

WHY NATURAL GAS IS A PART OF OUR CLEAN ENERGY FUTURE

Natural Gas is a...



GREEN ENERGY CHOICE **I**NDEPENDENT ENERGY CHOICE **L**OW-COST ENERGY CHOICE **D**EPENDABLE ENERGY CHOICE

SUPPLERSGILD.ORG/NATURALGAS

NATURAL GAS FAST FACTS

- Households that use natural gas for heating, cooking and clothes drying **save an average of \$879 per year** compared to homes using electricity for those applications.
- Carbon emissions from the average natural gas home **decline 1.2 percent** per year.
- Nearly **21,000 businesses** sign up to use natural gas each year.
- More than **4.1 million jobs** are connected to the natural gas industry.
- Increased use of natural gas is the single largest factor in power sector emissions reductions reaching **27-year lows**.

Source: AGA Playbook 2021



Natural gas utilities
add one new customer
every minute



Natural Gas is a...

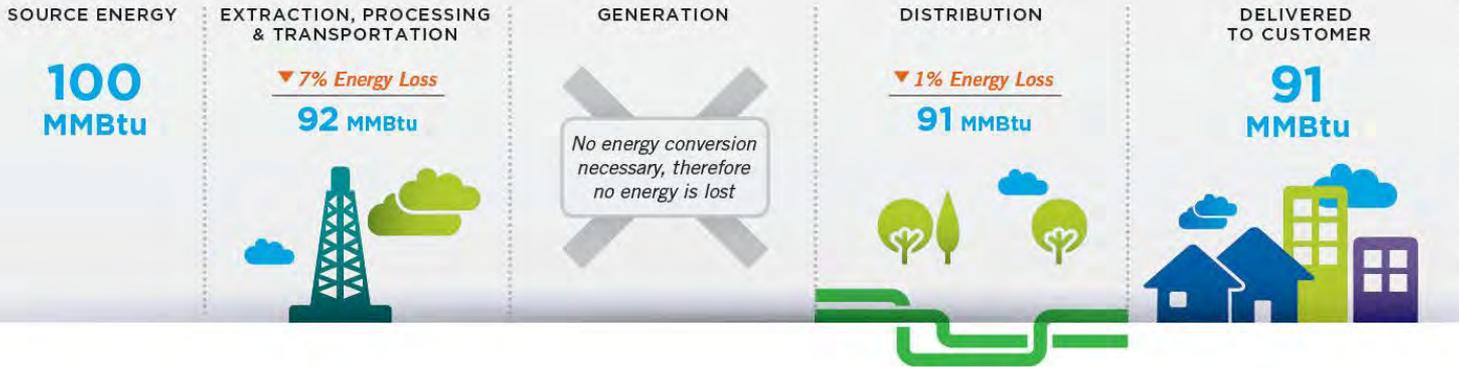
GREEN ENERGY CHOICE



Direct Use of Natural Gas

91%

From the place where it is extracted from the ground, to appliances in your home, natural gas achieves 91% energy efficiency.



Converting to Electricity

Converting natural gas or any other fossil fuel into electricity to power comparable electric end-use products only maintains 36% of usable energy. This is because of the significant amount of energy lost on the journey from production to customer.

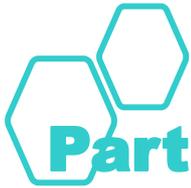


Increased use of natural gas is the single largest factor in power sector emission reductions reaching **25-YEAR LOWS**



The direct use of natural gas in America's homes and business achieves





Partnering with Renewables: Natural Gas Infrastructure is Part of the Solution

- To safely and reliably deliver clean energy in achieving national and global environmental aspirations and capture abundant domestic natural gas, we need to be able to invest, upgrade and modernize infrastructure
- We are essential not only to current daily life but to achieving the clean energy goals of the future efficiently and cost effectively and without putting reliability at risk



Even if we could capture the gas, it's not clear we could get it to the marketplace.

We just need more pipeline capacity.



Energy Secretary Brouillette

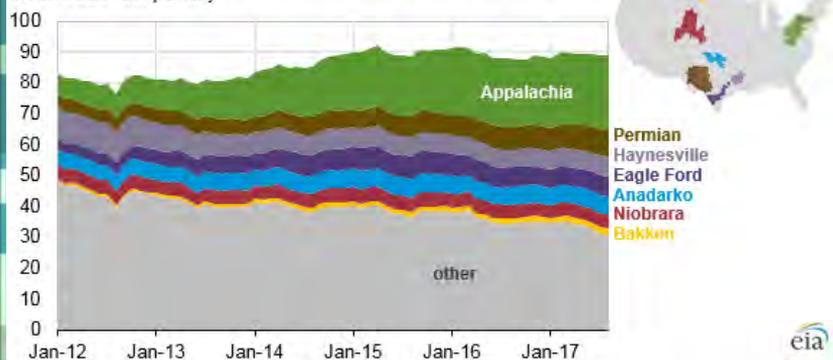
The US EPA's most recent release of greenhouse gas inventory for the period of 2013-2016 showed oil production up by 19%, but associated gas venting and flaring emissions for the same period was down by 17%

Texans for Natural Gas



The Appalachian Basin – America’s largest natural gas producing region and the world’s third largest – experienced a 379 percent increase in production and 82 percent decrease in methane emissions intensity from 2011-2017.

U.S. gross withdrawals of natural gas (Jan 2012 - Aug 2017)
billion cubic feet per day



Methane emissions from production in the basin fell from 5.3 MMT to 4.7 MMT.

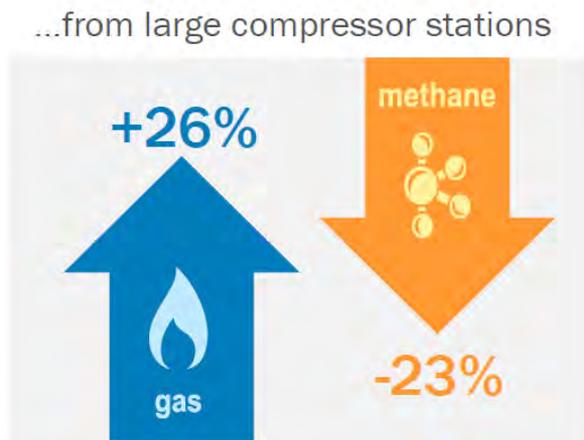
NOAA Study

Foundation Fuel for a Clean Energy Future:

The Good News About Emissions

Methane emissions continue to decrease...

