

NATURAL GAS SAFETY RESILENCE INNOVATION

USGO Annual Meeting 2019

Pipeline Safety



Setting a High Bar

Utilities help make the natural gas delivery system safer by supporting measures that provide regulatory certainty for the industry and coming together to develop best practices and voluntary programs.

- AGA has been a constant and steady voice in the pipeline safety reauthorization process
- AGA continuously tracks rulemakings at federal agencies to advocate for the smart and safe use of natural gas in America's homes and businesses.
- Numerous best practices benchmarking and roundtables, technical
- Committees, discussion groups, conferences and workshops
- Voluntary programs enable members to implement procedures that go beyond regulation to improve operational excellence and increase safety.

Pipeline Safety Reauthorization: AGA Priorities

- Preserve industry engagement in pipeline safety rulemaking process
- Support and encourage flexibility in the rule making process especially in language pertaining to distribution systems
- Avoid a difficult to manage, bulky legislative solutions
- Make certain ongoing pipeline replacement programs in the states are not upset by any new federal legislation
- ENSURING THIS BILL IS FOCUSED ON PIPELINE SAFETY!



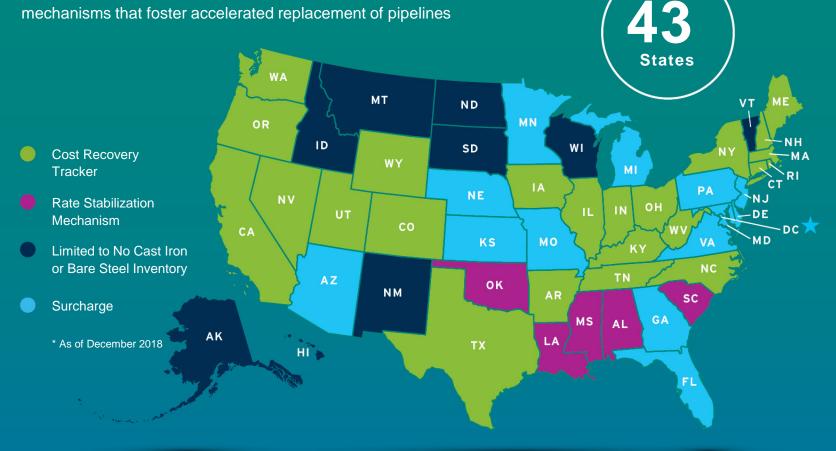
A Joint Effort to Enhance Pipeline Safety

Safety is a joint effort — a partnership that engages customers, regulators and policymakers at every level. We are committed to proactively collaborating with federal and state regulators, public officials, emergency responders, excavators, consumers, safety advocates and the public to continue improving the industry's longstanding record of providing natural gas service safely and effectively to more than 178 million Americans.



All natural gas utilities replace pipelines that may no longer be fit for service

Forty-three states, including the District of Columbia, have specific rate mechanisms that foster accelerated replacement of pipelines





Since 1990:

214%

Modern plastic pipelines have increased by 214%

Cast iron pipelines have declined by 58%

50% Unprotected steel pipelines have decreased by 50%

Pipeline Expansion

PIPELINES BRING OPPORTUNITY

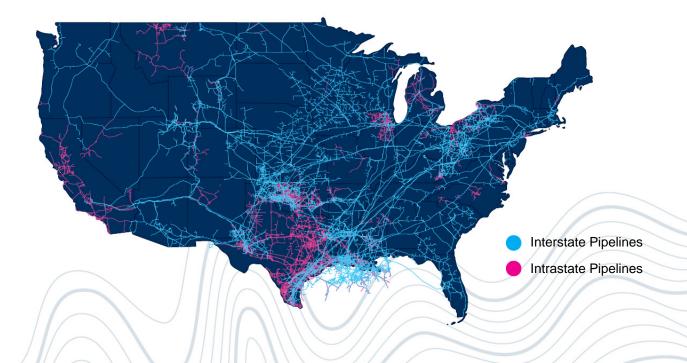
The nation's natural gas pipelines reach more than 178 million Americans, but there are pockets of this country that do not have access to natural gas. Homes, businesses, factories and electric generators have the capacity to efficiently utilize more natural gas, and the industry is working to extend its pipeline network to meet this demand. Gas utilities are working with energy planners, regulators and policymakers to bring natural gas and the comfort and savings it delivers — to these new customers.



An interstate natural gas pipeline construction or expansion project takes an average of about three years from the time it is first announced until the new pipe is placed in service. 2_5 million miles of pipeline

THE SAFEST WAY TO DELIVER ENERGY

Natural gas is delivered to customers through a 2.5million-mile underground pipeline system. This includes 2.2 million miles of local utility distribution pipelines and 300,000 miles of transmission pipelines that stretch across the country.





Mississippi

Mississippi has a Supplemental Growth Rider for Atmos Energy Corp. and CenterPoint Energy to support economic development and job creation by providing the incentive to extend gas service to projects previously viewed as economically infeasible.



Pennsylvania

Pennsylvania's Growth Extension Tariff (GET Gas) program allows UGI, PECO Energy Co., Columbia Gas of Pennsylvania and Peoples Gas to have innovative programs to manage the costs of extending natural gas service to new customers in the state.



