

NATURAL GAS

Fueling Families



Fueling Communities



Fueling America



NATURAL GAS

At A Glance

1+ Per Minute

More than one new residential customer signs up for natural gas service every minute on average, and approximately 60 businesses begin new natural gas service every day.

Families Choose Natural Gas

Consumers in moderate to cold climates prefer natural gas over electric heat pumps by a ratio of 5 to 1.

\$1,132

Households that use natural gas for heating, cooking and clothes drying save an average of \$1,132 per year compared to homes using electricity for those applications.

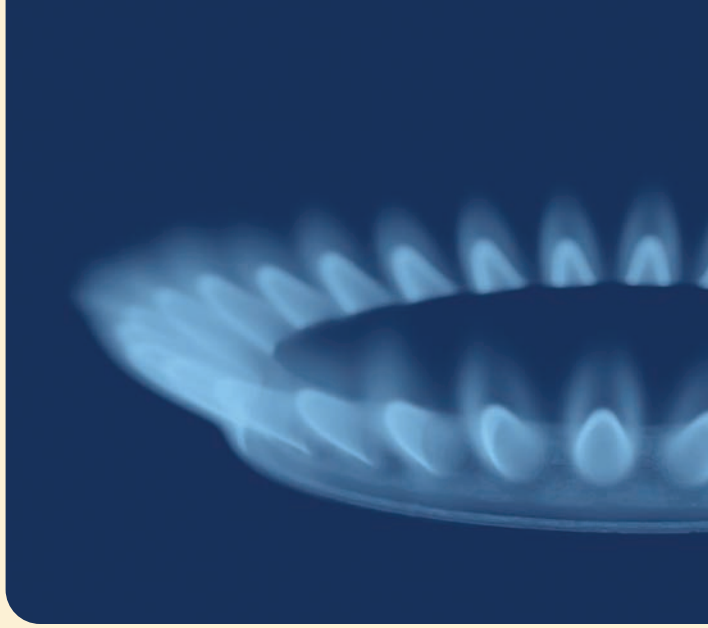
\$37B

America's natural gas utilities invest \$37 billion each year in enhancing the safety of natural gas distribution and transmission systems.

↓ 70%

Emissions from the natural gas distribution system have declined 70% since 1990. Natural gas and its delivery systems will play a crucial role in helping the U.S. reach a net-zero emissions future.





More than 189 million Americans and 5.8 million businesses use natural gas because it is affordable, reliable, safe and essential to improving our environment.

The American Gas Association is committed to reducing greenhouse gas emissions through smart innovation, new and modernized infrastructure, and advanced technologies that maintain reliable, resilient and affordable energy service choices for consumers.





A MESSAGE FROM THE AGA

Chair of the Board

The versatility and accessibility of natural gas safeguards it as an essential, reliable and safe energy source for the demands of today and for generations to come. The abundant supply of natural gas within our borders ensures that our industry is well positioned to independently power our country's innovative and economic pursuits.

Lloyd Yates

PRESIDENT AND CEO, NISOURCE INC.
CHAIR, AMERICAN GAS ASSOCIATION



A MESSAGE FROM THE AGA

Chief Executive Officer

The natural gas industry has been a leader in helping our nation advance our energy and environmental goals, delivering solutions to some of America's biggest challenges at home and abroad. Exciting technologies like hydrogen and renewable natural gas offer new opportunities for the industry while we continue to invest in affordable and reliable natural gas. We are proud that America's abundant natural gas and our vast delivery system provides the most affordable way for our customers to heat their homes, do their laundry and feed their families. As a result, it is no surprise that Americans with access to natural gas choose it. With the rise of new industries and technologies, America's natural gas industry will be there every step of the way. At AGA, we are committed to fueling America as we advance toward a more secure and cleaner future.

Karen A. Harbert

PRESIDENT AND CEO,
AMERICAN GAS ASSOCIATION

The Benefits

OF THE GAS SYSTEM

Affordable

American Families Use Natural Gas Because it is Affordable

Households that use natural gas for heating, cooking and clothes drying save an average of \$1,132 per year compared to homes using electricity for those applications.

Environment

Proven Emissions Reduction Track Record

Natural gas utilities are cutting emissions from their operations, helping customers shrink their carbon footprints and working with other industries to reduce their environmental impact.

Reliable

Natural Gas is There When You Need It Most

Through natural disasters and extreme weather events, the industry's underground delivery system provides reliable energy Americans can count on.