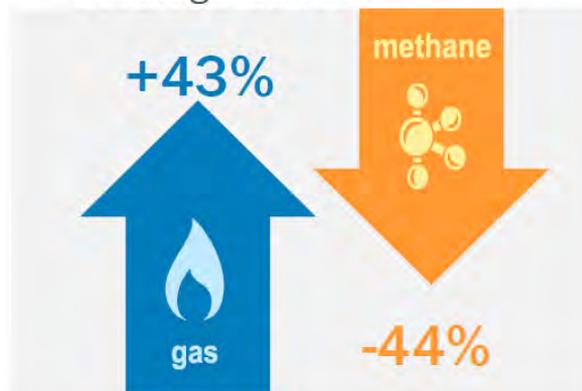
...from large compressor stations



From 2011-2017

- Natural gas production up 26%
- Methane emissions down 23%

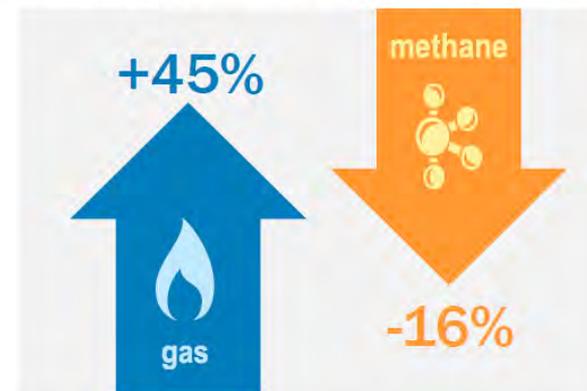
...from natural gas transmission & storage facilities



Since 1990

- Natural gas consumption up 43%
- Methane emissions down 44%

...from entire natural gas value chain



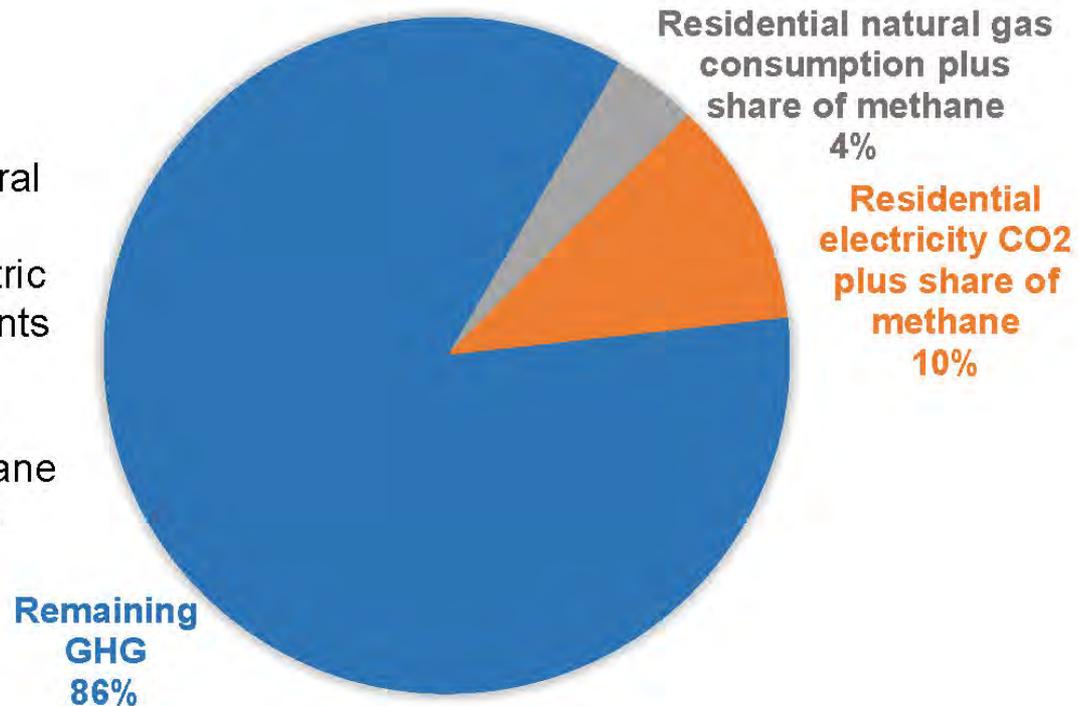
Since 1990

- Natural gas production up 45%
- Methane emissions down 16%

(INGAA Foundation Ambassador Program)

Residential natural gas use accounts for 4% of total US greenhouse gas emissions

- Commercial natural gas use is 3%
- Commercial electric power use accounts for 9%
- Residential and commercial propane and oil use is 3%



Source: EPA, Residential gas methane share based on gas consumption, Residential electricity methane share based on gas for electricity consumption & residential electricity sales, EIA

RENEWABLE NATURAL GAS

Renewable natural gas (RNG) takes methane from landfills, wastewater treatment and agricultural processes that would traditionally be emitted into the atmosphere as a byproduct of these processes and repurposes it for use in the natural gas pipeline and distribution systems.

