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2019 Annual Meeting and Education Conference

Committee On Gas

CUSTOMER EXPECTATIONS VS

REGULATED GAS UTILITIES

76% OF CONSUMERS EXPECT COMPANIES TO UNDERSTAND THEIR NEEDS AND EXPECTATIONS.

Salesforce Research: Customer Expectations Hit All-time Highs 2019

Customer Expectations Hit All-Time Highs

64% of consumers and 80% of business buyers expect companies to respond to

66% of millennial consumers expect

"immediate" (<10 min) response as important or

2019 Customer Service Drivers

Billing and Payment Best Practices

1. Online account access
2. Electronic billing
3. Multiple payment options
4. Personalized bill alerts
5. Choice of due dates

Customer Service Best Practices

1. High first-contact resolution, phone and online
2. Mobile-friendly app or website
3. Easy and informative online experience

Communications Best Practices

1. Pro-active, frequent and ongoing communications
2. Delivered via e-channels (email, text, web, social)
3. Relevant, personalized content

J.D. POWER NATIONAL NATURAL GAS SURVEY

UBER Sets New Bar for Customer Service

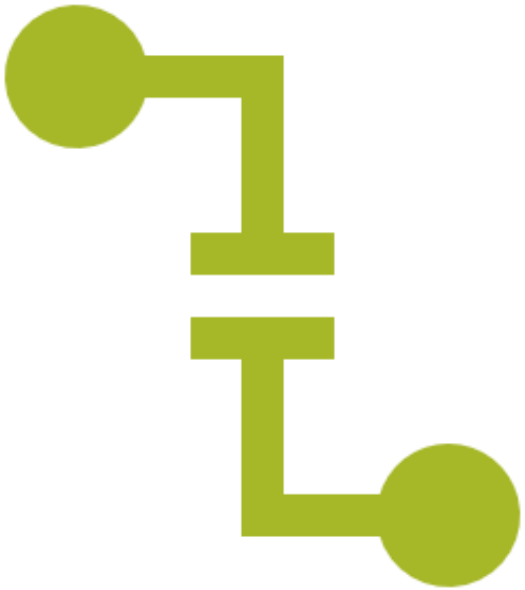
- Simplified the ordering process.
- Reduced uncertainty of when and what type of car will arrive.
- Simplified the payment process.
- Saves time through seamless on-demand dependability.
- Provides automatic electronic receipts.
- Provides choice of services, from standard to luxury.

ENTREPRENEUR: How Uber Used a Simplified Business Model to Disrupt the Taxi Industry

Historically, Customers Expected Basics Like Quality Service And Fair Pricing — But Modern Customers Have Higher Expectations.

They Want Proactive Service, Personalized Interactions, And Connected Experiences Across Channels

Salesforce Research: Customer Expectations Hit All-time Highs 2019



JUXTAPOSITION

Consumer Expectations VS Utility Realities

A perfect storm of disruption, driven by aging infrastructure, rising demand, environmental volatility and growing consumer expectations for consumer-like digital experiences is challenging utilities like never before.

T&D World; Screensavergift

"When customers feel good about their utilities, rate cases are approved and price increases become much easier to digest."

J.D. Power and Associates. The McGraw-Hill Companies, Inc.

WHAT TO DO?

User Friendly Tech

- Customers want user-friendly tech like what they expect from their banking and credit card digital apps.

- Many utilities are investing heavily in technology systems upgrades that will allow them to instantly text customer alerts, allow customers to manage their usage and billing, and interact with customer support digitally.

T&D World: Critical Role of Customer Connect in Changing Utilities Environment

Southern Company Gas
Keep Me Informed

- Pilot started in August 2019 in Georgia
- Originally only in 2 Metro counties, now also in Southeast Georgia
- Agile Project
- 2,300 customers in the original 2 counties opted in for a text ahead or concierge call if field tech is rerouted for gas leak

Questions for Commissions

- How do you balance technology infrastructure investments with pipeline safety and expansion?
- How do you determine how much of the investment to capitalize and how quickly to depreciate?
- How do you balance the investment against what customers are willing to pay?

THANK YOU

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75-year History of Turning Raw Technology into Practical Energy Solutions

FOR A BETTER ECONOMY AND A BETTER ENVIRONMENT

SUPPLY ▶ **CONVERSION** ▶ **DELIVERY** ▶ **UTILIZATION**

RESEARCH & DEVELOPMENT

PROGRAM MANAGEMENT

TECHNICAL/ ANALYTICAL

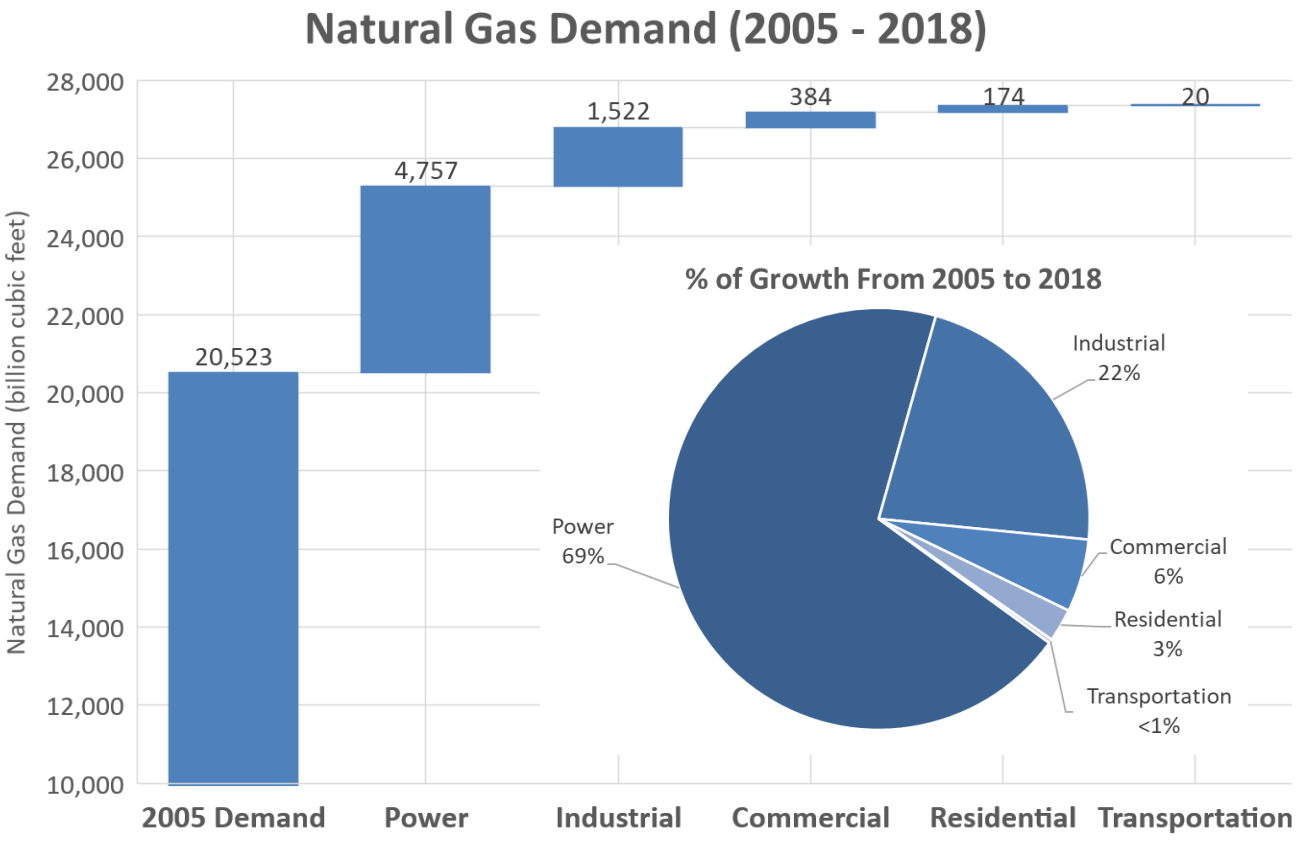
CONSULTING

TRAINING

COMMERCIALIZATION

400+ EMPLOYEES

World-class piloting facilities headquartered in Chicago area

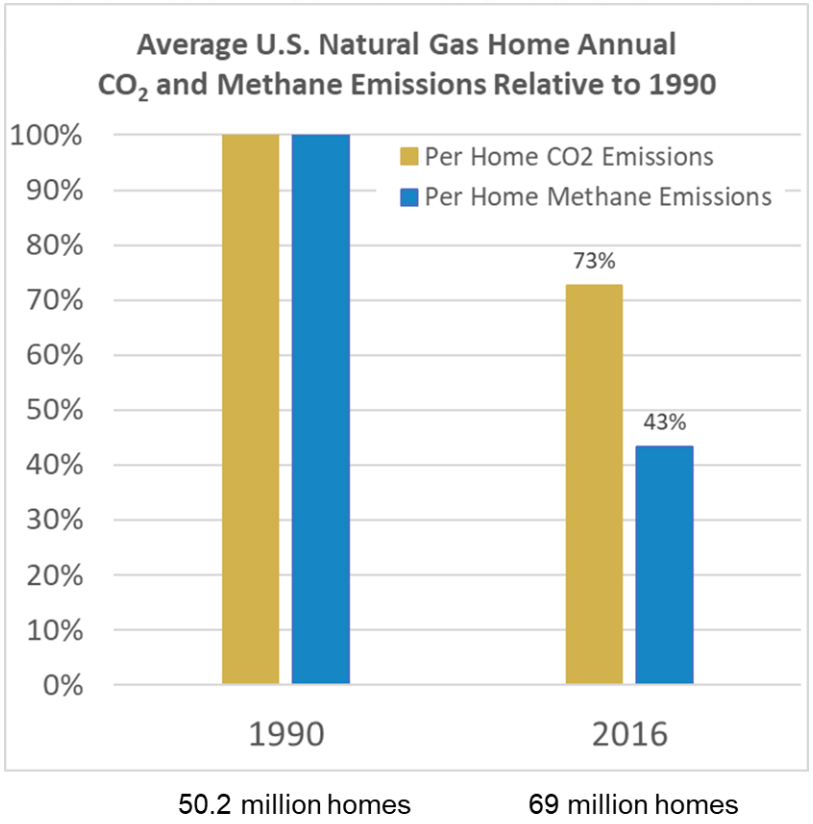


Natural gas demand grew in all end use markets from 2005 to 2018, with an overall 33% increase (6.8 trillion cubic feet).