Innovative

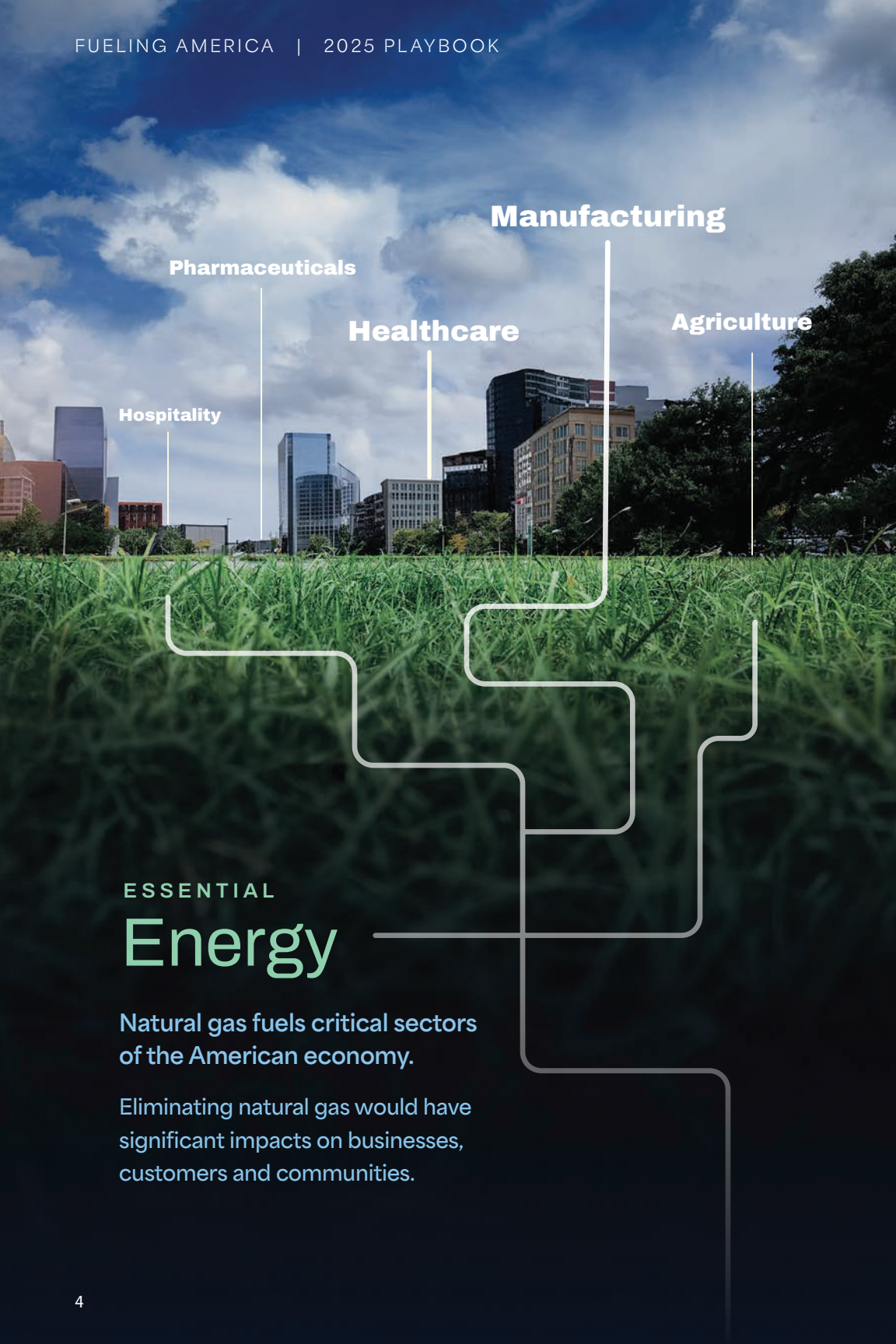
Ambitious Innovation Agenda

The promise of integrating high-value energy sources, such as renewable natural gas and hydrogen, is a critical component of our nation's ability to reach ambitious greenhouse gas reduction goals.

Safe

Safety is Our Top Priority

America's natural gas utilities invest \$37 billion each year in enhancing the safety of natural gas distribution and transmission systems.



Natural gas fuels critical sectors of the American economy.

Eliminating natural gas would have significant impacts on businesses, customers and communities.

NATURAL GAS

Fuels American Manufacturing

A study from the Center for Strategic and International Studies, with support from the American Gas Foundation, demonstrates the role of natural gas in maintaining energy security and the competitiveness of U.S. manufacturing along pathways to a low-carbon economy, especially as energy demand continues to rise.

"To effectively and successfully compete on the global economic stage when facing countries like China – and others – the U.S. must deploy all of its advantages, including our energy advantage."

Karen A. Harbert

PRESIDENT AND CEO,
AMERICAN GAS ASSOCIATION

[SEE THE STUDY](#)

www.gasfoundation.org





NATURAL GAS

Lowering the Cost of Medicine

At one-third the price of electricity, natural gas helps keep America's drug costs more affordable, ensuring that necessary prescriptions and products are accessible to those who need them most.

The pharmaceutical manufacturing supply chain consumes approximately the same amount of natural gas delivered to the state of Missouri with a population of more than **6.1 million**.

CRITICAL FEEDSTOCK

Natural gas is a critical feedstock for producing active pharmaceutical ingredients, as well as plastic packaging and bottles for final products.

FUELING MANUFACTURING

Pharmaceutical manufacturing facilities use natural gas to maintain stable heating and temperature control, a critical factor in storing pharmaceuticals.

NATURAL GAS FUELS

America's Healthcare

The U.S. healthcare sector consumes more than 271 billion cubic feet of natural gas, more than the annual consumption of 14 individual states.

RELIABLE ENERGY

74%

74% of U.S. hospitals use natural gas for space heating and water heating.

Without Natural Gas? HIGHER COSTS FOR PATIENTS

↑ \$16.3B

The cost of mandated electrification for the healthcare sector would total \$16.3 billion through 2050.

THE HEALTHCARE SECTOR IN THE U.S. SUPPORTS

17.5M

DIRECT JOBS

7M

INDIRECT JOBS

12.4M

INDUCED JOBS



America's Hospitality Sector

DEPENDS ON NATURAL GAS

Natural gas supports restaurants, lodging and amusement parks nationwide. The U.S. hospitality sector and its supply chain consume 387 Bcf of natural gas per year.



Without Natural Gas?

HIGHER COSTS FOR BUSINESSES

↑ **\$23.2B**

Mandated electrification in the hospitality sector would increase fuel expenditures \$23.2 billion through 2050, threatening an industry that supports nearly 16.9% of all U.S. jobs.

NATURAL GAS CONSUMPTION

Texas, California and
New York consume the
most natural gas for the
hospitality industry.

Growing, Fertilizing, Feeding

The availability of affordable natural gas — an important feedstock for many key agricultural inputs — has directly benefited the U.S. agriculture sector. Those benefits extend to farms, ranches and beyond through jobs and tax revenue.