Connecticut

Connecticut Natural Gas, Southern Connecticut Gas and Eversource Energy have a cost recovery mechanism to finance the tens of millions of dollars they have proposed to spend to connect 280,000 customers to natural gas pipelines over a 10-year period.



have adopted or considered innovative proposals to expand natural gas infrastructure so that more citizens and businesses can access this abundant fuel source.

Resilience, Reliability & Security

The gas and electric industries are focused on:

- Ways in which gas-fired generators located in the organized electric markets can obtain and receive the most reliable natural gas service with proper costallocation and cost-recovery
- Investment in infrastructure
- Ensuring that a robust natural gas infrastructure is available to serve electric generation

Natural Gas Proves Resiliency to the Electric System

The use of natural gas to generate electricity has grown substantially in recent years and that trend is expected to continue.

AGA and its members are actively working with other stakeholders, including the Federal Energy Regulatory Commission, to further explore how to improve coordination between the gas and electric industries. The natural gas fuel supply and delivery system serving electric generators is an interconnected and robust system that includes various redundancies and storage. As reliance on natural gas for power generation increases, the development of new natural gas infrastructure may be necessary in certain regions to support increased demand.

Leading by Example

The AGA Peer Review Program is a voluntary safety and operational practices program that allows participating companies to be reviewed by their peers, share leading practices, and identify opportunities to better serve customers and communities. Each review features a panel of fellow gas utility professionals from North America who provide the company with feedback to help enhance its safety and efficiency.

AGA members that serve 83% of the natural gas customers in the U.S. have participated in a peer review.



Secure

AGA and its members are dedicated to ensuring natural gas pipeline infrastructure remains resilient to dynamic cyber and physical security threats.

Natural gas utilities implement security programs and actively engage in voluntary actions to help enhance security, including:

- Implementing the Transportation Security
 Administration Pipeline Security Guidelines
- Applying appropriate security standards
- Participating in cross-sector exercises, such as GridEx
- Engaging in AGA programs, such as Peer Cyber Reviews C2M2 and Cyber Metrics

The Cyber Metrics Program offers a system of measurement of the cyber readiness of natural gas utilities by collecting information on security measures implemented across AGA's member utilities. The cyber and physical threat intelligence analysts at the DNG-ISAC have briefed foreign governments and international cybersecurity forums on intelligence sharing information and the latest training methods.





AGA developed the Downstream Natural Gas Information Sharing and Analysis Center (DNG-ISAC) as an online platform for sharing cyber and physical threat intelligence and tools to help further enhance the security of natural gas utilities. The DNG-ISAC, a separate legal entity from AGA, helps the industry share and access timely, accurate and relevant threat information as part of its continued commitment to the safe and reliable delivery of natural gas to the more than 178 million Americans who rely on it to meet their daily needs.

Energy Efficiency and Climate

In 2017, natural gas accounted for more than 31% of electricity generation in the U.S. Natural gas emits fewer greenhouse gases than coal for the same amount of electricity due to the higher efficiency of natural gas combined cycle generation compared with coal-fired boilers.

Switching from coal to natural gas to generate electricity reduces greenhouse gas emissions by an average of 53%



Our Shared Goal of Reducing Emissions

Increased natural gas efficiency and the growth of renewable energy have led to energy-related carbon dioxide emissions hitting 25-year lows.

States and municipalities have made commitments to pursue clean energy

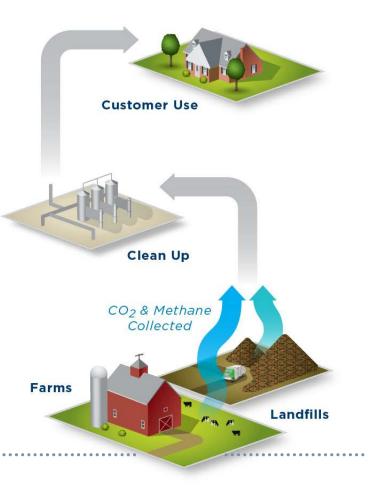
406 Mayors, representing 70 million Americans, commit to uphold the Paris Agreement goals



CLIMATEMAYORS ORG

Renewable Natural Gas

Renewable Natural Gas (RNG) is methane produced from farms, landfills and wastewater treatment plants. It is carbon neutral, versatile and fully compatible with the U.S. pipeline system. It can be used in homes and businesses, in manufacturing and heavy industries, for electricity production and in vehicles. Using RNG with next generation natural gas technologies further reduces emissions.





The combination of new near-zero emission natural gas engine technology and RNG provides the single best opportunity for the U.S. to achieve immediate and substantial nitrogen oxide and greenhouse gas emission reductions in the on-road heavy-duty transportation sectors.

Utilities throughout the country are embracing RNG



DTE Energy partnered with Pagel's Ponderosa Dairy in Kewaunee, Wisconsin, on a RNG project using dairy cow waste to create RNG that will help fuel compressed natural gas vehicles.



Vermont Gas is providing customers the option to purchase RNG through their monthly bill and CenterPoint Energy in Minnesota is working with its utility commission on a similar program.



In 2019, Portland, Oregon's Columbia Boulevard Wastewater Treatment Plant will begin turning waste into RNG that will fuel city vehicles and also flow to other customers via NW Natural's pipeline.



TECO Peoples Gas in Florida is partnering with landfills and wastewater treatment plants to process their biogas and transport it to compressed natural gas filling stations, industrial customers or deliver it to homes and businesses.



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