The majority of growth was in power generation (69%), followed by industrial (22%), commercial and residential (9%), and transportation (i.e., natural gas vehicles). About 6 million new U.S. homes were connected to the natural gas system – including new homes and conversions (e.g., from fuel oil).

Source: DOE-EIA; GTI analysis

Natural Gas Residential GHG Trends



- Significant changes have occurred in the ways natural gas is used in U.S. homes since 1990
  - Nearly 30% reduction in annual per-home CO_2 emissions
  - Nearly 60% reduction in annual methane emissions per home (full-fuel-cycle)
- Further potential to improve efficiency and lower GHG impacts
  - Gas heat pumps
  - Improved building envelopes
  - Renewables (biomethane, H_2, solar)
  - Lower methane emissions

Source: DOE-EIA, USEPA

Natural Gas Low Greenhouse Gas Pathways

Near-Term (25-50+%)

Expanded use of high-efficiency gas equipment

Hybrid natural gas furnace/ boilers and electric heat pump systems

Building envelope improvement

Next-Gen (40-60+%)

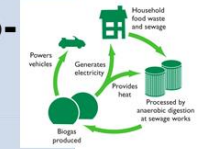
Natural gas heat pumps for space & water heating

Micro CHP systems

Deep building retrofits

RNG & Hydrogen Renewables (Added 10-30%)

Renewable natural gas blends (bio-methane)



Solar thermal/natural gas space & water heating systems

Lower Methane Emissions (5-10%)

Reducing full-cycle natural gas methane emissions

GTI – Assisting the Transition to a Lower Carbon Future

- More efficient natural gas technologies
  - Developing, testing and deploying natural gas heat pumps which can provide hot water and heating at up to 140% efficiency.
- Helping utilities understand renewable natural gas (RNG) attributes, gas quality and blending issues
  - RNG testing facilities
  - RNG blending modeling
  - Development of constituent testing procedures
- Hydrogen compatibility testing
  - Testing pipe materials to better understand potential for mixing hydrogen into natural gas infrastructure – what % may be possible
  - Testing end-use technologies to ascertain what percentage of hydrogen can be tolerated

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Nicor Gas | Energy Efficiency Program

Energy Efficiency Policy Reflections NARUC

Presented by Jim Jerozal, Nicor Gas

November 18, 2019

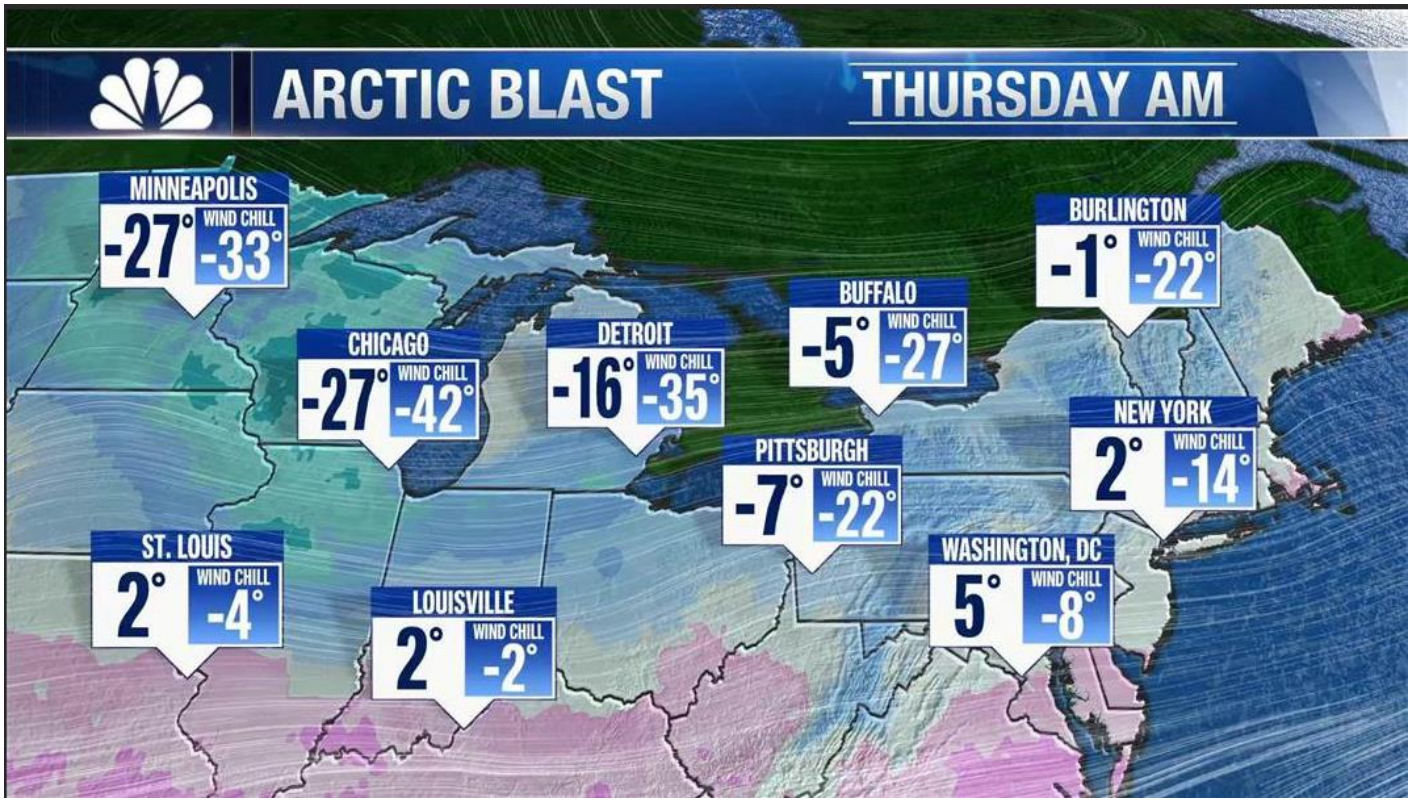
San Antonio, TX

Speaker bio – Jim Jerozal

- Director Energy Efficiency
- 17 years Nicor Gas
  - Environmental/Health and Safety
  - Codes and Standards/Pipeline Safety
  - Training & Materials Testing
- Last 10 years in Energy Efficiency
- BS Bioengineering, Syracuse University
- Three years as Chair of MEEA (Midwest Energy Efficiency Alliance) – Currently Treasurer
- Board member & Vice Chair of Chicago Wilderness

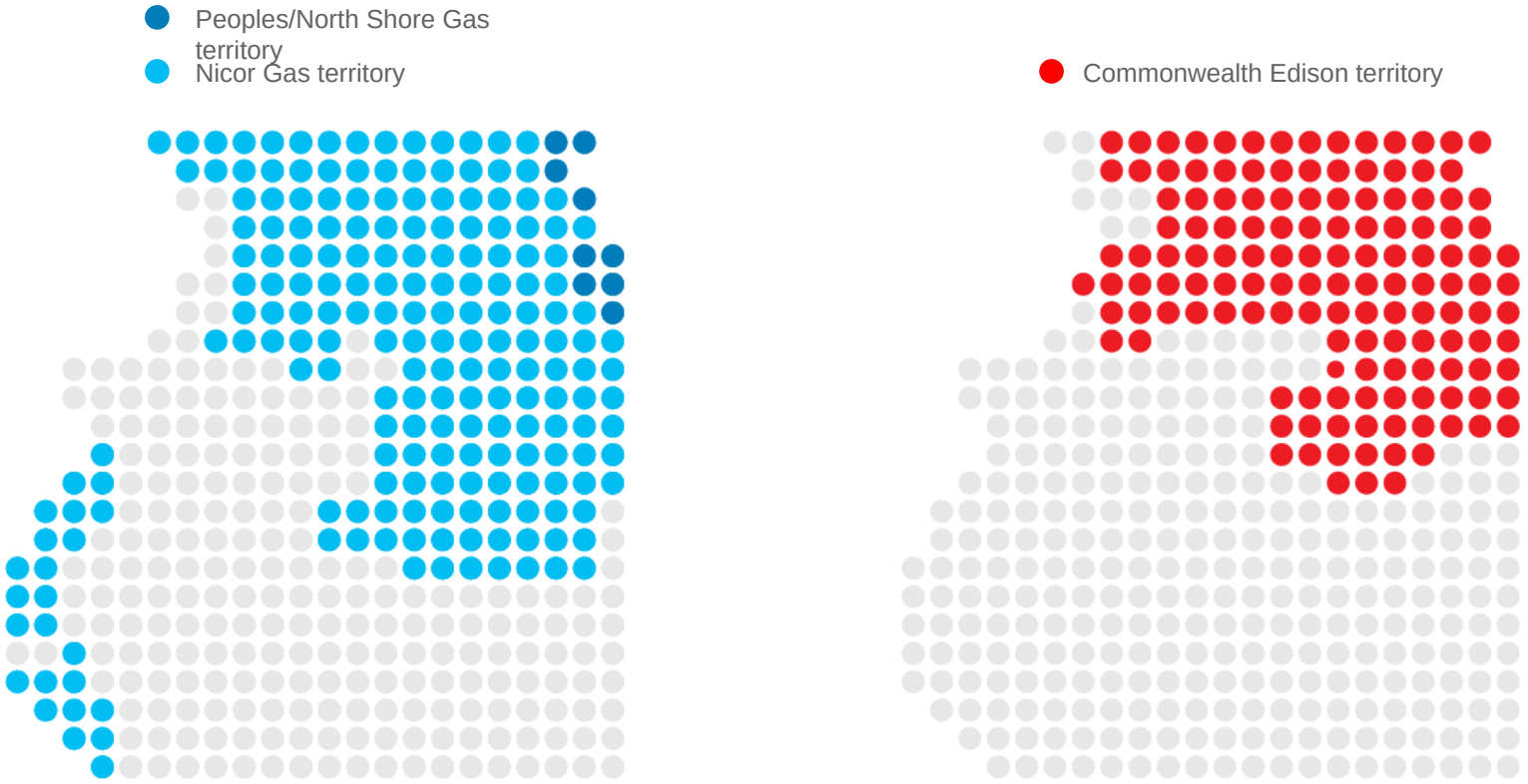
James Jerozal
Nicor Gas
jjeroza@southernco.com
630-388-3390

Polar Vortex “The New Normal”? (Jan 30/31, 2019)



- 2 Days
- -18 degree high and -32 degree low
- 8.9 Bcf gas delivered over 2 days (4.8Bcf record 1-day delivery on 1/30/18)
- All customers were served with no curtailments