Benefits Through Tax Revenue

\$225B

IN FEDERAL, STATE AND
LOCAL TAX REVENUES

Benefits Through Jobs

5M

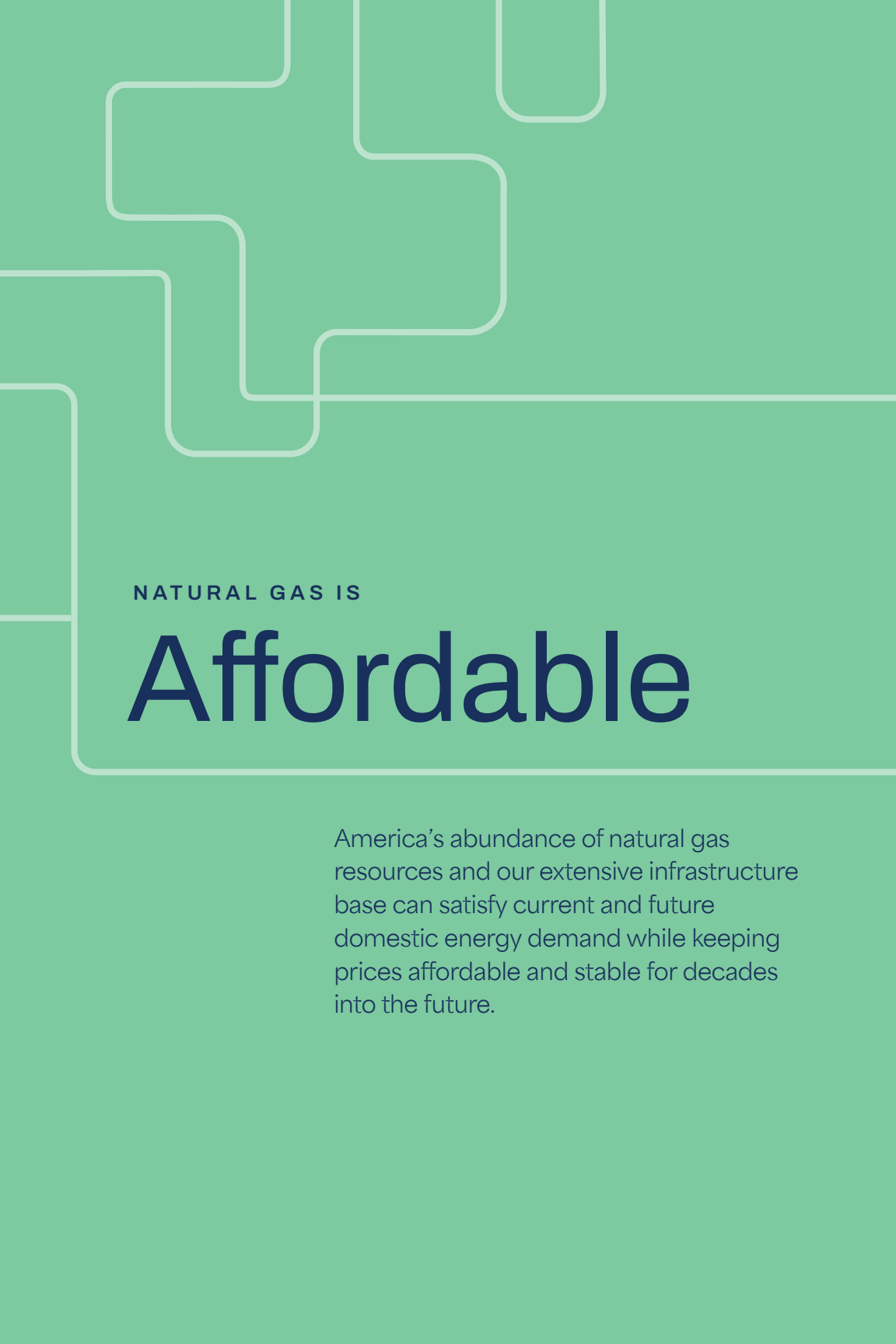
DIRECT U.S. AGRICULTURE JOBS

The U.S. agriculture sector and its suppliers make up almost 15% of all U.S. commercial and industrial consumption, making it one of the largest consumers of natural gas.

Without Natural Gas?

Natural gas helps the U.S. economy produce agrochemicals like fertilizer, which increases crop yields. The U.S. agriculture sector would be in a precarious position if it were to lose access to natural gas.





NATURAL GAS IS

Affordable

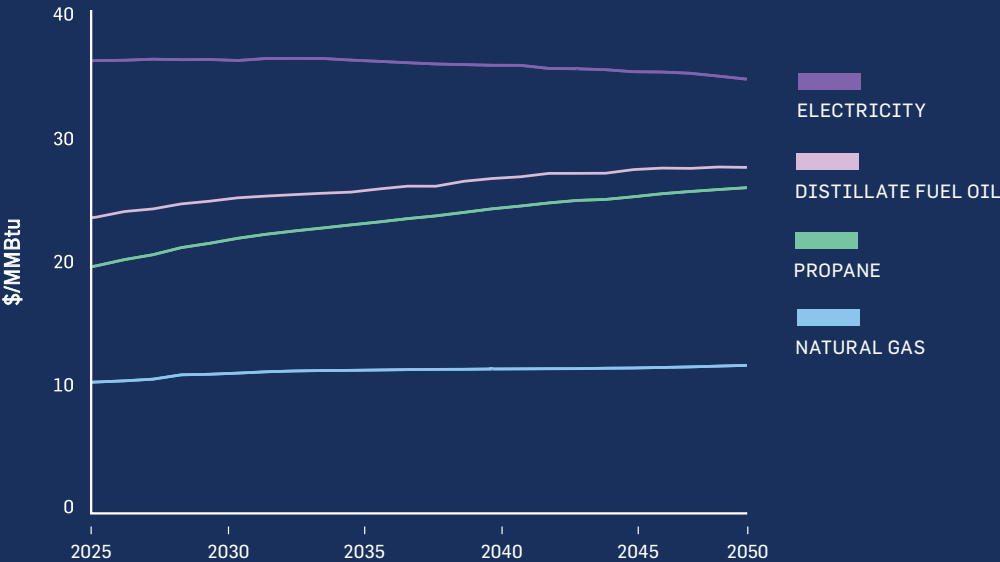
America's abundance of natural gas resources and our extensive infrastructure base can satisfy current and future domestic energy demand while keeping prices affordable and stable for decades into the future.

NATURAL GAS IS

Stable

Natural gas is projected to be 1/2 to 1/3 the price of other fuels through 2050.

RESIDENTIAL PRICES BY FUEL (2025 – 2050)



Natural gas has more consistent month-to-month energy costs compared to an equivalent all-electric home, offering homeowners further financial security.

Projected Cost

Natural gas will cost significantly less than electricity for the next 30 years.

3.5x More Affordable Than Electricity

Natural gas is 3.5 times more affordable than electricity and significantly more affordable than several other residential energy sources for the same amount of energy delivered.



NATURAL GAS

Savings

Households that use natural gas for heating, cooking and clothes drying save an average of \$1,132 per year compared to homes using electricity for those applications.

BUSINESSES SAVE

\$500B+

Commercial and industrial customers have saved more than half a trillion dollars over the last decade by using natural gas.

FAMILIES SAVE

\$125B

The low cost of natural gas has saved families a total of \$125 billion over 10 years.



Right Now

Somewhere in the U.S., a home or business is signing up for natural gas service.