(UtilityDive)

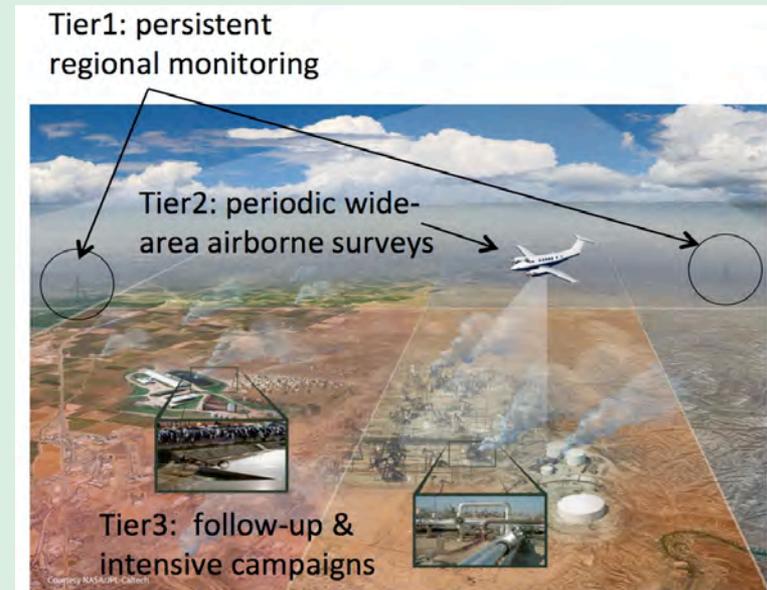
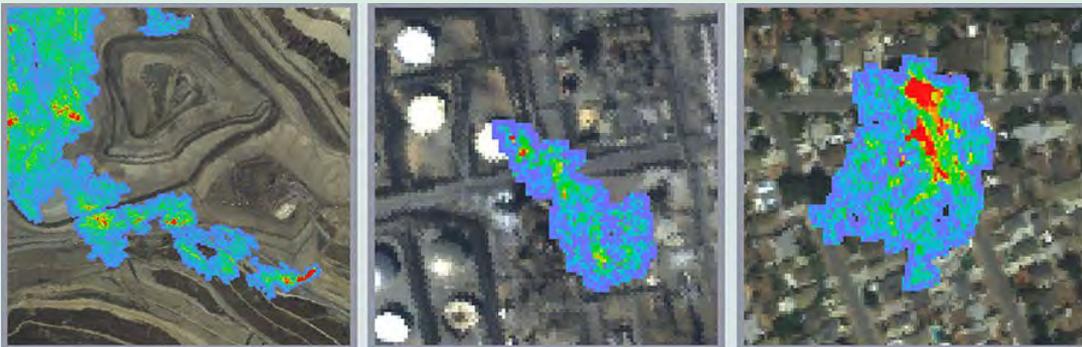
SoCalGas has made a commitment to replace 20% of its traditional natural gas supply with RNG by 2030. A study by Navigant Consulting found that replacing 16% of California's natural gas supply with RNG would cut greenhouse gas emissions as much as converting all state buildings to electric-only energy by 2030.

ADVANCE TECHNOLOGY

In California, more than 50% of the methane emissions come from less than 10% of the sources.

These “super emitters” (sites or equipment that produce disproportionate shares of total emissions) are now rapidly identified by advanced technologies and repaired in rapid fashion.

(CARB)

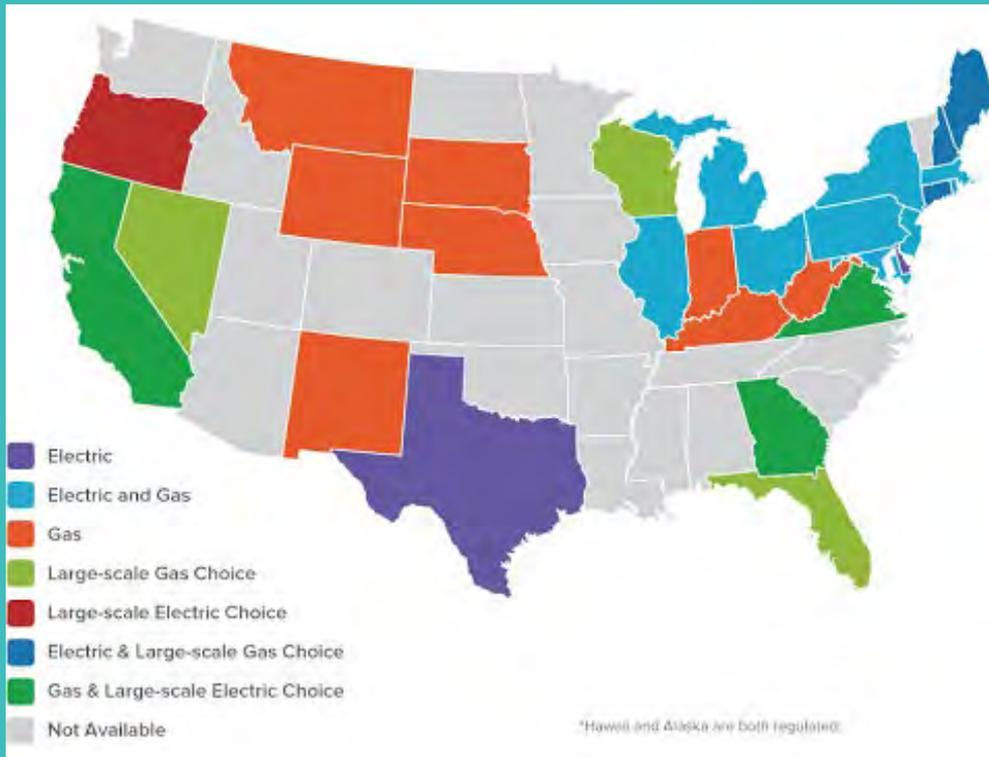


Natural Gas is a...