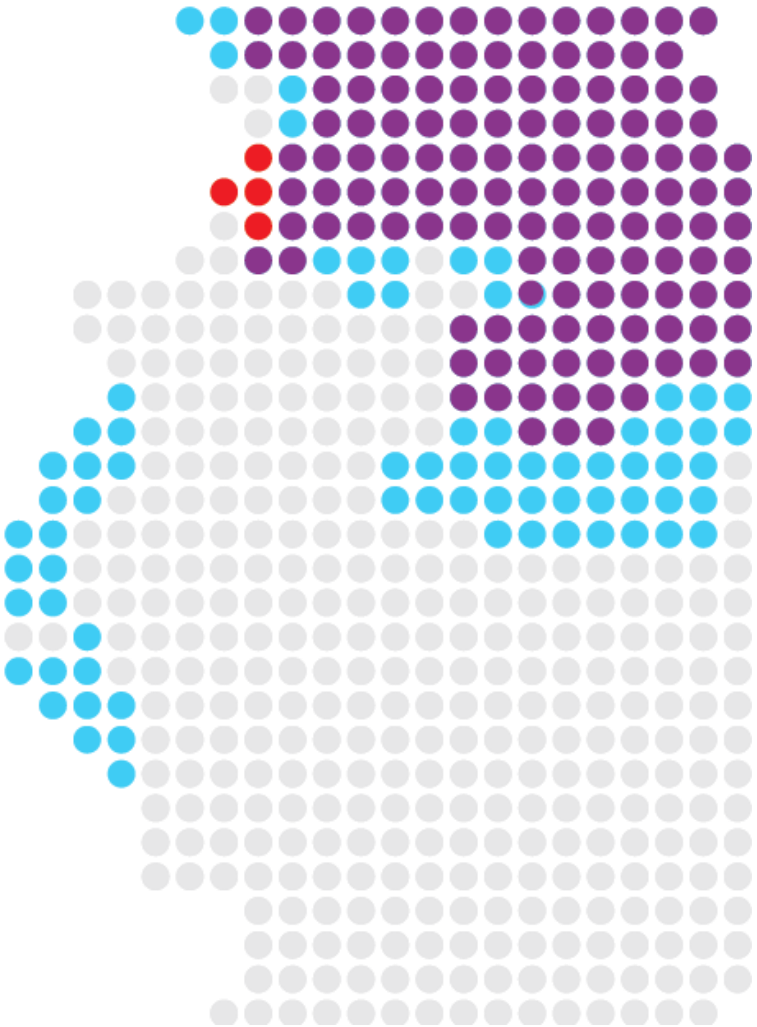
Energy distribution by utility



Utility	Peak demand (gas)	Peak demand (electricity)
Peoples Gas/North Shore Gas	~2.44 Bcf	~30.4 GW*
Nicor Gas	4.88 Bcf	~60.8 GW*
ComEd Historic Peak Demand		24.8 GW

Sustained energy delivery capacity (averaged over 24 hours – the peak hour would likely be somewhat higher).
*Calculation: 4.88*10^9 scf/24 hours* 1,020 Btu/scf * 1 kWh/3,412 Btu = 60, 785, 463 kW (or 60.8 GW or 60,785 MW)

Coldest day of the year – Load scenario



- Peoples/North Shore Gas territory
- Nicor Gas territory
- Commonwealth Edison territory
- Shared Gas/Electric territory

- On 1/30/2019, Peoples Gas, North Shore Gas and Nicor Gas distributed more than **7.32 Bcf of natural gas**
- An all-electric grid may need to distribute up to an additional **90 GW** to meet northern Illinois customer energy needs for a similar day.

That's **more than 3.5 x** what ComEd has *ever* distributed in a single day

Future Energy Efficiency Policy
The Three-Legged Stool

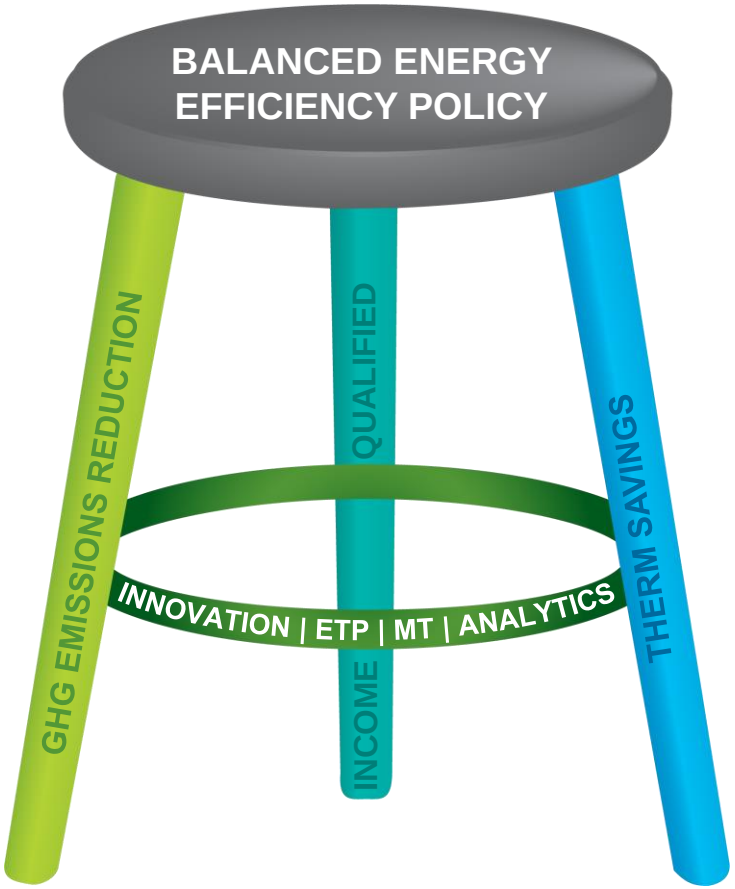
There is a more balanced future we should explore to leverage EE and address other societal imperatives:

Greenhouse gas impact
Reduced GHG emissions
- Injecting renewable/reclaimed natural gas into the gas supply
- Encouraging new strategies like hydrogen and renewables

Income-qualified
Addressing the most energy-vulnerable customers
- Low income/seniors/fixed-income
- Can least afford energy spikes
- Most expensive to serve

Savings
Reduction in therm usage
- Robust savings that are reasonable and achievable (approx. 0.3–0.4% of deliveries)
- Leverage innovation: super-efficient gas heat pumps/ZNE gas homes

Innovation, ETP, MT, Analytics
Stability and sustainability
- We must identify promising technologies, consider market transformation efforts, and rely on innovation and analytics to guide policy and program design



Nicor Gas results

Benefits of the Nicor Gas Energy Efficiency Program

127M+
in incentives since 2011

- Residential and multi-family customers: energy-saving kits and home assessments
- Commercial and public sector customers: building system optimization, energy-saving projects
- Income-qualified customers: comprehensive energy upgrades at no cost
- Rebates for energy-efficient products and improvements

1.68B+
lifecycle therms saved since 2011

- Avoids more than **8.94M metric tons** of CO_2 emissions
- Equivalent to the CO_2 emissions generated by the **energy used by 1.07M homes** over the course of a year (about 20% of all homes in Illinois)

701K+
customers in 637 communities have participated

- $239 average incentive per customer
- Engaged 116K elementary school students in energy efficiency education

$1.12B
Economic activity spurred since 2011

- 7,833 jobs supported since 2011
- $22 million spent with diverse suppliers
- $451M wages supported since 2011

Results as of September 1, 2019. EEP emissions data based on lifecycle therm savings. Source: EPA.gov, EIA.gov. Economic impact and jobs based on IMPLAN economic impact modeling.

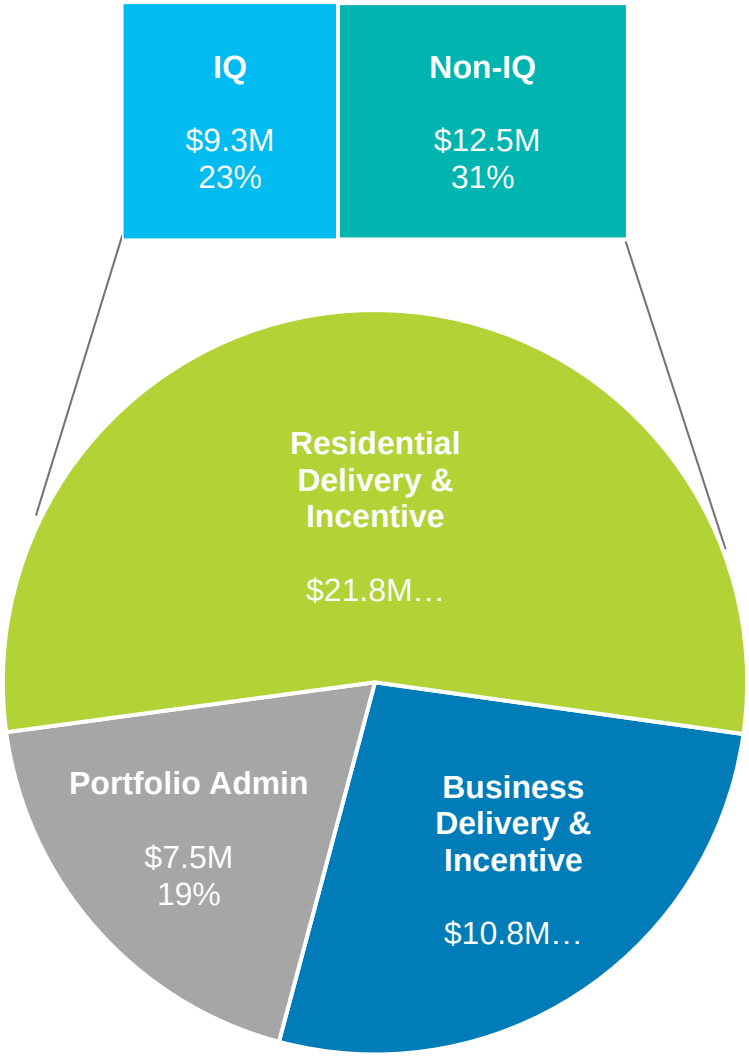
EEP benefits for income-qualified customers