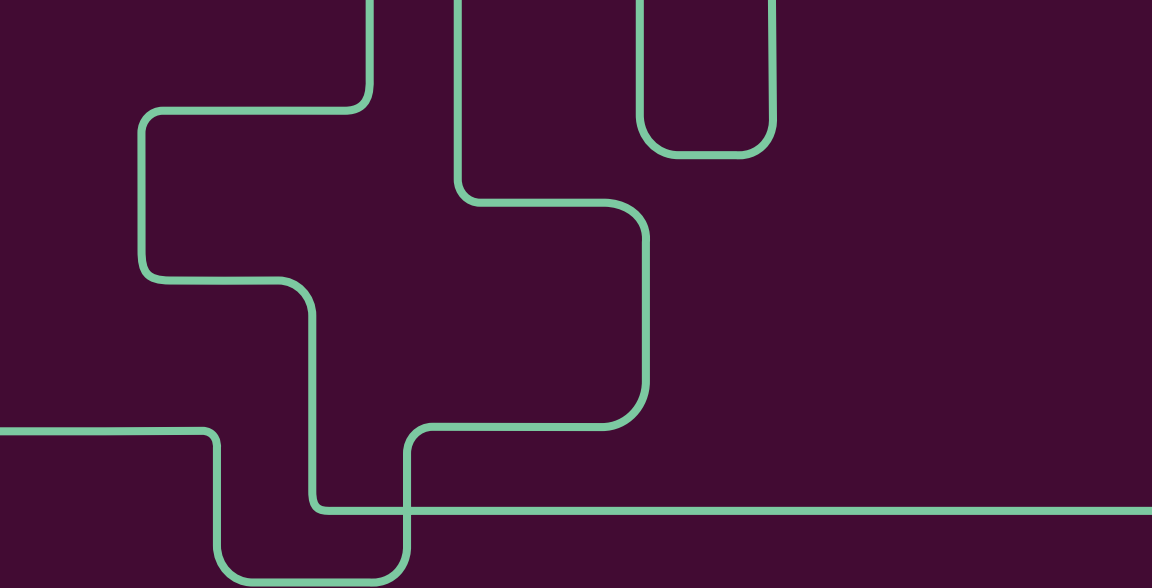
THOUSANDS OF BUSINESSES

21,000

More than 21,000 businesses sign up to use natural gas each year.

1+ Per Minute

More than one new residential customer signs up for natural gas service every minute on average, and approximately 60 businesses begin new natural gas service every day.



NATURAL GAS IS

Reliable

A resilient energy system is essential to the operation of nearly every critical function and sector of the U.S. economy.

75% of adults view natural gas as the most reliable way to heat their home, cook meals and help their families complete household chores.

Stability

The natural gas system's physical characteristics provide stability to the energy system.



Pipeline infrastructure is predominantly underground, looped and shielded from many major disruptive events.



Much of the natural gas delivery system runs on its own supply.



The ability to store more gas further strengthens the self-reliant attributes of the gas system.

On the coldest day of the year, the natural gas system delivers 3X more energy than the electric system delivers on the hottest day of the year.





When They Need It Most

Natural gas provides safe and reliable service to customers with few interruptions.

76% of adults using natural gas in their home are confident that their natural gas service and systems can withstand a severe weather event.

Industry Coming Together

Third-party excavation damage caused the unplanned outage of 37,000 customers of Avista Utilities in eastern Washington. Through the support of the **AGA Mutual Assistance Program**, all customers had their gas service restored within one week.

AGA hosted the inaugural **Natural Gas Readiness Forum** in December, fostering operational education, situational awareness and peer-to-peer connections across the entire natural gas industry, electric sector, federal and state governments, and end-users.



Energy You Can Depend On

Only 1 in 650 customers is expected to experience a planned or unplanned natural gas outage in any given year.

86%

86% of adults using natural gas in their home rely on it to keep their families warm during the winter.



Electric distribution systems have an average of one outage per year per customer.

A RELIABLE

Investment

“Investors choose to invest in utilities because they provide a stable revenue stream accompanied by the low-risk level inherent to the business. Over the past two years, investors increasingly recognized the value of natural gas and related infrastructure to provide affordability, resilience and energy security for decades to come.”

Juan Alvarado

MANAGING DIRECTOR,
ENERGY ANALYSIS, AGA

A new and updated report by the American Gas Association and the Canadian Gas Association shows that investor sentiment towards North American natural gas utilities has risen in recent years. Investors view natural gas utilities as attractive investments for maintaining stability in their portfolios while supplying a reliable and predictable return on equity (ROE).

[SEE THE STUDY](#)

www.aga.org/investment

“We think most utilities deserve premium valuations compared with historical averages, given their better growth prospects, improving rate regulation and less volatile earnings.”

MORNINGSTAR, 7/6/2023

The natural gas delivery system is
92% efficient from production to customer.



NATURAL GAS IS

Safe

87% of adults using
natural gas in their home
trust their service to heat
their home safely.

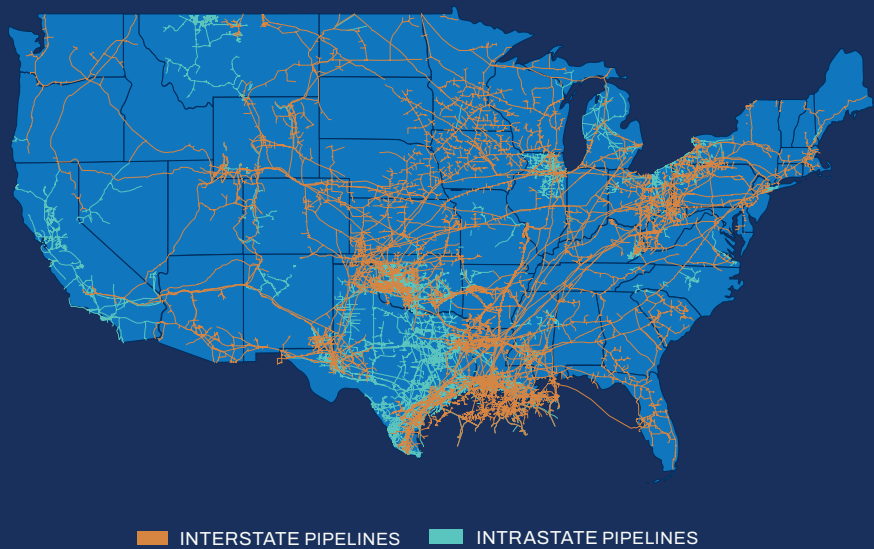


THE SAFEST WAY TO

Deliver Energy

Natural gas is delivered to customers through a 2.8-million-mile underground pipeline system. This includes approximately 2.4 million miles of local utility distribution pipelines and 400,000 miles of gathering and transmission pipelines that stretch across the country.

Our Energy Foundation



\$37B

America's natural gas utilities invest \$37 billion each year in enhancing the safety of natural gas distribution and transmission systems.

AGA's PSMS Workshop has been held annually since 2015.



IMPROVING PIPELINE

Safety

Pipeline Safety Management Systems (PSMS) includes the identification, prevention and remediation of safety hazards.

