

NATURAL GAS

July 2012

# Government – Industry Pipeline R&D Forum

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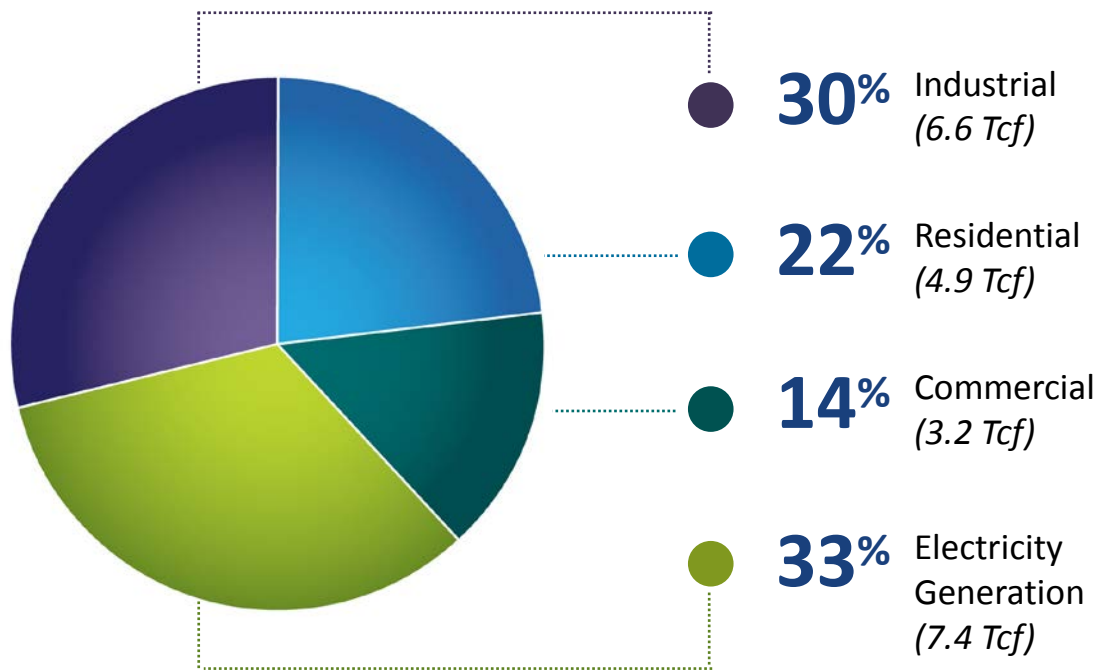
 **AGA**  
American Gas  
Association

## CLEAN NATURAL GAS

# Touching Every Segment of American Life

## 2010 NATURAL GAS

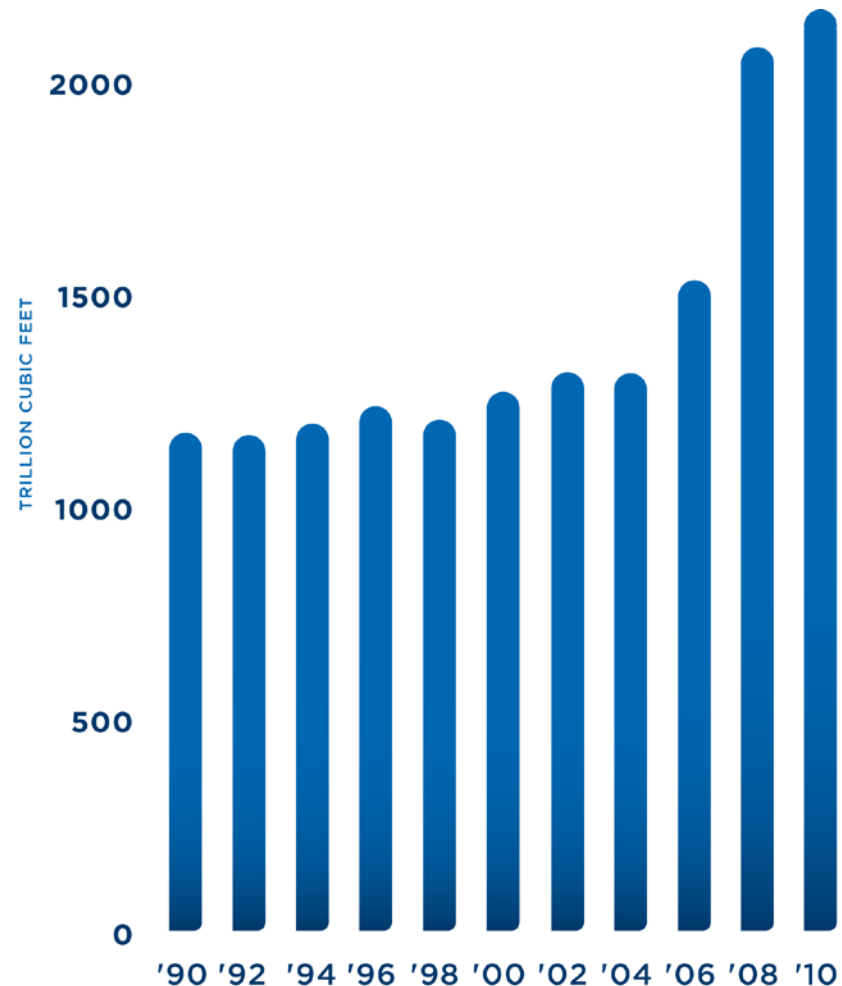
U.S. Consumer Consumption by Sector = 22.1 Tcf