Making a real impact

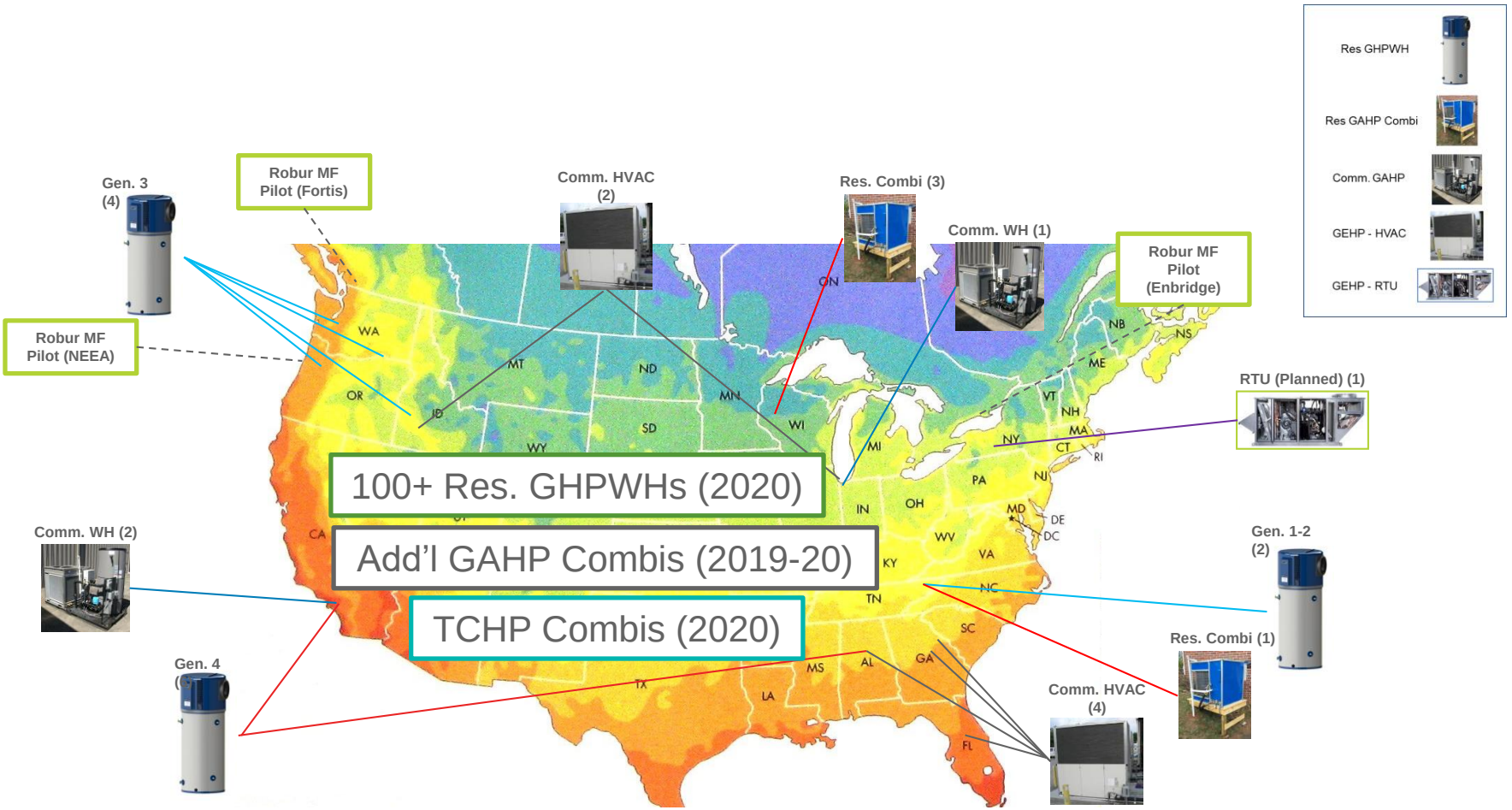
Through partnerships with Community Based Organizations and Community Action Agencies, we are able to help income-qualified customers like Mike and Norberta Hale (pictured above) save energy and money.

Mike and Norberta received free attic insulation, wall insulation, air sealing, a new high-efficiency furnace and water heater, a smart thermostat and other free energy-saving products.

2019 Planned EEP Portfolio Spend

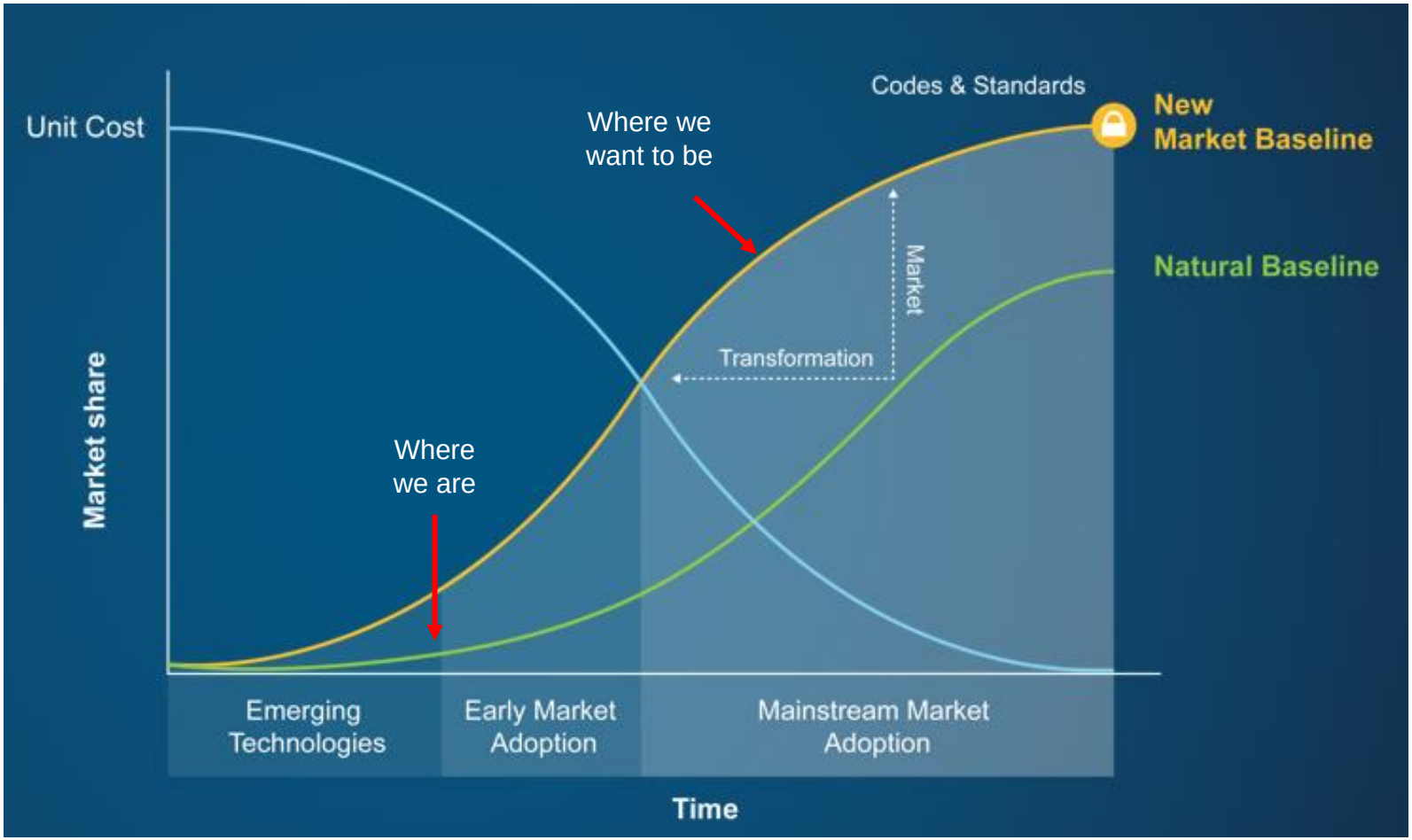


Innovation – Technical Demos



Market Transformation

Market Transformation (MT) is the strategic process of intervening in a market to create lasting change that results in the accelerated adoption of energy efficient products, services and practices.



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2019 Annual Meeting and Education Conference

Committee On Gas

National Association of Regulatory Utility Commissioners (NARUC)

Committee on Gas 2019 Annual Meeting

San Antonio, TX
November 2019



Paul Roberti
Chief Counsel
Office of Chief Counsel
Pipeline and Hazardous Materials Safety Administration

PHMSA's Mission

"To protect people and the environment by advancing the safe transportation of energy and other hazardous materials that are essential to our daily lives"

Four Pillars Undergirding PHMSA's Mission:

- Safety – Prevent incidents by establishing national policy, setting and enforcing standards, educating, and conducting research.
- Infrastructure – Support policies that promote continuous investment in legacy systems
- Innovation – Promote research and development to enable new technologies and innovation
- Accountability – Hold regulated industries accountable for meeting safety standards, and be held accountable as an effective regulator

PHMSA Regulated Pipeline Facilities

OPS and States

Pipeline Facilities by System Type			
System Type	**Miles**	**Percent of Miles**	**Number of Operators**
Hazardous Liquid CY 2017	**215,817 8,118 Tanks**	**8%**	**531**
Gas Transmission CY 2018	**301,147**	**11%**	**1,045**
Gas Gathering CY 2018	**17,556**	**1%**	**344**
Gas Distribution CY 2018	**2,234,258**	**80%**	**1,283**
Total Miles: 2,769,048			
Liquefied Natural Gas CY 2018 **Intrastate**	**157 Plants, 228 Tanks, 86 Operators** **Plants: 27 Interstate and 130**		
Underground Natural Gas Storage CY 2018	**397 Facilities, 451 Reservoirs 17,281 Wells, 124 Operators Facilities: 221 Interstate and 176 Intrastate**		

Data accurate as of March 27, 2019

PHMSA Transmits Three New Rules to Federal Register in a Single Day



Published Rulemakings

- **Safety of Gas Transmission Pipelines**
  - Fulfills statutory mandates and NTSB requirements by expanding IM assessments, requiring MAOP reconfirmation, and requiring use of PRDs prior to insertion/removal of ILI tools.
  - Effects 300,000 miles of transmission lines.
- **Safety of Hazardous Liquid Pipelines**
  - Expanded integrity management requirements.
  - Directs operators to periodically evaluate the condition of all HL pipelines, regardless of their location, and set repair timelines.
  - Extends leak detection requirement to all HL pipelines.
  - Fulfills multiple safety recommendations and Congressional mandates.
  - Effects 215,000 miles of HL lines.
- **Enhanced Emergency Order (EO) Procedures**
  - Revises EO procedures by adding protections for petitioners that seek to modify or terminate an EO.