At the heart of PSMS is a culture of safety, risk awareness and mitigation, the sharing of lessons learned and consistent self-evaluation. By cultivating pipeline safety practices at a systems level, PSMS helps organizations identify potential hazards and address them before accidents occur. PSMS manages pipeline safety through continuous monitoring and improvement and its “Plan-Do-Check-Act” cycle.



THE ENHANCED

Peer Review Program

- Operational Controls, Procedures, System Controls and Management of Change (MOC)
- Management Review and Continuous Improvement, Documentation and Record Keeping
- Safety Assurance: Audits, Evaluations, Audit and Evaluation Review/Closure, and Performance Measurement

148 PEER
REVIEWS

Since the national program began in 2015, AGA has administered 148 peer reviews and virtual assessments for member companies on 355 different topics and engaged with more than 1,700 subject matter experts.

ACHIEVING EXCELLENCE

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'S

Commitment

TO CYBER AND PHYSICAL SECURITY

Our commitment to cyber and physical security was developed and adopted to demonstrate dedication to ensuring that natural gas pipeline infrastructure remains resilient to growing and dynamic cyber and physical security threats.

SECURITY THROUGH THREAT SHARING AND ANALYSIS

The Downstream Natural Gas Information Sharing and Analysis Center (DNG-ISAC) is the premiere cyber and physical threat sharing and analysis organization for the natural gas industry in the U.S. and Canada. DNG-ISAC facilitates situational awareness and threat communication between operators and with the federal government.

CONTINUOUS IMPROVEMENT

The Peer Cyber Review Program allows AGA member utilities to consult with peer utility cyber subject matter experts and walk through a comprehensive AGA-developed assessment that aligns with Transportation Safety Administration (TSA) Pipeline Security Guidelines.





Natural Gas Exercise (NGX)

In 2024, AGA hosted the second NGX, a nationwide tabletop drill focused on natural gas distribution and transmission cybersecurity, physical security and business continuity.

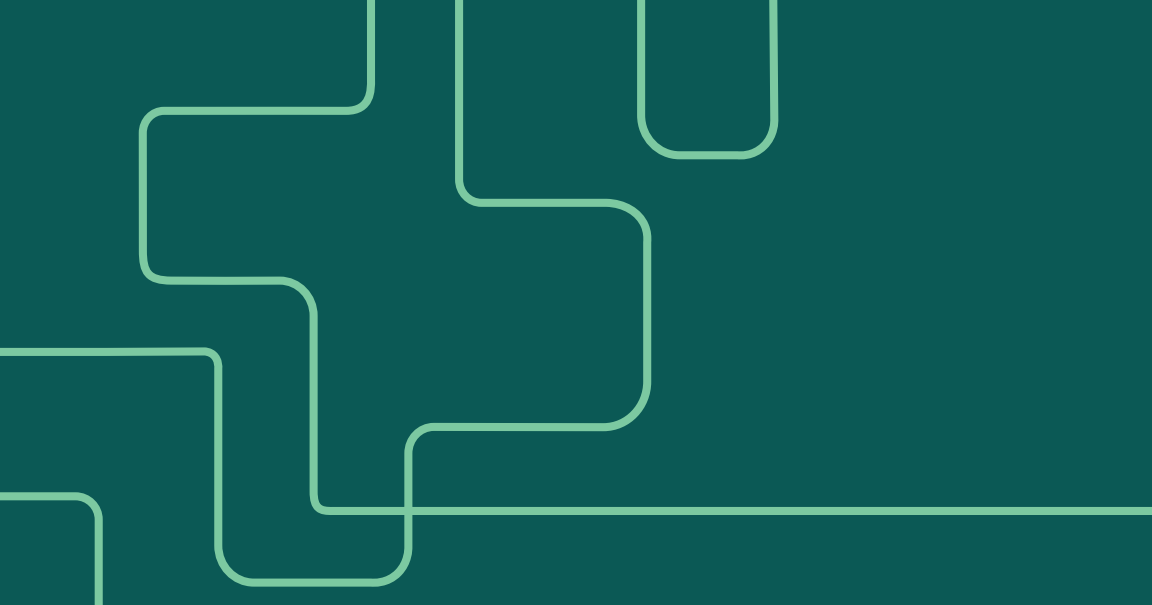
Nearly 250 industry and government professionals representing 50 natural gas utilities, transmission companies, and federal and state government agencies from across the United States and Canada participated in the event.

INCIDENT PREPAREDNESS

The goal of the exercise is to plan and prepare for a cyber or physical event.

WORKING TOGETHER

Participants represent all parts of the natural gas value chain and the federal government.

Abstract geometric lines in the top left corner, consisting of several interconnected, rounded rectangular shapes in a light green color, creating a modern, architectural feel.

NATURAL GAS
ESSENTIAL FOR IMPROVING OUR

Environment

A single horizontal line in a light green color spanning the width of the page, positioned just below the word "Environment".

Emissions

REDUCTION OPPORTUNITIES

AGA's comprehensive and detailed analysis demonstrates that incorporating gas technologies, infrastructure and strategies is an essential part of continuing to reduce CO₂ and methane emissions.

The Path Forward



Energy Efficiency and Improved Energy Management



Advanced Gas End-use Technologies



Renewable Gases



Methane Mitigation Technologies and Strategies



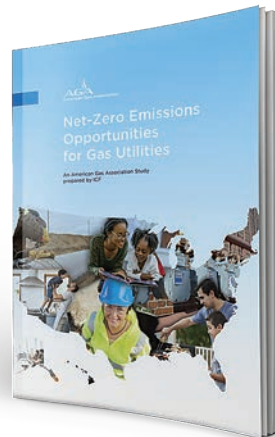
Negative Emissions Technologies



Infrastructure Modernization



Workforce Development



SEE THE STUDY

www.aga.org/netzero

Upgrading our nation's pipeline network to enhance safety has contributed significantly to a declining trend in emissions.

70%

Emissions from the natural gas distribution system have declined 70% since 1990.

AS LITTLE AS

0.1%

Local distribution systems release as little as 0.1% of the natural gas they deliver.

3.5X

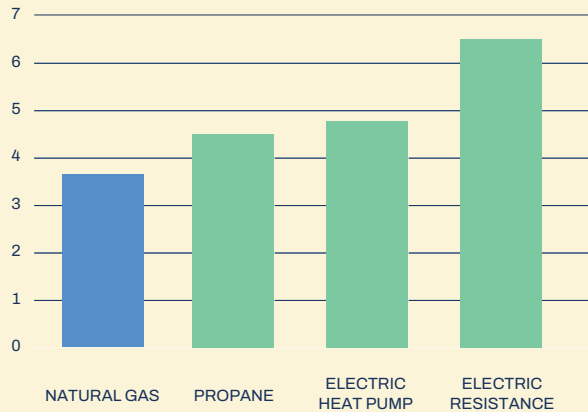
INCREASE SINCE 1990

Since 1990, the miles of natural gas mains made of more modern materials has more than tripled.