INDEPENDENT ENERGY CHOICE



ENERGY CHOICE MATTERS

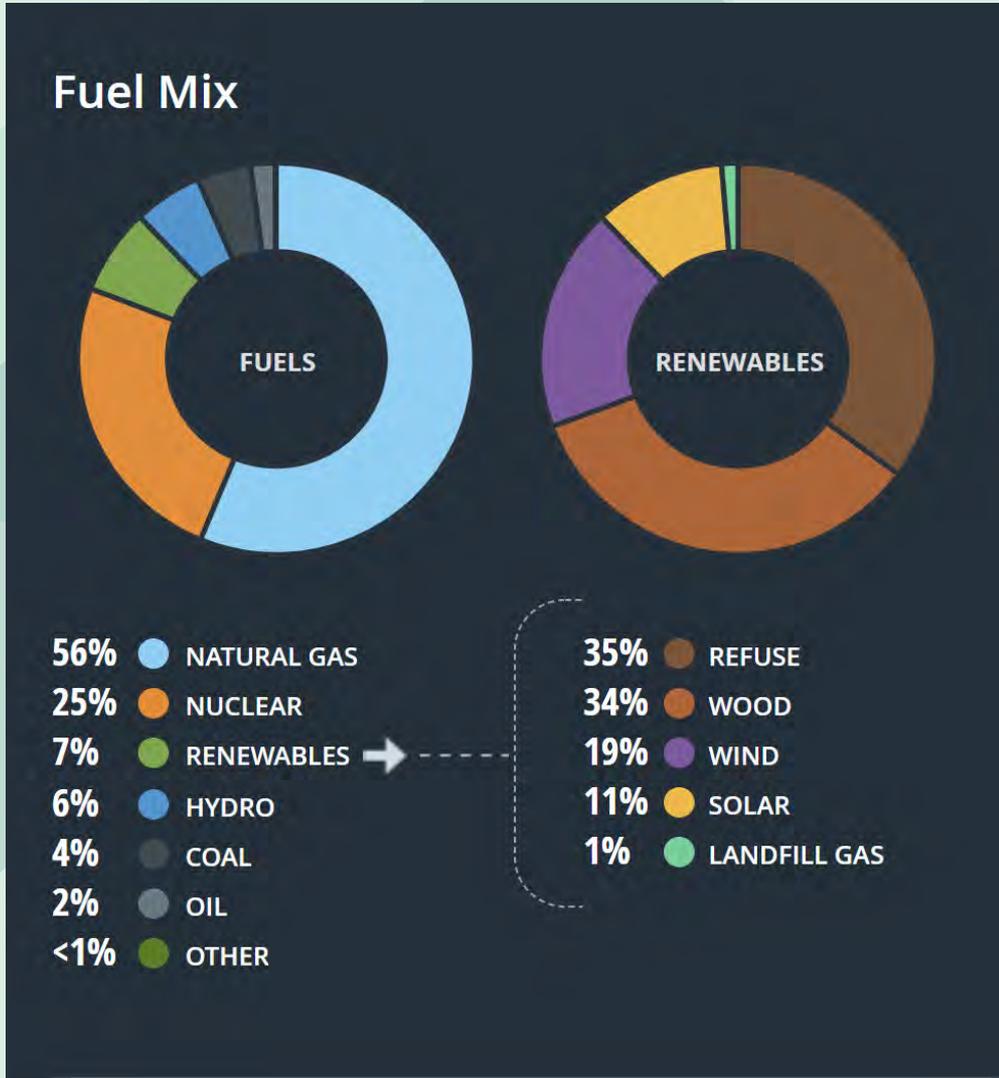


- Relying on electricity alone would make citizens, businesses, hospitals, and schools far more vulnerable to wildfires, extreme heat, and international cyberattacks on the power grid.

- Banning gas removes the backstop so crucial for energy reliability and economic stability.

(Energy Choice Matter-LA Daily News Opinion Piece)

New England Independent System Operator Fuel Mix for Electric Generation 12/16/20



(INGAA Foundation Ambassador Program)

ENERGY CONNECTS EVERYTHING

Energy not only powers our modern life...

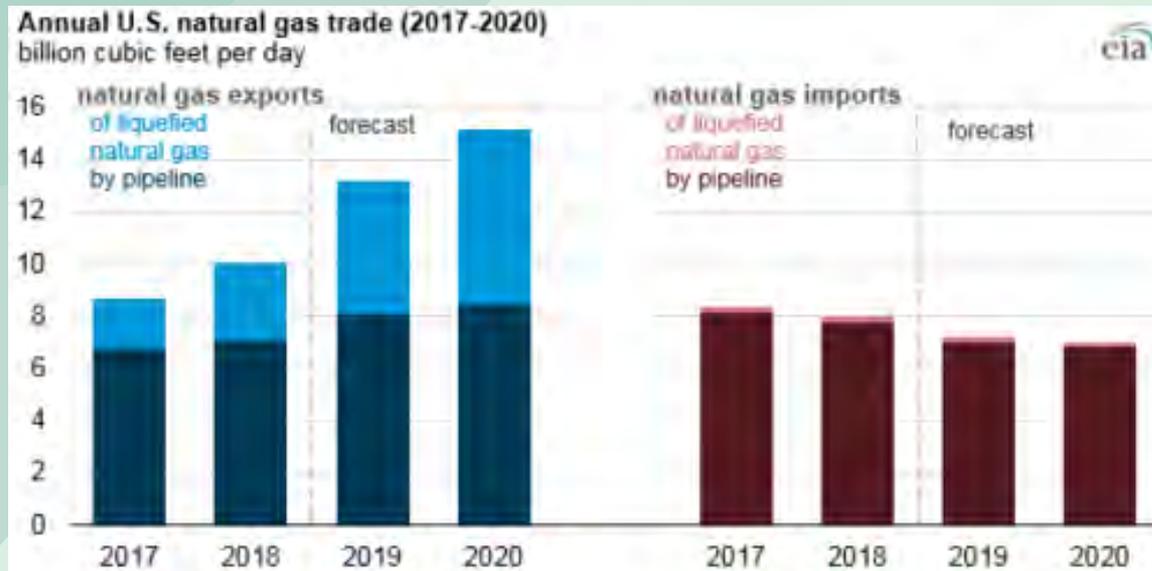
...many of our everyday products are made with fossil fuels



(INGAA Foundation Ambassador Program)

ENERGY INDEPENDENCE

USA energy production in 2019 was higher than U.S. energy consumption for the first time in 62 years. Thus, the U.S. attained the long-held goal of “energy independence”—which is not to say that we did not import or export energy, but that we produced more energy than we used.



