PIOGA
Pennsylvania Independent Oil & Gas Association

JUST THE FACTS

Oil & Gas Pipelines: Safe, Regulated and Vital to the Delivery of Affordable and Reliable Energy

Oil and natural gas pipelines have been utilized for more than a century and a half to transport those commodities, from the first 2,000-foot oil pipeline built in northwest Pennsylvania in 1865 soon after Col. Edwin Drake's well, to today's interconnected network of lines that span multiple states and thousands of miles. The need for new pipelines and infrastructure is essential to meet growing demand – particularly for "dry" gas from certain formations that can be used with a minimum amount of processing to produce electricity, heat homes and fuel industrial boilers. This is borne out in the fact that total demand for natural gas in the U.S. increased nearly 29 percent between 2010-2019, compared to a growth rate of only 3.2 percent between 2000-2010.

Natural gas has emerged as the cleanest, most reliable and affordable energy source in the nation, and the need for a more robust transportation infrastructure has never been more important.

Safety/Integrity

Ensuring the safety of existing and new natural gas infrastructure is the first priority of pipeline developers, including the engineering, construction, maintenance and replacement of lines, when determined necessary. Hydrostatic testing is completed at pressures above maximum operating levels before a pipeline goes into service to ensure its integrity. Non-impact testing, such as industrial radiography and ultrasonic techniques, are also used before putting a line into service to inspect welds, and cathode technology that produces electric currents along a full pipeline reduces the potential for corrosion.

Tools are used to remove liquids and any other debris from the interior of a pipeline, and inline inspection devices often called "smart pigs" are able to identify potential concerns and prevent them from impacting a pipeline's safety. Finally, advanced pressure-control systems, over-pressure devices and other tools are used to enhance safety.

Pipelines are maintained with on-the-ground and aerial inspections, along with remote sensing and monitoring equipment, to ensure their long-term safety.

State and Federal Regulation

Natural gas pipelines and infrastructure are subject to regulatory oversight by both state and federal agencies, and include every aspect of their construction and operation. At the federal level, those agencies include the Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA), which shares and coordinates regulatory roles with the Federal Energy Regulatory Commission, U.S. Environmental Protection Agency, the Department of Homeland Security and the Department of the Interior's Bureau of Safety and Environmental Enforcement. Additional federal oversight often includes the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

In Pennsylvania, the Department of Environmental Protection (DEP) has primary regulatory responsibility for pipeline permitting and monitoring, involving several bureaus within the agency. DEP coordinates its regulatory role with agencies such as the Pennsylvania Utility Commission, the state Fish and Boat Commission, the State Game Commission, the state Departments of Conservation and Natural Resources and Agriculture, and the state Historical and Museum Commission, as well as applicable river basin commissions and county conservation district offices.

Growing Demand

Natural gas has emerged as one of the most preferred sources of energy in the U.S., thanks to its reliability, affordability and abundance. More than 38 percent of our country's electricity is produced from natural gas, and that number is expected to increase in the future to fight climate change. Portions of the Appalachian Basin – including areas of Pennsylvania, Ohio and West Virginia – are sources of dry gas that can be prepared rapidly for energy production.

On the other hand, a number of states with a strong history of energy production, but without dry-gas source rock, including Arkansas, Colorado, Indiana, Kansas and Oklahoma, have seen production decrease by about 10 percent every year since 2011. The vertical natural gas wells that had previously allowed many states to be self-sufficient and meet their own demand for gas are no longer capable of doing so, making new pipeline capacity from shale regions to those states a priority.

A similar sign of supply being unable to meet demand can be found in Westchester County, New York, where Consolidated Edison announced a moratorium on new natural gas connections in 2019. The earliest date for this connection ban to be lifted is estimated to be 2023, when an agreement with a supplier goes into effect, though that agreement could face legal challenges by opponents and some New York local and state elected officials.

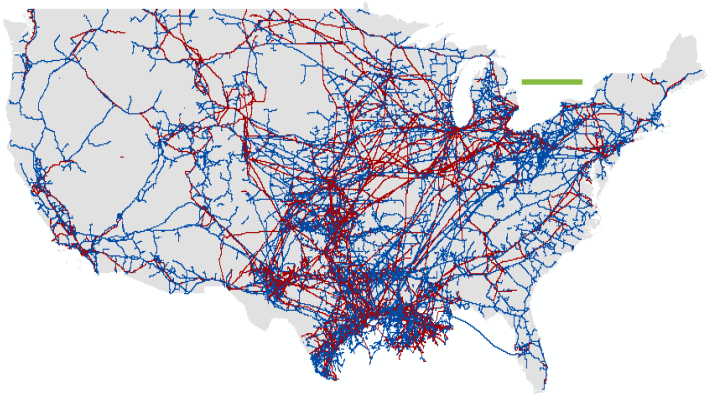
The Facts

PHMSA estimates it would take a constant line of tanker trucks, about 750 per day, loading up and moving out every two minutes, 24 hours a day, seven days a week, to move the equivalent volume of natural gas in even a modest pipeline. Put into a comparison for rail transportation, an equal volume would consist of a locomotive pulling 225 tank cars, each holding 28,000 gallons of liquified natural gas. Neither rail nor over-the-road transportation can come close to the safety of a regulated underground pipeline system.

The United States currently maintains 321,000 miles of natural gas gathering and transmission lines, along with two million miles of gas distribution mains to deliver energy to customers. The safety record of this infrastructure is excellent, and is improving even as more gas is produced.

In view of the massive volumes of energy they transport, pipelines have proven over decades to be safe, environmentally benign and efficient. At a time when natural gas demand is increasing, along with efforts to reduce carbon emissions, the U.S. needs clear thinking and leadership in recognizing that pipelines that take gas from regions with vast supplies to the rest of the nation are vital to both meet our future energy needs and to work in tandem with the increased use of renewable sources.

The U.S. maintains a regulated and monitored interstate pipeline system that provides the safest option for transporting the energy consumers and businesses demand. This map does not include the two million miles of additional distribution lines that connect those end users to the larger transmission lines.



Source: U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration

"Pipelines are the safest, most environmentally-friendly and most efficient and reliable mode of transporting natural gas."

Source: U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration

PIOGA®
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115 VIP Drive, Suite 210,
Northridge Office Plaza II
Wexford, PA 15090-7906
(724) 933-7306 I Fax (724) 933-7310
www. pioga.org I info@pioga.org