Greenhouse Gas Emissions from Home Energy Use
(Metric Tons CO₂e per Year)



Whole-home emissions based on Energy Star-rated equipment where applicable for heating, water, cooking and drying.

Cleaner Heating

28% LOWER EMISSIONS

An Energy Star natural gas household could have a carbon footprint that is 16% lower than an Energy Star heat pump and 28% lower emissions compared to an electrical resistance furnace.

40% LOWER EMISSIONS

Efficient natural gas equipment is expected to cut home greenhouse gas emissions by 40% by 2040.

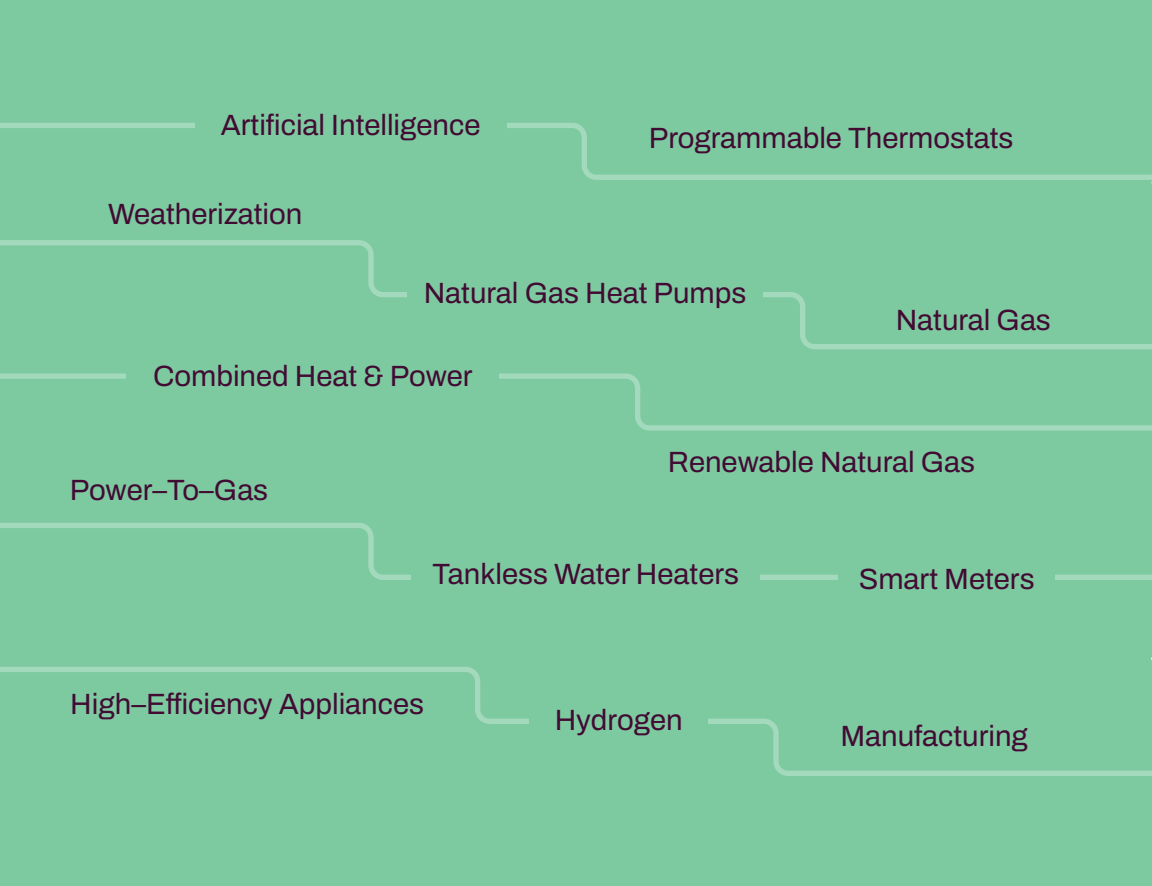
MORE FAMILIES HEAT WITH NATURAL GAS

For the last five years, more than 500,000 families have signed up for natural gas space heating, rather than electric heat pumps.



NATURAL GAS IS
ADVANCING THROUGH SMART

Innovation



America’s natural gas utilities are committed to reducing greenhouse gas emissions through smart innovation.

REDUCTION

61% EMISSIONS REDUCTION

Emissions from the power sector have declined 61% due to increased use of natural gas for electricity generation.

EFFICIENCY

40 YEAR LOWS

Natural gas efficiency and the growth of renewable energy have led to energy-related carbon dioxide emissions hitting 40-year lows.



INVESTING IN EFFICIENCY

\$4.1M PER DAY

Natural gas utilities invest \$4.1 million per day in energy efficiency programs to help customers install tighter-fitting windows and doors, upgrade insulation and purchase increasingly more efficient natural gas appliances.

Natural gas utilities saved 1.7 million metric tons of greenhouse gas emissions through energy efficiency programs in 2022.

REDUCING THE CARBON FOOTPRINT

1.3%

DECLINE IN CARBON EMISSIONS

Carbon emissions from the average home using natural gas decline 1.3% per year.



AGA'S CLIMATE CHANGE

Position Statement

The American Gas Association is committed to **reducing greenhouse gas emissions** through smart innovation, new and modernized infrastructure, and advanced technologies that maintain reliable, resilient and affordable energy service choices for customers.

PRINCIPLED POLICY

8 PRINCIPLES FOR EFFECTIVE NATIONAL POLICY

AGA proposed eight principles for an effective national policy approach to reducing greenhouse gas emissions and addressing climate change.

COMMITMENT

10 COMMITMENTS TO REDUCE EMISSIONS

Natural gas utilities have made 10 commitments to further reduce methane emissions from natural gas utility systems.

VISIT

www.aga.org/climate



RENEWABLE

Natural Gas

Renewable Natural Gas (RNG) is pipeline-compatible gaseous fuel derived from biogenic or other renewable sources that has lower lifecycle carbon dioxide equivalent emissions than geological natural gas.

RNG can be produced from various waste streams including farms, landfills and water resource recovery facilities or from renewable electricity.

RNG is carbon neutral, versatile and fully compatible with the U.S. pipeline system, so it can lower emissions in homes, businesses and heavy industries, such as manufacturing.

Utilities throughout the country are starting to offer RNG to their customers as another option to lower household emissions.