NATURAL GAS USE AND INVESTMENT SURGE

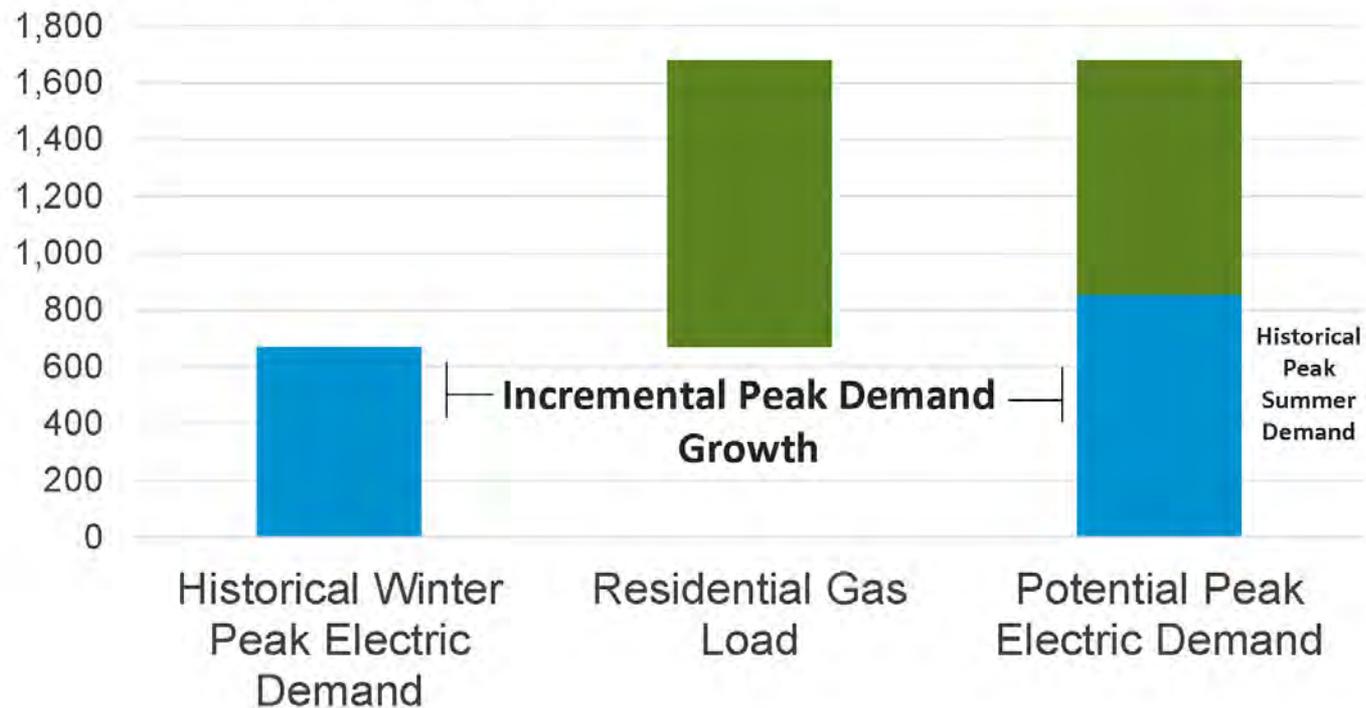
U.S. natural gas utility construction expenditures totaled an estimated **\$185 BILLION** from 2010 to 2018.



*Source: Sustainable Energy in America Factbook 2020.
Developed in partnership with the Business Council for Sustainable Energy.
<https://bcse.org/factbook/>*

Electrifying the entire residential sector could nearly double the US electric grid's peak hourly demand

Impact of 100% Electrification of Residential Natural Gas
Peak Winter Hourly Demand (GW)



Source: Implications of Policy-Driven Electrification of Residential Gas Use, American Gas Association

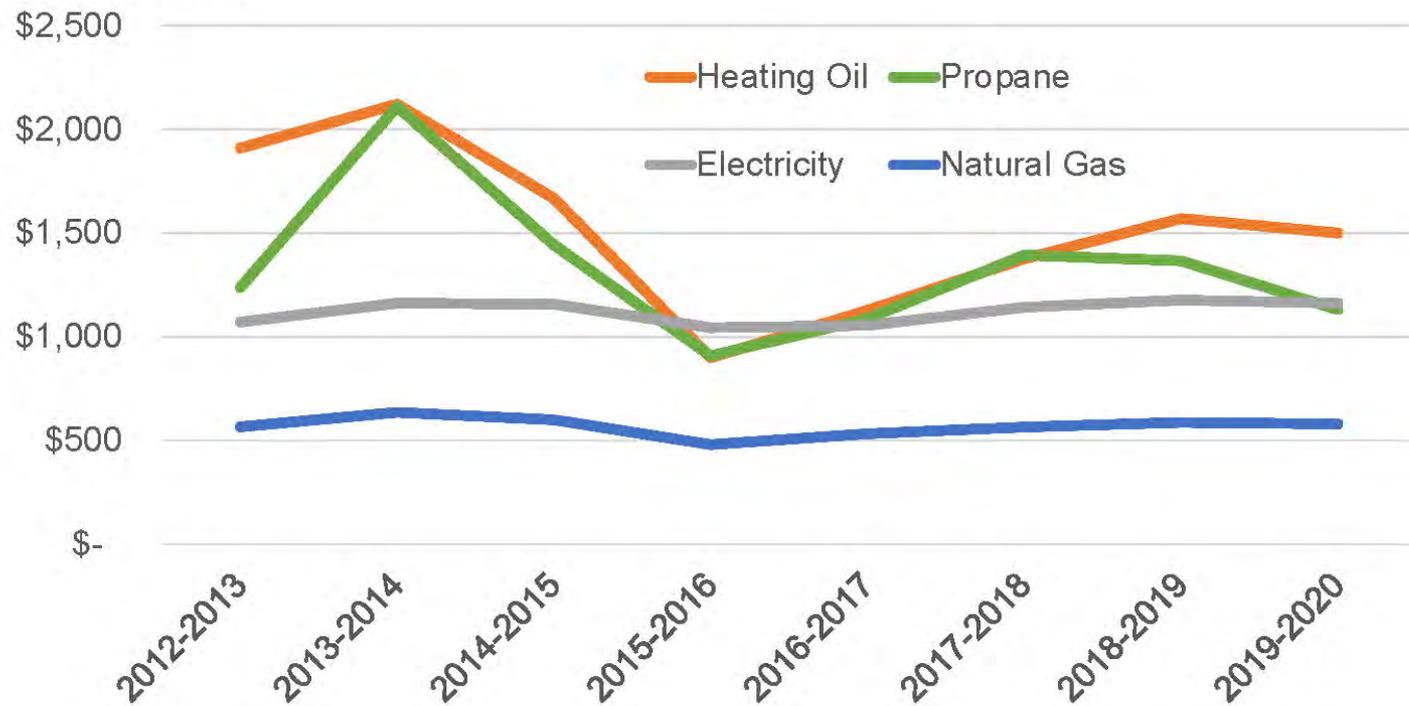
Natural Gas is a...

