Smart Modernization
Pipeline Safety & Natural Gas Infrastructure Replacement and Expansion

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The American Gas Association (AGA), founded in 1918, represents more than 200 local natural gas utilities that deliver natural gas to 177 million Americans nationwide. In addition, AGA's broader membership includes natural gas pipelines, Canadian local distribution companies, natural gas gatherers, marketers and storage companies and more than 350 associate members who provide critical products and services to the natural gas industry.
Pipeline Safety & Infrastructure Replacement
Commitment to Safety

The natural gas industry has a long-standing record of providing natural gas service safely and effectively to more than 177 million Americans and is dedicated to the continued enhancement of pipeline safety.
A CULTURE OF SAFETY

“AGA and its member companies are committed to promoting positive safety cultures among their employees throughout the natural gas distribution industry. All employees, as well as contractors and suppliers providing services to AGA members, are expected to place the highest priority on employee, customer, public and pipeline safety.”

- Excerpt from AGA Safety Culture Statement
Safely transported

Across the Country

- Natural gas pipelines, are an essential part of the nation’s infrastructure. Transportation by pipeline is the safest form of energy delivery in the country.
- Natural gas utilities spend $19 billion annually to help enhance the safety of natural gas distribution and transmission systems.
Regulatory Oversight

There is significant oversight and regulation focused on the natural gas industry to help ensure public safety.

The U.S. Department of Transportation’s Pipeline and Hazardous Materials Safety Administration (PHMSA) establishes federal safety standards for pipelines, and PHMSA partners with state pipeline safety agencies on inspections and enforcement of intrastate pipelines. Individual states can regulate intrastate pipeline systems above and beyond federal requirements, and there are hundreds of state-specific pipeline safety regulations currently in place.

AGA supports continuous improvements to the safe delivery of natural gas through:

- Information sharing among emergency responders and the public that effectively informs and enhances pipeline safety
- Research and development of safety-enhancing technologies
- Collaboration with key stakeholders
- Advocating for the effective enforcement of “Call 811”
- Conducting forums for the industry that facilitate the sharing of leading practices
Pipeline Safety Regulations

- DOT Pipeline Safety & Hazardous Materials Administration (PHMSA)
  
  *Regulates gas utilities under 49 C.F.R. Part 192*

- Significant number of new requirements on the way
  
  *More than 80 mandates from Congress and recommendations from NTSB, GAO, and the OIG*

PHMSA’s Other Initiatives:

- Transmission Integrity Management Program (TRIMP)
- Distribution Integrity Management Program (DIMP)
- Control Room Management
- Damage Prevention
- Land Use Planning
- Public Awareness
- Emergency Preparedness
DOT Pipeline Safety Action Plan

• Raise the bar on pipeline safety
• Accelerate rehabilitation, repair and replacement programs for high risk pipelines
• Focus on cast iron, bare steel, older plastic

In Section 7 of the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011, Congress directed the Secretary of Transportation to develop a report on the national cast iron inventory

• AGA Supports the Action Plan and “Smart Modernization” of infrastructure that is no longer fit for service
RESOLVED, That the Board of Directors of the National Association of Regulatory Utility Commissioners... encourages regulators and industry to consider sensible programs aimed at replacing the most vulnerable pipelines as quickly as possible along with the adoption of rate recovery mechanisms that reflect the financial realities of the particular utility in question; and be it further;

RESOLVED, That State commissions should explore, examine, and consider adopting alternative rate recovery mechanisms as necessary to accelerate the modernization, replacement and expansion of the nation’s natural gas pipeline systems.
America’s natural gas utilities invest billions in our nation’s natural gas 2.4 million miles of pipeline infrastructure — the most extensive, integrated, safe and reliable in the world — which provides access to homes and businesses across the nation.

Working with governors, legislators and state regulators around the country, utilities are developing innovative models for making these capital investments possible.

Natural gas utilities spend more than $19 billion annually to help enhance the safety of natural gas distribution and transmission systems and to upgrade systems and expand service so more Americans can access this foundation fuel.
The overall trend is positive.

Nine states moved to adopt programs in 2013, alone.

NJ, MA, PA & DC adopted pipeline safety measures in 2014.

West Virginia passed legislation earlier this year.

States address this issue differently.

The basis for these decisions is always just and reasonable rates for consumers.
Overall Cast Iron Main Makes Up Less than 3% of the Distribution Mileage, and is Decreasing Annually

SOURCE: U.S. Department of Transportation, PHMSA, Distribution Annual Data
Natural Gas Distribution Infrastructure Expansion
Infrastructure replacement programs, if designed and coupled properly, provide the opportunity to put new technology in the ground which could allow for greater pipeline capacity and pressure in a given area.

With greater capacity, utilities are better positioned to expand to serve more customers.
Drivers for Natural Gas Demand & Infrastructure Expansion

- Low price of natural gas
- Reductions in consumer energy prices
- Economic development opportunities
- Environmental quality (GHG reduction, efficiency)
- Energy security
- New technologies (NGVs, CHP, etc.)
37 states presently have or are considering an innovative infrastructure expansion program or policy.
The Declining Trend of Natural Gas Emissions
System Modernization Has Been a Decades Long Process and Will Continue

![Graph showing the decrease in miles of cast iron and unprotected steel pipelines from 1990 to 2013. The graph includes two lines: one for Main - Unprotected Steel and another for Main - Cast Iron. The source of the data is the Department of Transportation.](source: Department of Transportation)
As a Result, Emissions Have Declined Even as the System Grows

Pipeline Replacement Lowers Emissions

- Million Metric Tons CO2-equivalent
- Thousand Miles of Main

Source: AGA Analysis based on Department of Transportation data and EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2012

*Excludes Reductions from Voluntary Programs
Natural Gas Emissions as Percentage of Production

Total natural gas production 30,000 Bcf (2013)

- **Field Production***
  - 98 Bcf
  - 0.41%

- **Processing**
  - 47 Bcf
  - 0.18%

- **Transmission & Storage**
  - 114 Bcf
  - 0.42%

- **Distribution**
  - 70 Bcf
  - 0.26%

Natural gas emissions account for **1.3%** of production

* Includes natural gas fraction of oil well production.
Source: U.S. Department of Energy and U.S. Environmental Protection Agency

Only **0.26%** of produced natural gas is emitted from systems operated by natural gas utilities
Natural Gas Distribution

*Shrinking Emissions by the Numbers*

- **65,100** – miles of cast iron & bare steel pipe replaced with PE plastic pipe
- **300,000** – added miles of distribution mains
- **18 million** – number of new customers served (**32% increase**)
- **16%** - emissions decline since 1990
  - *Note that this is due to an uptick in emissions related to higher throughput in 2013, relative to lower consumption in 2012.*
- **0.26%** - EPA estimated distribution system emissions as a percentage of U.S. Gross Production

*Numbers reflect data collected from 1990-2013*
Conclusions

• Safe, reliable natural gas delivery is core to our members businesses.

• *Smart modernization* initiatives (pipeline replacement and infrastructure expansion) are increasing safety and driving down natural gas emissions.