- Natural gas touches nearly every segment of American life

## AND THEN There Was Abundance

According to the Energy Information Administration and the Potential Gas Committee, **the U.S. has enough natural gas to meet America's diverse energy needs for 100 years**



Source: U.S. Department of Energy, Energy Information Administration; Potential Gas Committee

# Delivering on America's National Priorities

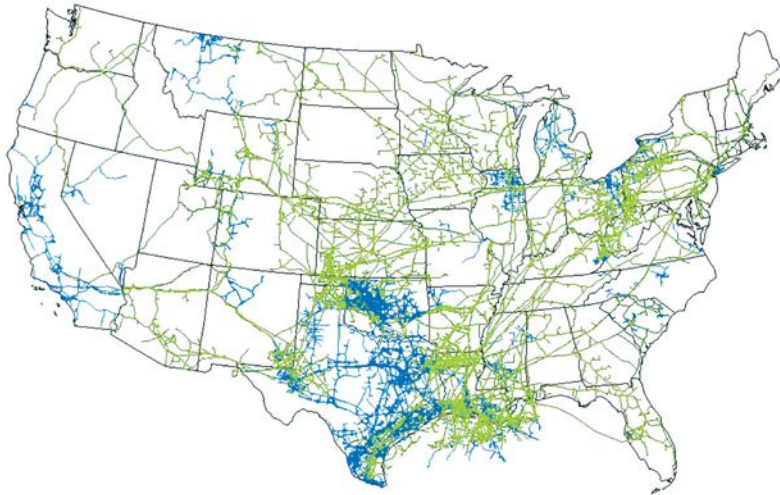
- Natural Gas Can Help:

- improve energy efficiency
- ensure energy affordability
- reduce consumer costs
- reduce greenhouse gas emissions
- increase America's energy security and support American jobs
- create a level playing field



# Pipeline Infrastructure: At Work Everyday

- 300,000 miles of transmission pipe
- 2.4 million miles of distribution piping
- Decreasing incident rates
- Decreasing excavation damage
- Increasing natural gas supply and demand




# Major Infrastructure Changes

*2012 to 2032*

- MAOP Records Verification
- MAOP Grandfathering Regulatory Amendment
- Installing RCVs and ASVs in Transmission
- Cast Iron Replacement and Management
- Vintage Plastic Pipe Replacement and Management
- EFVs for Multi-family and Small Commercial
- Install New Shale Pipeline Network
- Full Public Disclosure



# How Do We Accomplish R&D Goals While Simultaneously Undergoing Major Infrastructure Change?



***We have to align R&D paths with the needs of infrastructure development and enhancements to safety.***



# Is Research Aligned with Safety Priorities?

## PHMSA Research Categories

- Threat Prevention
- Leak Detection/Mitigation & Storage
- Anomaly Detection & Characterization
- Anomaly Repair & Remediation
- Design/Materials/Welding-Joining & Valves

## Legislative and Regulatory Recommendations

- Cast Iron Replacement/New Materials
- Inspecting unpiggable pipeline
- More precise internal inspection
- Leak detection and response
- Improve data analysis and recordkeeping



# PHMSA Success Stories



## Threat Identification

- Digital Mapping of Buried Pipelines with Dual Array Systems

## Leak Detection

- Airborne Pipeline Inspection Mapping  
Free-Swimming Acoustic Internal  
Inspection Tool

## Anomaly Detection & Characterization

- Cathodic Protection Current Mapping In-Line Inspection
- Robotic Platform Capable of Inspecting Unpiggable Pipelines

# Moving R&D to Real World Application



- R&D decisions and funding
- Successful R&D testing
- PHMSA special permit process for testing
- Rulemaking process

*Action is required to streamline this process that may take a decade to complete.*

# Safety Priorities for the Gas Distribution Infrastructure

- Inspecting Unpiggable Transmission Pipelines
- Yield Strength Determination Technique
- Cast Iron Pipeline Liners
- Composite Pipe for Transmission
- Rehabilitation New Material Acceptance
- Tracking and tracing



*Developing and Implementing New Technology is a Key Solution to Enhancing Pipeline Safety.*



## TOP PRIORITY

# Safety

- AGA and its member companies place the **highest priority** on employee, customer, public and pipeline safety and are committed to promoting **positive safety cultures** throughout the natural gas distribution industry

### 2012 AGA Commitment to Enhancing Safety Advancing Technology Development

*Increase investment, continue participation, and support research, development and deployment of technologies to improve safety. Evaluate and appropriately implement new technological advances.*



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