LOW-COST ENERGY CHOICE



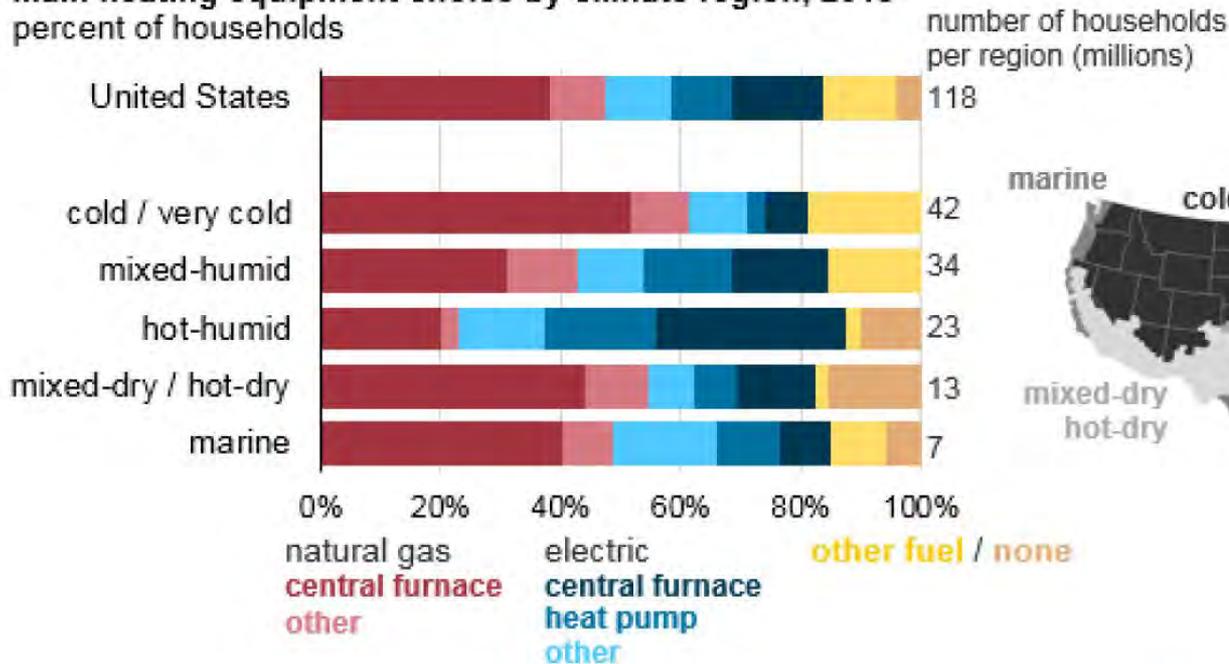
Households using natural gas for heat during the winter save twice as much as those using electricity

US Average Consumer Expenditures for Heating Fuels During the Winter (Dollars)



Natural gas is the main heating fuel choice for residential homes in most regions, though electric equipment is more predominant in warmer climates.

Main heating equipment choice by climate region, 2015
percent of households



Source: Energy Information Administration, Residential Energy Consumption Survey

Natural Gas Costs Less

Households that use natural gas appliances for heating, water heating, cooking and clothes drying spend an average of **\$879** less per year than homes using electric appliances.



Natural Gas was the largest source of U.S. electricity generation in 2019 – 38%



On average, U.S. homes use 175 cubic feet of natural gas per day

Fertilizer used to grow crops is composed almost entirely of natural gas components. U.S. agricultural producers rely on an affordable stable supply of natural gas.



NYC Natural Gas Ban Costs Potentially 'Astronomical'

A New York City ban on natural gas connections in new buildings by 2030 and announced policies to ban natural gas and other fossil fuels in large buildings by 2040 could cost New York City households upwards of **\$25,000**, a Consumer Energy Alliance study shows.

Cost Calculator of an NYC Energy Service Ban

- Heat Pump Installation: **\$5,700** (national average)
- Total Costs: **\$20,000** potentially depending on labor, fees and permits
- Electric Panel Upgrade (200 Amps): Ranges up to **\$2,300** in NYC or more/ **\$1,424** (national average)
- Hot Water Heater Replacement: **\$1,027** (national average)
- Installing an outlet/switch: Ranges up to **\$543** in NYC or more, **\$374** per outlet nationally
- Install-or-Repair-Electrical-Switches-and-Outlets/ Hot water heater removal: **\$57-\$243**
- Electric Stove: **\$700**
- Electric Dryer: **\$600-\$700** (mid-range avg)
- Installing Electric Clothes Dryer: **\$700** (national average)

ELECTRIFICATION CAN BE COSTLY

COST OF ELECTRICAL POWER OUTAGES

“I had 3 power outages this week here in PG&E land, one lasting about 5 hours, the other two were brief but disruptive none the less. With CA pulling nuclear and natural gas electric generating plants offline this problem is going to get worse and it has a huge affect on your day to day life.

I am buying battery backups for all of our workstations so we minimize the lost work caused by the outage and also allow us to continue working through them as long as they are not very long. I have 8 workstations so that is another say \$1,000 I need to spend to overcome the deficiencies in electrifying the state.”

Scott Henrich, P.E. Gild Natural Gas Advocacy Committee Member

Pipelines Bring Affordability and Opportunity

American families rely more than ever on natural gas not only for heat in the winter, but year-round for cooking, drying clothes, taking a hot shower, and so much more.

American businesses also rely more than ever on natural gas to heat, supply hot water, and run industrial and manufacturing processes.

Over the past four years, hardworking families who use natural gas for their everyday needs have collectively saved nearly \$66 billion in energy costs. That is an average of \$874 in annual savings per household.

American businesses have seen \$105 billion in savings since 2009.