Safety of Gas Transmission Pipelines Final Rule

- Requires reconfirmation of the maximum allowable operating pressure (MAOP) for certain pipelines with (1) inadequate MAOP records and (2) grandfathered pipelines that have not had a pressure test;
- Introduces “moderate consequence areas” (MCA) for populated areas not currently subject to integrity assessments where an incident could pose risk to human life and property;
- Collect or create records of the material properties of the pipeline if they must reconfirm the pipeline’s MAOP;
- Use devices that safely relieve pressure prior to the insertion or removal of in-line inspection (ILI) tools to help ensure the safety of personnel performing in-line inspections;
- Consider seismicity as a factor in threat assessments and incorporate into P&M measures;
- Report to PHMSA MAOP exceedances on or before the 5th day following the date on which the exceedance occurs;
- Use industry consensus standards for in-line inspections that provide rigorous processes for qualifying the equipment, people, processes, and software used in such inspections.

Safety of Hazardous Liquid Pipelines Final Rule

- Extension of reporting requirements to previously-unregulated gravity lines and gathering lines.
- Expansion of leak-detection requirements.
- Inspection of pipelines after extreme weather events or natural disasters.
- Expands integrity management (IM) requirements to onshore segments not currently covered.
- Expanded use of inline inspection tools for HCA and non-HCA segments.
- Requires leak detection systems for all hazardous liquid pipelines, including those outside of HCAs.
- Updates data integration requirements for identifying HCAs and seismicity risks.
- More timely provision of safety data sheets to first responders (within 6 hours of reported spill).
- Expanded accident reporting requirements for pipelines and unregulated gathering lines.
- Annual in-line inspection assessments and other surveys of certain onshore underwater pipelines.

Enhanced Emergency Order Procedures Final Rule

- Amends an earlier IFR, clarifies the duration and scope of emergency orders and revises the administrative or judicial timeline for these orders.
- Specifies that PHMSA will publish emergency orders on both PHMSA's website and with the Federal Register.
- Extends the deadline for filing a petition for reconsideration and explains that an emergency order may be removed when the relevant imminent hazard no longer exists.
- Specifies that PHMSA may consolidate petitions for reconsideration, provided such consolidation occurs prior to the commencement of a formal hearing.

Pipeline Regulatory Update

Rule (RIN)	Description	Rulemaking Status	Current Target
2137-AE66	Safety of Hazardous Liquid Pipelines (Final rule)	Published	N/A
2137-AE72	Safety of Gas Transmission (Final rule)	Published	N/A
2137-AF26	Enhanced Emergency Order Procedures (Final Rule)	Published	N/A
2137-AF06	Rupture Detection and Valves (NPRM)	In Progress	Fall 2019
2137-AF22	Underground Natural Gas Storage Facilities (Final Rule)	In Progress	Fall 2019
2137-AF29	Class Location Requirements (NPRM)	In Progress	Fall 2019
2137-AF38	Safety of Gas Gathering Pipelines (Final rule)	In Progress	Spring 2020
2137-AF39	Safety of Gas Pipelines: IM Improvements (Final rule)	In Progress	Winter 2019
2137-AF36	Gas Pipeline Regulatory Reform (NPRM)	In Progress	Fall 2019
2137-AF37	Liquid Pipeline Regulatory Reform (NPRM)	In Progress	Fall 2019
2137-AF45	Amendments to LNG Facilities (NPRM)	In Progress	Fall 2019
2137-AF44	Repair Criteria for Hazardous Liquid Pipelines (NPRM)	In Progress	Spring 2020
2137-AF31	Coastal Ecological USAs (ANPRM)	In Progress	Spring 2020
2137-AF13	Periodic Standards Update (NPRM)	In Progress	Spring 2020
2137-AF48	Periodic Standards Update II (NPRM)	TBD	TBD

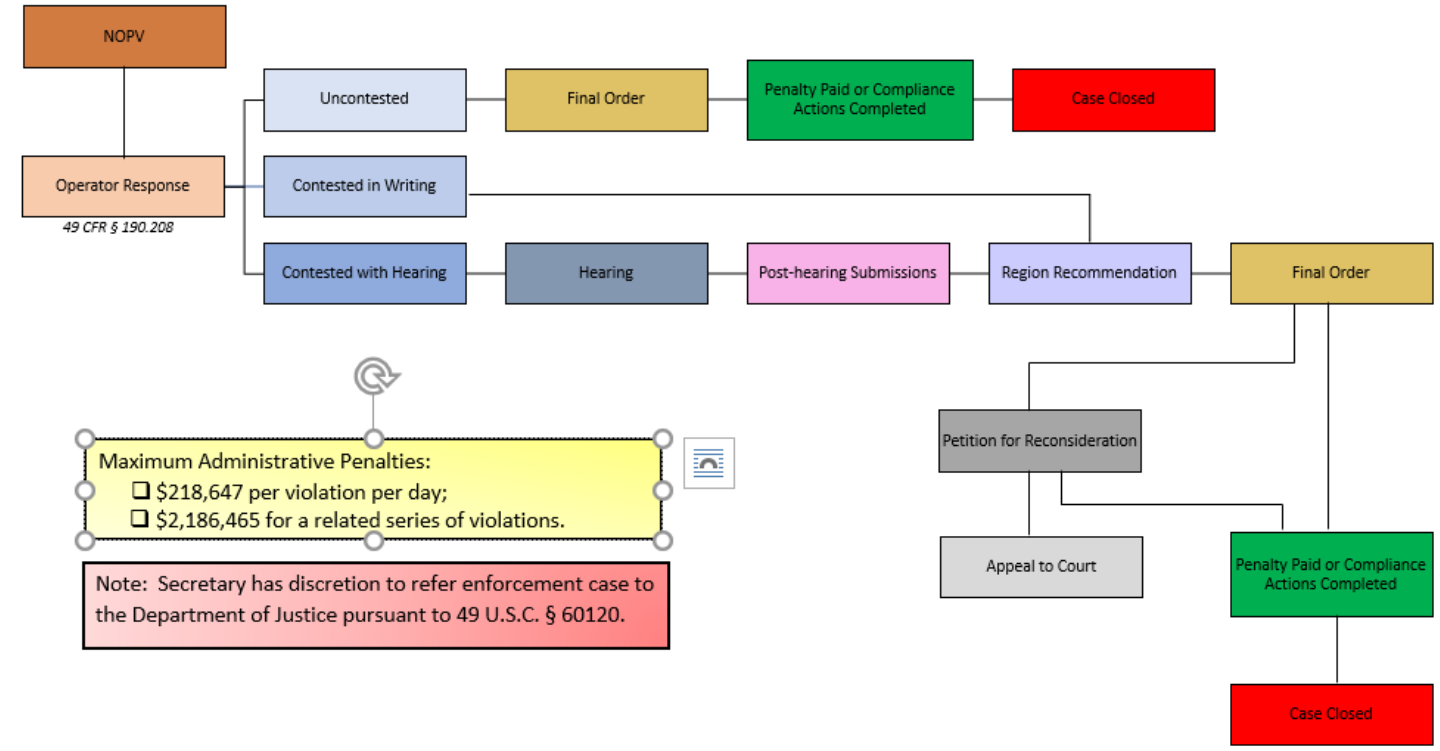
DOT General Counsel's Enforcement Memorandum

- On February 15, 2019, DOT issued Memorandum on Procedural Requirements for DOT Enforcement Actions
- Two companion DOT Memoranda recently issued – Address Rulemaking Procedures and Use of Guidance
- October 9, 2019 Executive Order on "Promoting the Rule of Law Through Transparency and Fairness in Civil Administrative Enforcement and Adjudication"

Procedural Requirements for DOT Enforcement Actions

- Ensure due process throughout enforcement process
- Prompt disclosure compliance issues
- No broad or unduly expansive interpretations of regulations
- Legally sufficient basis for an enforcement action
- Mandatory disclosure of materially exculpatory evidence
- Objective and transparent methodology for penalty considerations
- Timely disclosure of penalty calculation worksheets
- Limitation on use of guidance documents
- Other Objectives: Ex parte communications; ADR; Fair notice; Avoiding bias

PIPELINE AND HAZARDAROUS MATERIALS SAFETY ADMINISTRATION
PIPELINE ENFORCEMENT PROCESS

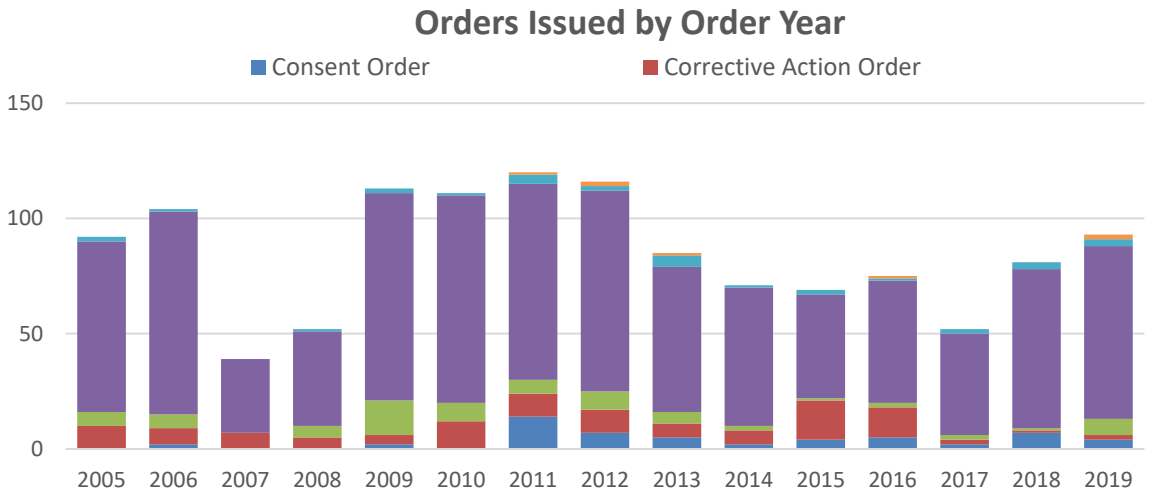


Improvements in Enforcement Process

- More efficient timelines from completion of inspections to issuance of Final Orders.
- Streamlined process for Uncontested Cases where there is no challenge to the penalty or compliance actions.
- Requests for Extensions to Respond to Notice must include justification of good cause.
- Scheduling Order at the conclusion of hearings to set dates for Post Hearing Briefs and Region Recommendations.