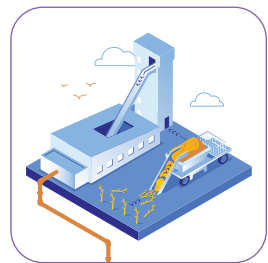
POWER TO GAS

Renewable electricity is used to split water into hydrogen and oxygen through a process called electrolysis. This renewable hydrogen can be blended into the pipeline or combined with CO₂ to create RNG.



ANAEROBIC DIGESTION

The most common way to produce RNG today, organic material such as animal or plant waste is broken down by microorganisms creating methane.



THERMAL GASIFICATION

Low moisture biomass such as forestry waste or crop residue is converted into RNG through a high-pressure chemical process.



O

CARBON EMISSIONS

Hydrogen does not create any carbon emissions when it's used for energy. The only byproduct is water vapor.

The U.S. possesses the most extensive gas pipeline delivery network in the world, and extensive research and testing is underway now to make leveraging this infrastructure to deliver **clean hydrogen (H₂)** in the future a reality. Gas utilities are connecting hydrogen production to end users nationwide.



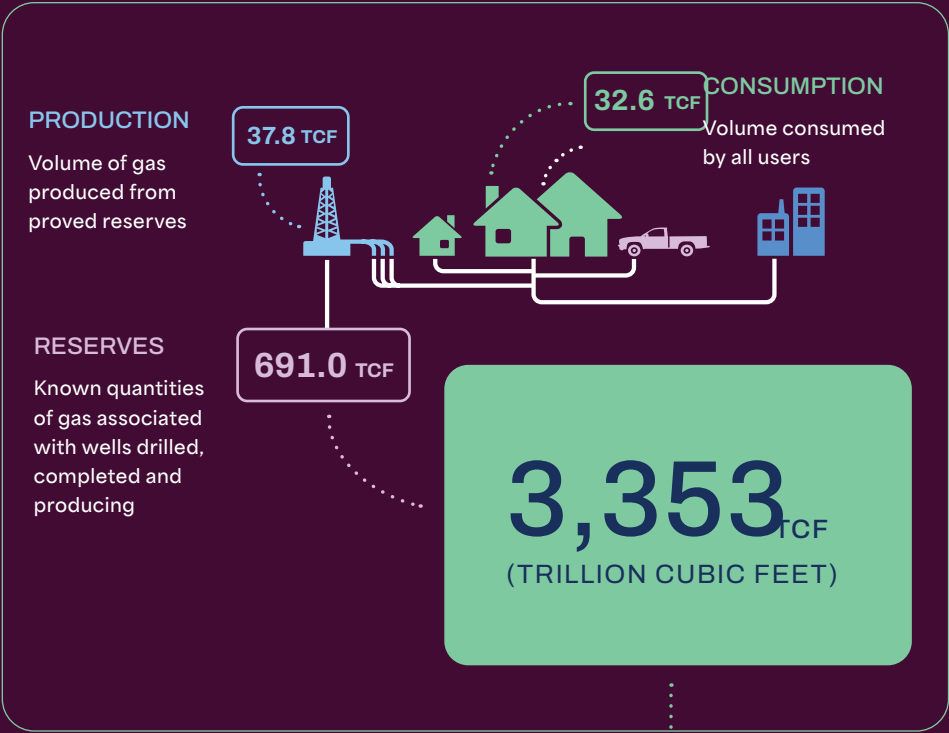
Natural gas infrastructure can play a key role in connecting H₂ production and supply to demand centers and customers. Continued utilization of gas infrastructure, existing and purpose-built, can increase the likelihood of successfully reaching decarbonization goals.



NATURAL GAS

Data

MORE THAN
100 Years of Supply



ABUNDANT SUPPLY AND
VAST INFRASTRUCTURE

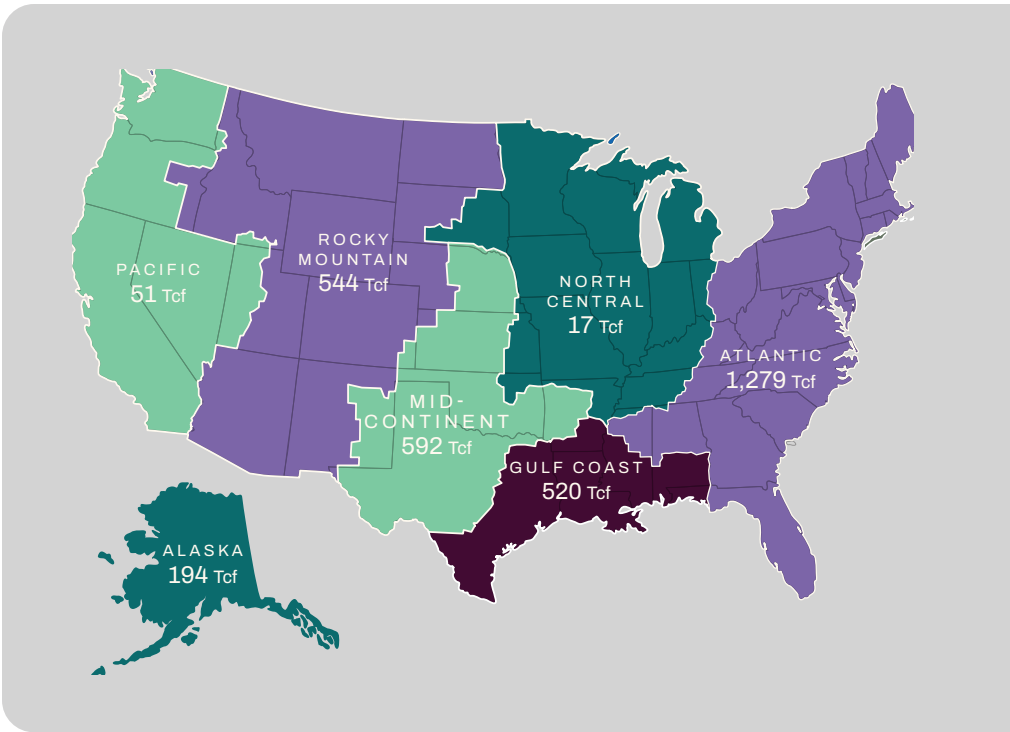
With 3,353 trillion cubic feet of natural gas and 2.8 million miles of pipelines, natural gas is available where you need it, when you need it.

REGIONAL NATURAL GAS

Resource Assessment

3,353 TRILLION CUBIC FEET

The United States has 3,353 trillion cubic feet of technically recoverable natural gas resources.



