where it is produced to homes and businesses. More specifically, natural gas emissions from systems operated by local utilities are low. Only 0.24 percent is emitted from systems operated by local natural gas utilities.

Commitment to Efficiency

Direct use - using appliances in your home that run on natural gas - is the most efficient way to use this domestic resource, and it saves consumers money. A typical new home with natural gas saves between $500 and $1,300 annually compared with other fuel sources. New technologies and greater appliance efficiency makes natural gas the fuel of choice in homes, businesses and communities across the country. These applications are supported by a distribution system that remains one of the most efficient ways to deliver energy to consumers. Ninety-two percent of natural gas produced is delivered to consumers as usable energy.

America's natural gas utilities support their customers through cost-effective and practical approaches to increasing energy efficiency.

In 2013 alone, natural gas utilities budgeted more than $1.4 billion to natural gas efficiency programs, and that number may continue to grow.

As an environmental solution, natural gas provides low-carbon energy for the nation while supporting the deployment of renewable energy. Natural gas itself is used for a substantial portion of the nation's low-carbon electricity each year. What's more, natural gas electricity generation is widely recognized as a reliable back-up to other renewable sources of energy when the wind does not blow and the sun does not shine. Technological advancements in natural gas applications can further accelerate these benefits, such as the use of natural gas as a transportation fuel, as a hybrid energy source with renewables for heating, or as the primary fuel in distributed generation applications like combined heat and power.

Through natural gas efficiency programs, utilities helped customers save 136 trillion British Thermal Units (Btu) of energy and offset 7.1 million metric tons of carbon dioxide in 2012.

We can see greater benefits from natural gas if we:

- **Promote the expansion of the natural gas delivery infrastructure and enhance the operation of the energy network to provide more information to customers**
- **Deploy energy efficiency programs that fully leverage the efficient use of natural gas**
- **Expand the use of efficient generation technologies, such as combined heat and power in commercial and industrial applications to unlock the potential for fuel cells, microgrids and future energy innovation using natural gas**
- **Encourage public-private partnerships to expand the network of refueling options for natural gas vehicles**

Natural Gas Efficiency Program Investments in the United States