Our National Presence

Enforcement Statistics

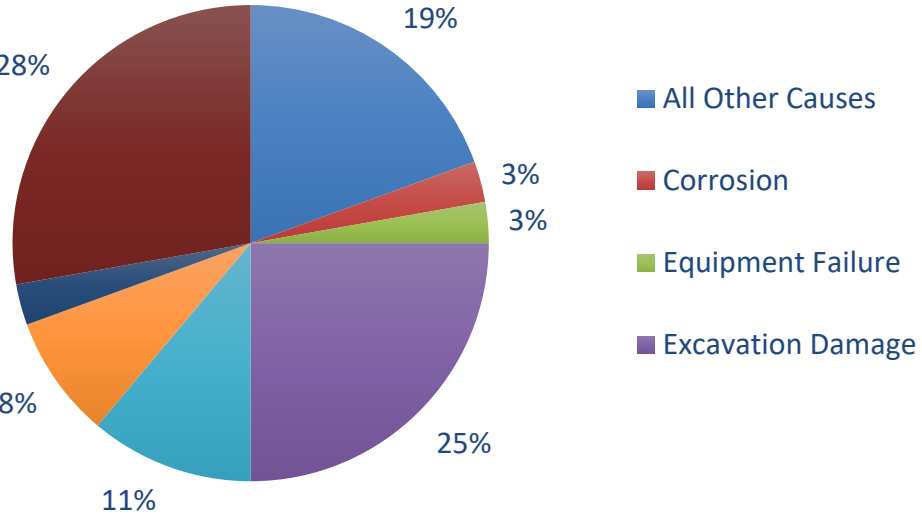


	Number of Order Issued														
Order Type	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Consent Order		2			2		14	7	5	2	4	5	2	7	4
Corrective Action Order	10	7	7	5	4	12	10	10	6	6	17	13	2	1	2
Decision on Petition for Reconsideration	6	6		5	15	8	6	8	5	2	1	2	2	1	7
Final Order	74	88	32	41	90	90	85	87	63	60	45	53	44	69	75
Order Directing Amendment	2	1		1	2	1	4	2	5	1	2	1	2	3	3
Safety Order							1	2	1			1			2
Grand Total	**92**	**104**	**39**	**52**	**113**	**111**	**120**	**116**	**85**	**71**	**69**	**75**	**52**	**81**	**93**

Serious Gas Distribution Incidents

CY 2018 Leading Causes

- Other outside force damage (vehicular damage)
- Excavation damage
- All other causes (under investigation)



Data accurate as of March 1, 2019

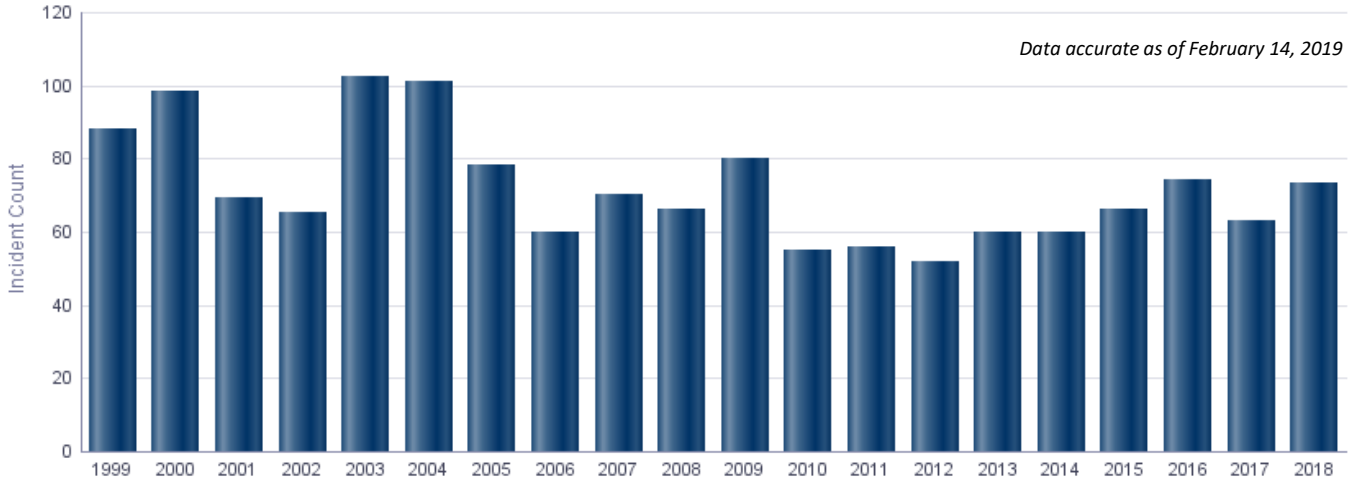
Gas Distribution Serious Incidents

Gas distribution incidents increased 44% from 2017 to 2018

As of February 14, 2019

Gas Distribution Significant Incidents

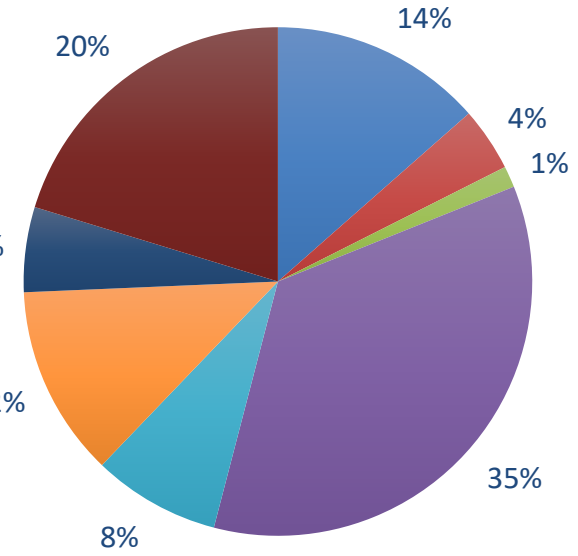
Increased by 16% from 2017 to 2018!



Significant Gas Distribution Incidents

CY 2018 Leading Causes

- Excavation damage
- Other outside force damage (vehicular damage and other)
- All other causes (under investigation)

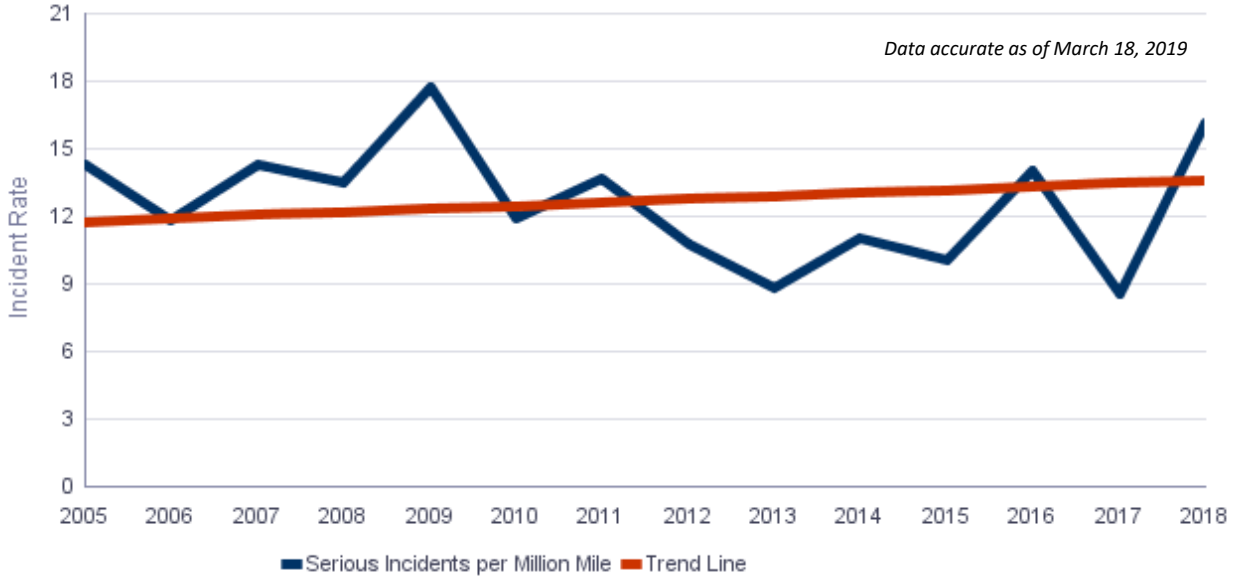


Data accurate as of March 1, 2019

Gas Distribution Serious Incidents per Million Miles

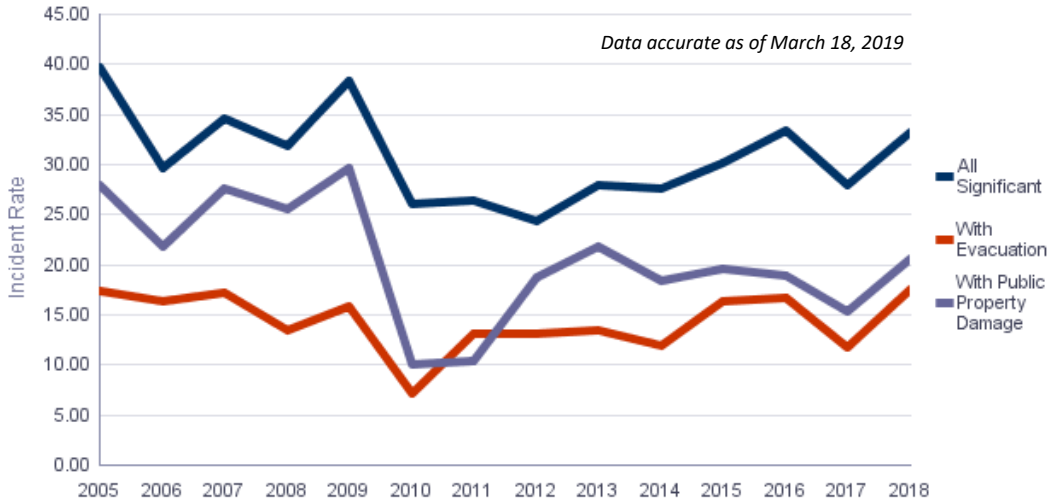
2005-2018

The rate has fluctuated since 2005, with an overall increase of 13%.