** Total numbers, listed in trillion cubic feet (Tcf), account for traditional, coalbed and offshore natural gas resources.*

GROWING EXPORT CAPACITY

25B CUBIC FT
PER DAY

The U.S. is on track to reach LNG export capacity of 25.2 billion cubic feet of natural gas per day by 2028*.

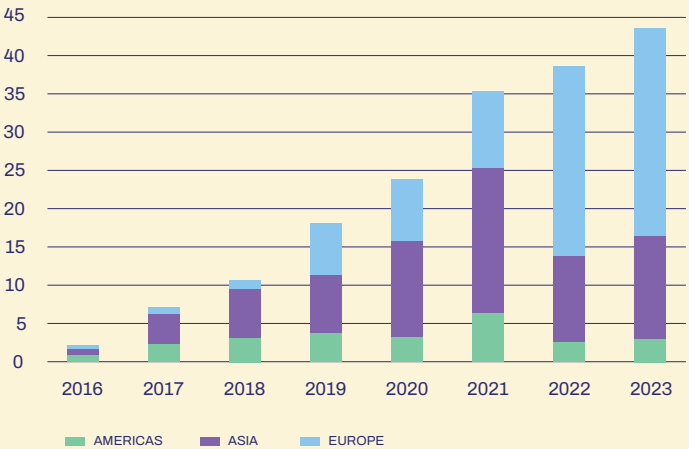
**U.S. European price differential for the year and/or future*

GLOBAL ABUNDANCE

Liquefied natural gas (LNG) has become the bedrock for European gas supplies, and the U.S. is playing an outsized role in serving that demand.



Liquefied Natural Gas Exports (TCF)



AMERICA'S

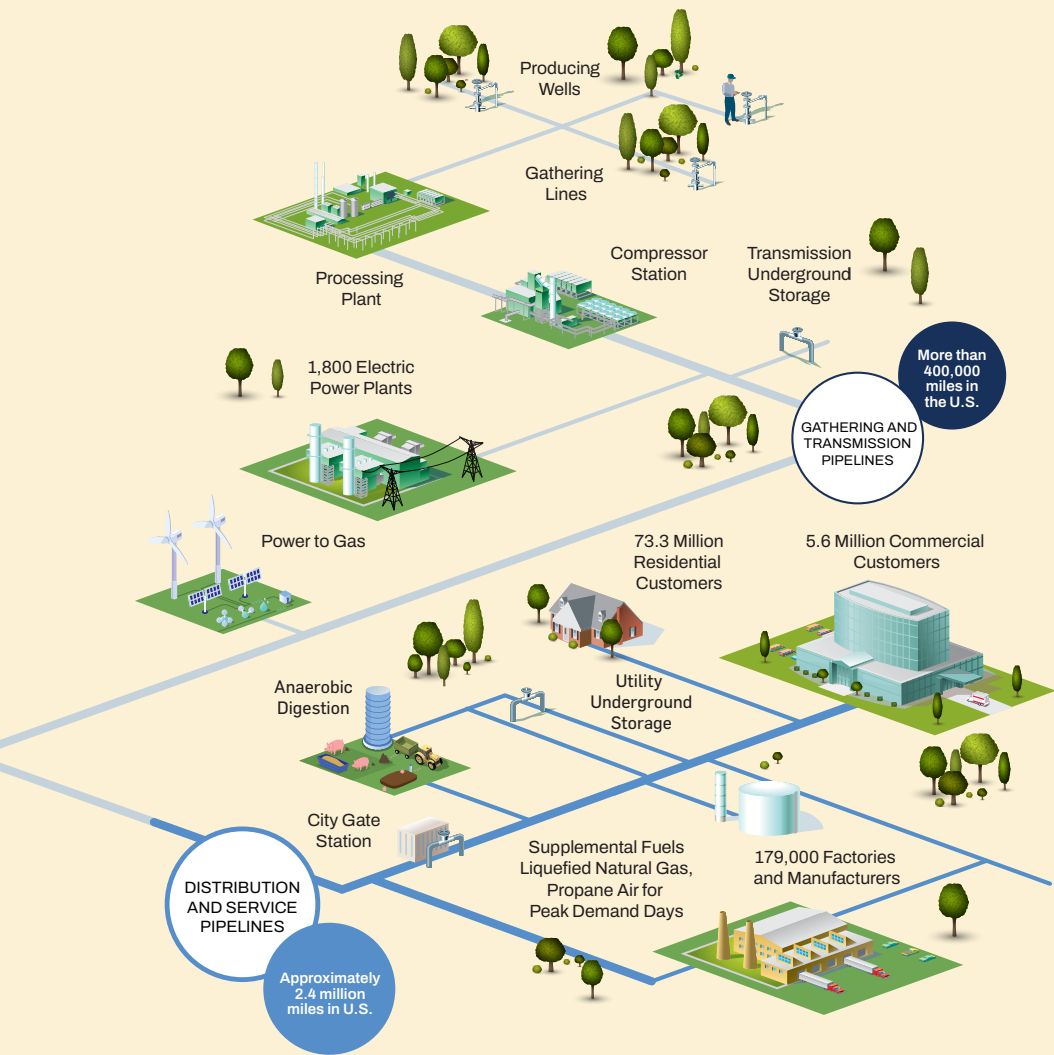
Strength

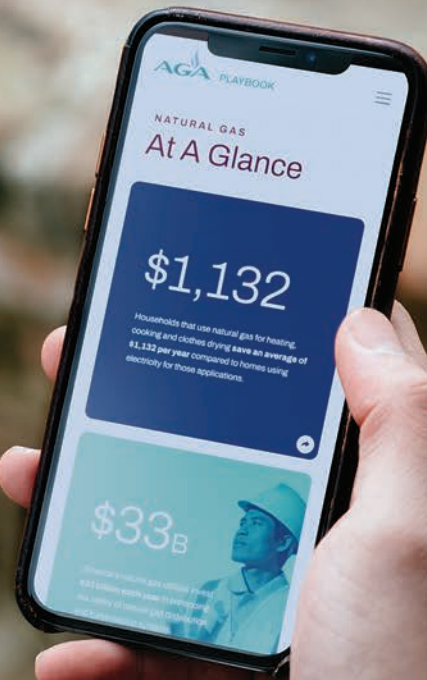
Global exports of LNG increased in 2023. The U.S. alone exported more LNG than in any prior year, helping support the growing energy demand in Europe.

The U.S. leads the world in LNG exports, ensuring America and the world's energy security.

NATURAL GAS

Delivery System





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The AGA Playbook is digital.
playbook.aga.org