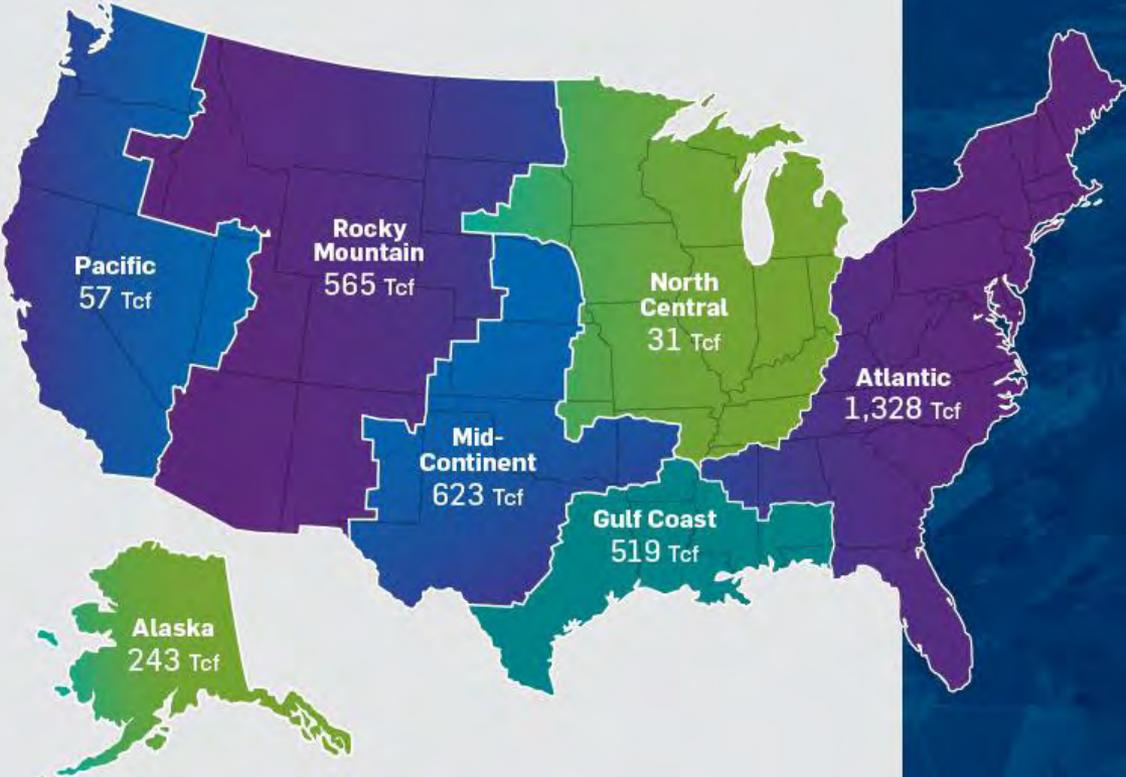
Natural Gas is a...

DEPENDABLE ENERGY CHOICE



Reliable: An Integral Part of the Clean Energy Future

NATURAL GAS Regional Resource Assessment



3,838 Tcf
TOTAL FUTURE SUPPLY

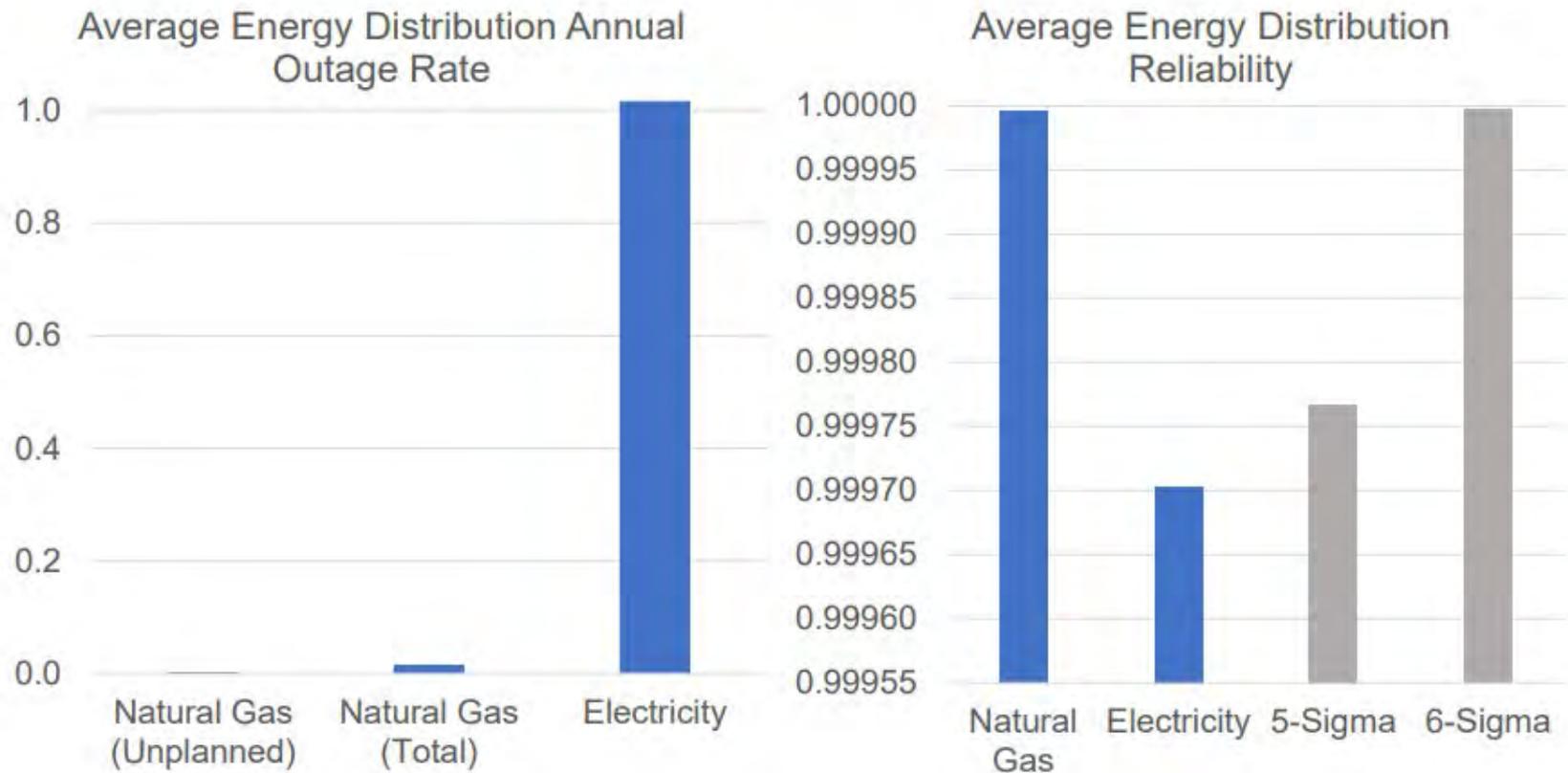
3,374 Tcf*
TOTAL U.S. GAS RESOURCES (MEAN)