Gas Distribution Significant Incidents
per Million Miles
2005-2018

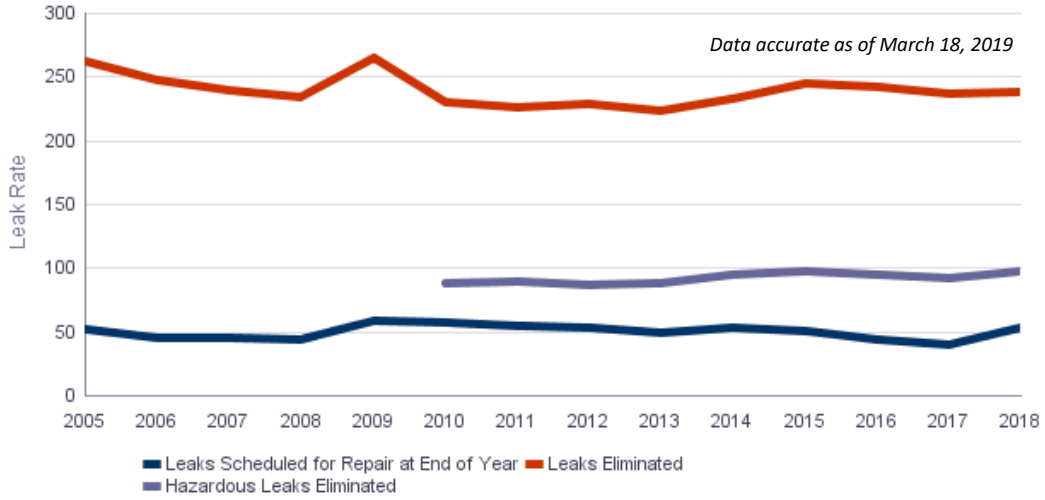
- All Significant rate has fluctuated since 2005, decreasing by 16%.
- With Evacuation increased by 1%.
- With Public Property Damage decreased by 26%.



Gas Distribution Leaks per 1,000 Miles

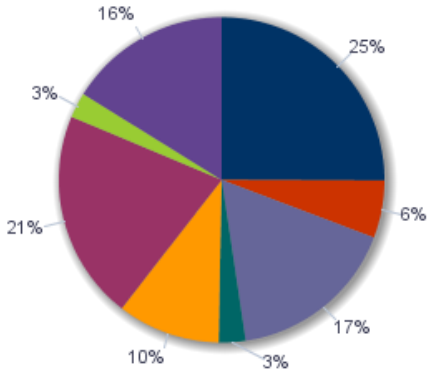
2005-2018

- The rate of hazardous leaks eliminated has increased by 10% since 2010.
  - The effective date for PHMSA's gas distribution integrity management (DIMP) regulations was 2011.
  - PHMSA expects an eventual rate decrease as pipeline operators identify integrity threats and implement measures to reduce risk.
- The rate for all leaks eliminated has decreased by 10% since 2005.
- The rate for leaks scheduled for repair at the end of the year has increased by 2% since 2005.

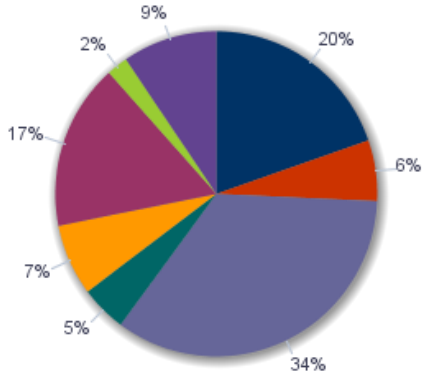


Gas Distribution Leaks
Eliminated by Cause
2005-2018

Leaks Eliminated



Hazardous Leaks Eliminated



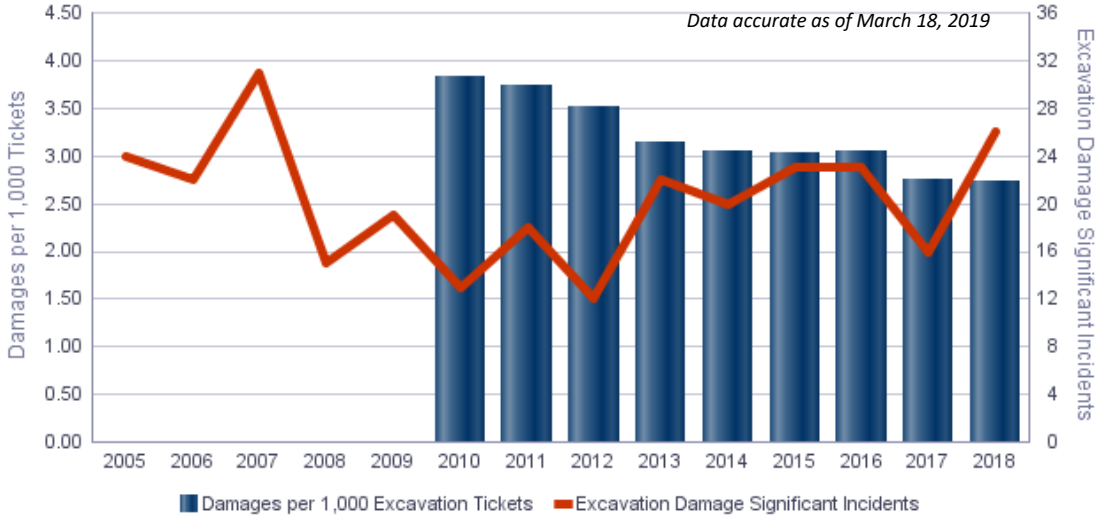
- Corrosion
- Natural Force Damage
- Excavation
- Other Outside Force Damage
- Materials/Welds
- Equipment
- Operations
- Other

Data accurate as of March 18, 2019

Excavation damage is the leading cause of hazardous leaks and accounts for 34% of hazardous leaks, but only 17% of leaks overall.

Gas Distribution Excavation Damage

2005-2018

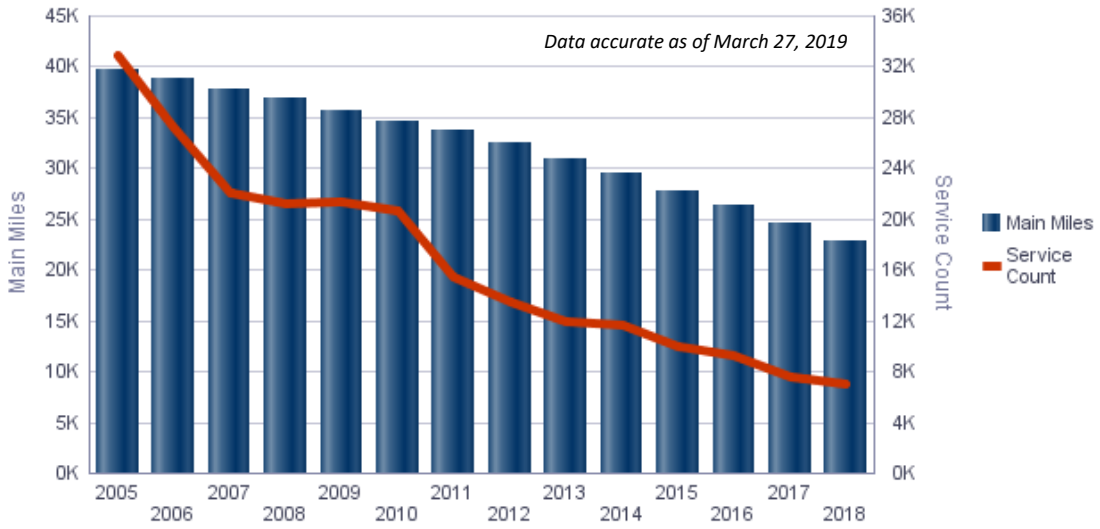


- The number of significant incidents caused by excavation damage has fluctuated since 2005 but increased 8% overall.
- Damages per 1,000 tickets have decreased by 29% since 2010.

Gas Distribution Cast & Wrought Iron

2005-2018

- Cast and wrought iron main miles have decreased by 42% since 2005.
- Cast iron mains make up 1% of all gas distribution main miles.
- Cast and wrought iron service lines have decreased by 79% since 2005.

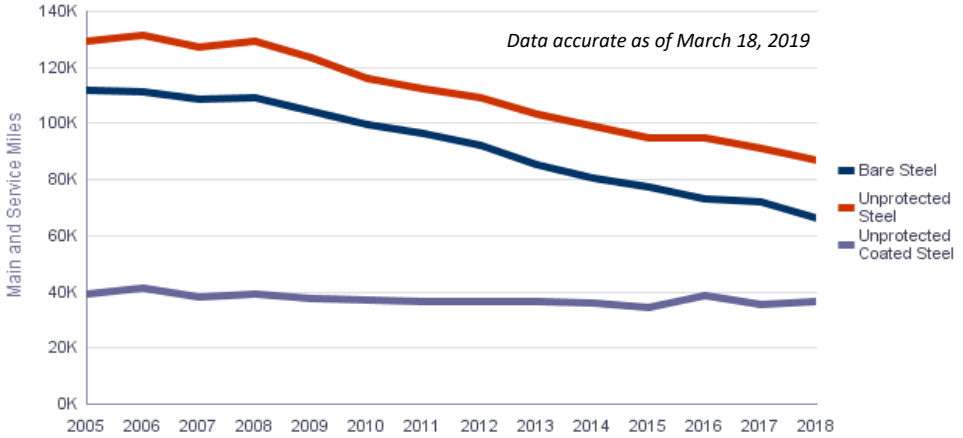


Gas Distribution Steel Miles

Bare and Unprotected

2005-2018

- Miles of bare steel have decreased by 40%.
  - 3% of gas distribution systems are bare steel.
- Miles of unprotected steel have decreased by 33%.
  - 4% of gas distribution systems are unprotected steel.
- Miles of unprotected coated steel have decreased by 7%.
  - 3% of gas distribution systems are unprotected coated steel.