464 Tcf*
U.S. PROVED GAS RESERVES (EIA)

When the PGC's results are combined with the U.S. Department of Energy's latest available determination of proved gas reserves, the U.S. has a total available future supply of 3,838 Tcf.

* Total numbers, listed in billion cubic feet (Tcf), account for resources in conventional (onshore and offshore), tight, shale and coalbed reservoirs. Source: Potential Gas Agency (2019) | Separately aggregated from all province data.

Natural gas service is reliable. Unplanned outages affect about 1 in 800 natural gas customers per year. By comparison, electric distribution systems have an average of one outage per year per customer.



Source: Gas Technology Institute. *Assessment of Natural Gas and Electric Distribution Service Reliability*. 2018.

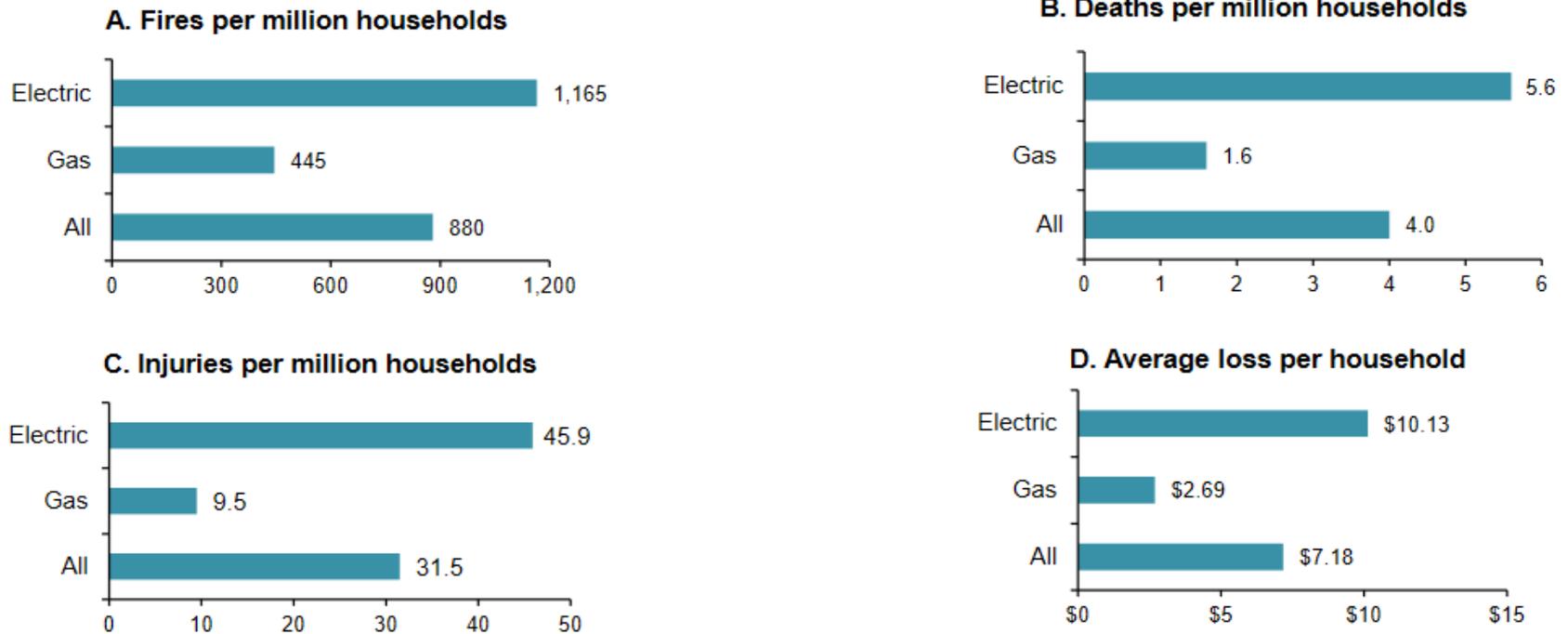
“Regardless of your thoughts on climate change, last month’s storm made painfully clear that **climate catastrophists** have an oversize influence on public policy. An obsessive focus on reaching the unattainable goal of zero carbon emissions led to decades of poor decisions that prioritized and subsidized **unreliable energy sources** (wind and solar) at the expense of reliable ones (natural gas, coal and nuclear).

Texas can’t afford to come within minutes of total system failure ever again, and the only way to ensure it never happens is to reverse policy choices that have tilted the state’s energy mix in favor of inefficient and unreliable sources. The mix needs to be rebalanced, with **an emphasis on cheap, plentiful and reliable sources** such as natural gas, coal and nuclear.”

Wayne Christian, Chairman of the Texas Railroad Commission

Depend on Natural Gas for Household Safety

Figure 10. Risk related to usage of electric vs. gas ranges or cooktops: 2014–2018



Natural Gas is...

- Very Safe
- Highly Regulated
- Reliable
- Affordable

- Innovative
- The cleanest fossil fuel
- Critical to renewable power's success



WE ARE WORKING ON DOING A BETTER JOB...

...communicating, educating, promoting & defending our work

- We get the gas to the customer, so the plant keeps running, the home stays warm and the restaurant serves up the dish that nourishes a family



- The onus is on us to educate more, explain more and step out of our comfort zones to communicate the benefits and value we bring

**If we don't fill in the blanks in a positive light,
others will do so in a negative light**