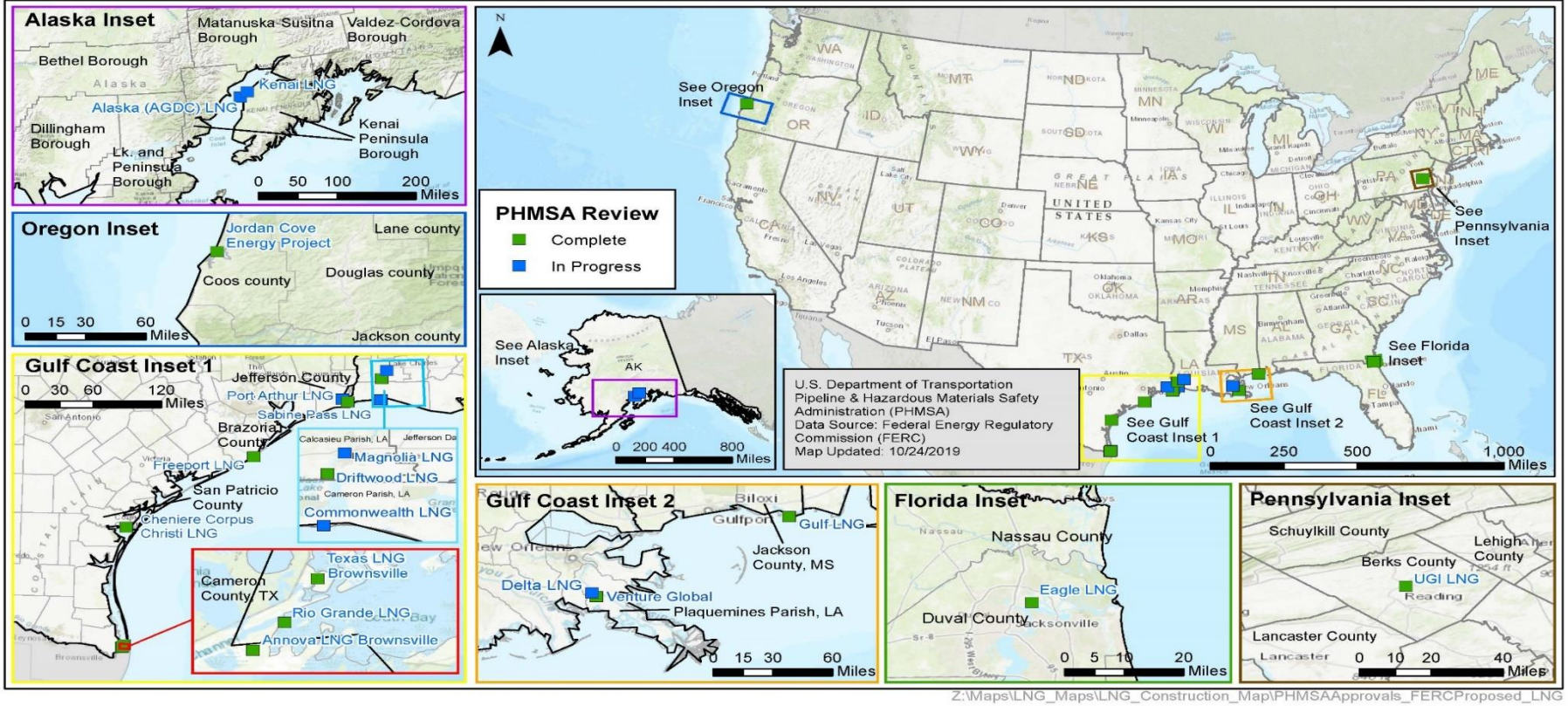
NTSB Releases Final Report on September 2018 Merrimack Valley, MA Accident

PHMSA's LNG Agenda

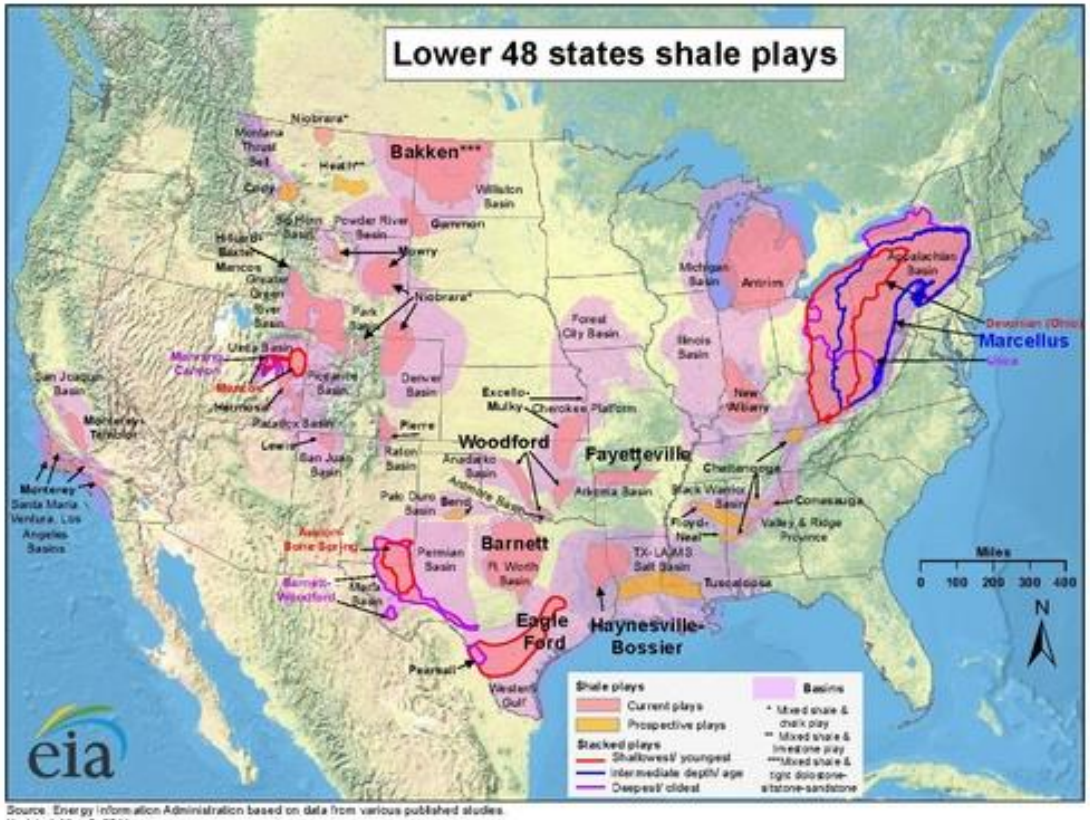
- Liquefied Natural Gas NPRM – Part 193 Update.
- LNG-By-Rail NPRM.
- August 31, 2018 FERC-PHMSA MOU Governing Siting Process for Interstate LNG Facilities.
- Executive Order 13868: Promoting Energy Infrastructure and Economic Growth (April 2019).
- PHMSA Issued 13 "Letters of Determination" to FERC regarding compliance with DOT siting and location standards.

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

PHMSA Review of FERC Jurisdictional LNG Facilities



Z:\Maps\LNG_Maps\LNG_Construction_Map\PHMSAApprovals_FERCProposed_LNG



Source: Energy Information Administration based on data from various published studies.
Updated: May 9, 2011

U.S. LNG Exports to 37 Countries

Reauthorization 2020

Administration Proposal	Congressional Proposals
Appropriations FY 2020-2024	Whistleblower Protection
Overpressure Protection/MOC/OQ for New Construction	Citizen Mandamus
Safety Incentives Program	LNG Center of Excellence
Voluntary Information Sharing	Regulatory Update
Underground Storage Fees	Self-disclosure of Violations
Property Damage Threshold ($118K)	Community Right-To-Know
LNG Siting Review Fees	Physical and Cyber Security
Pilot Programs	Methane Emissions
Criminal Trespass Standard	
Operating Status: Idle Pipelines	
State Program Requirements	
Pipeline Construction Data Collection	

FOIA Update

- Food Marketing Institute v. Argus Leader Media, 139 S. Ct. 2356 (2019) - the Supreme Court issued this opinion on June 24, 2019 addressing the meaning of the word "confidential" in Exemption 4 of the Freedom of Information Act, which overturned over forty years of precedent.

- No longer apply the "substantial competitive harm" test to determine whether information is "confidential" under Exemption 4.

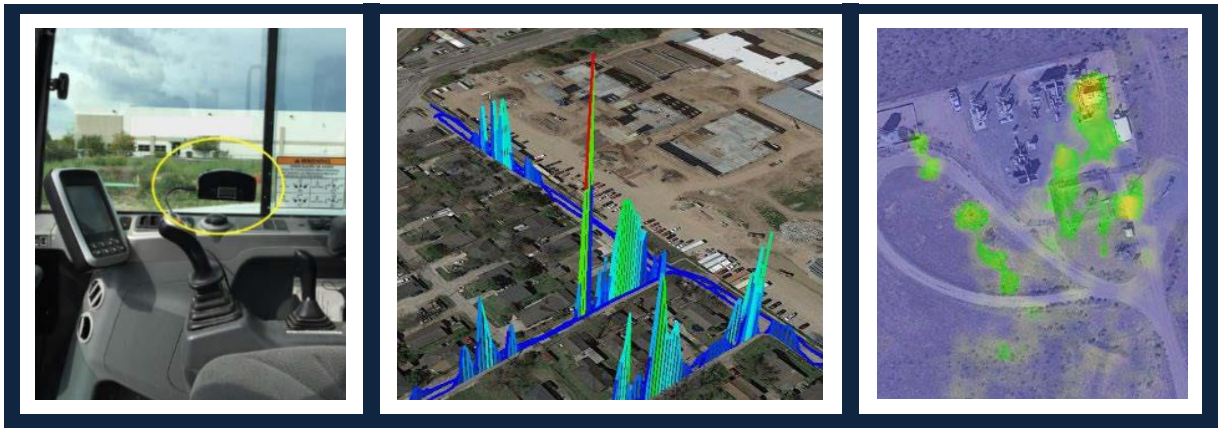
- Consider both: (1) whether the information is "customarily kept private, or at least closely held," by the submitter; and (2) whether the government provides "some assurance" that the information will not be publicly disclosed.

GPAC/LPAC meeting – November 14, 2019

- PHMSA has two Federal Advisory Committees:
  - Technical Pipeline Safety Standards Committee (a/k/a GPAC)
  - Technical Hazardous Liquid Pipeline Safety Committee (a/k/a LPAC)
- Function as peer review committees for all proposed safety standards
  - Technical feasibility
  - Reasonableness
  - Cost Effectiveness
  - Practicality
- "Shall prepare and submit" a Report to the Secretary
- Secretary not bound by Committee Reports
- Meet "at least up to 4 times annually"

PHMSA Awarded $94 Million in Grants to Promoted Emergency Preparedness, Training & Support, and R&D

- GPS-based Excavation Encroachment Notification
- Natural Gas Pipeline Leak Rate Measurement System
- Rapid Aerial Small Methane Leak Survey



Questions?

NARUC

2019 Annual Meeting and Education Conference

Committee On Gas