



NATURAL GAS

Energy Opportunity

Examining the US Natural Gas Market 2018

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June 13, 2018

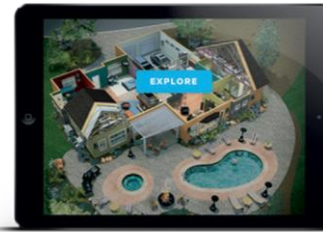




The American Gas Association, founded in 1918, represents more than 200 local energy companies that deliver clean natural gas throughout the United States. There are more than 74 million residential, commercial and industrial natural gas customers in the U.S., of which 94 percent — more than 70 million customers — receive their gas from AGA members. Today, natural gas meets more than one-fourth of the United States' energy needs.

www.aga.org

We rely on natural gas
every day



*Explore the Interactive
Natural Gas Home*

NaturalGasHome.org

Water Heaters

Gas Ranges, Ovens,
& Cooktops

Furnaces

Standby
Generators

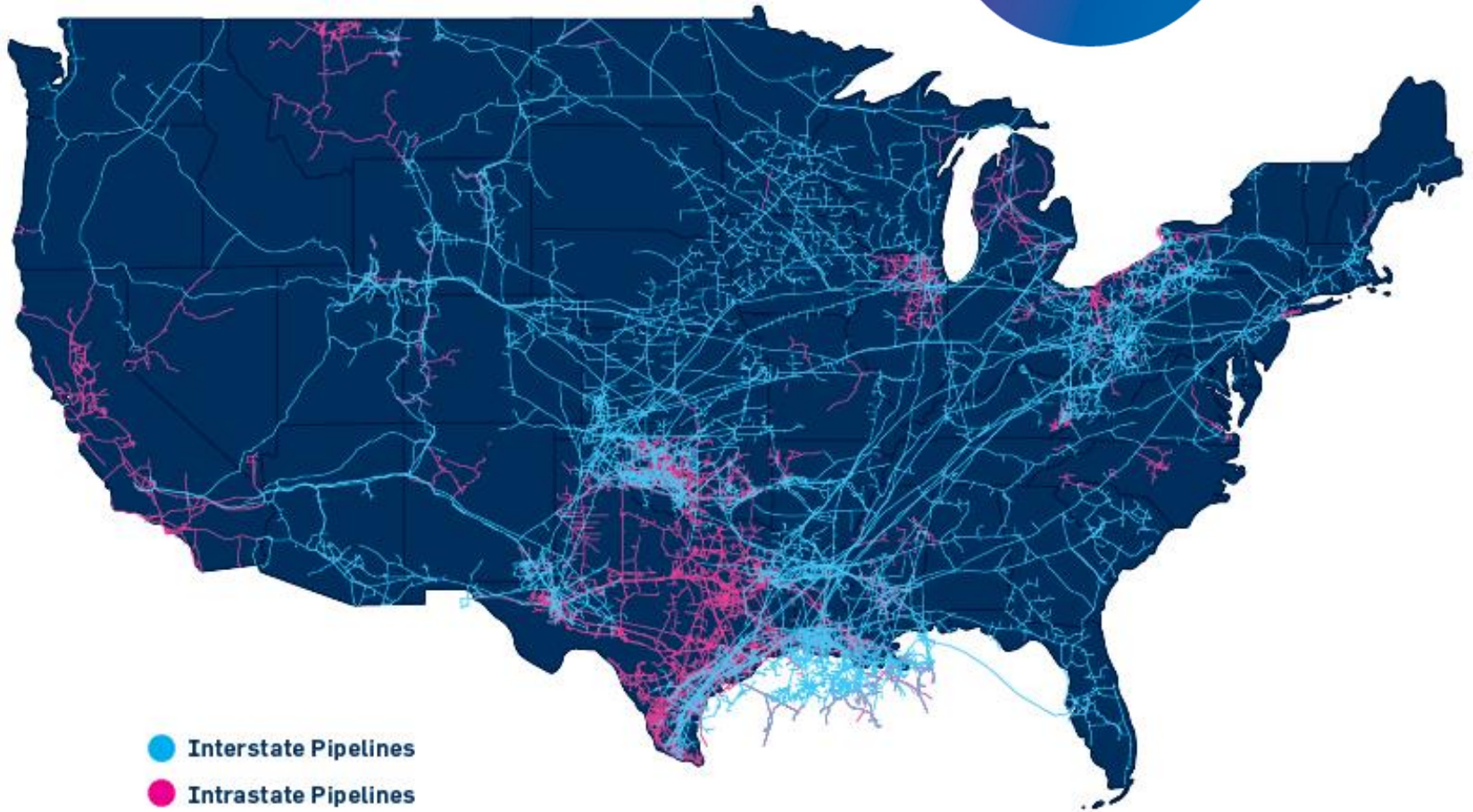
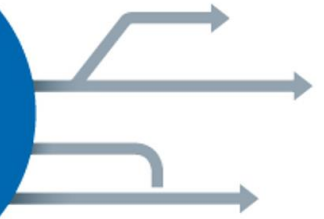
Outdoor
Living Spaces



Safely Transported Across the Country

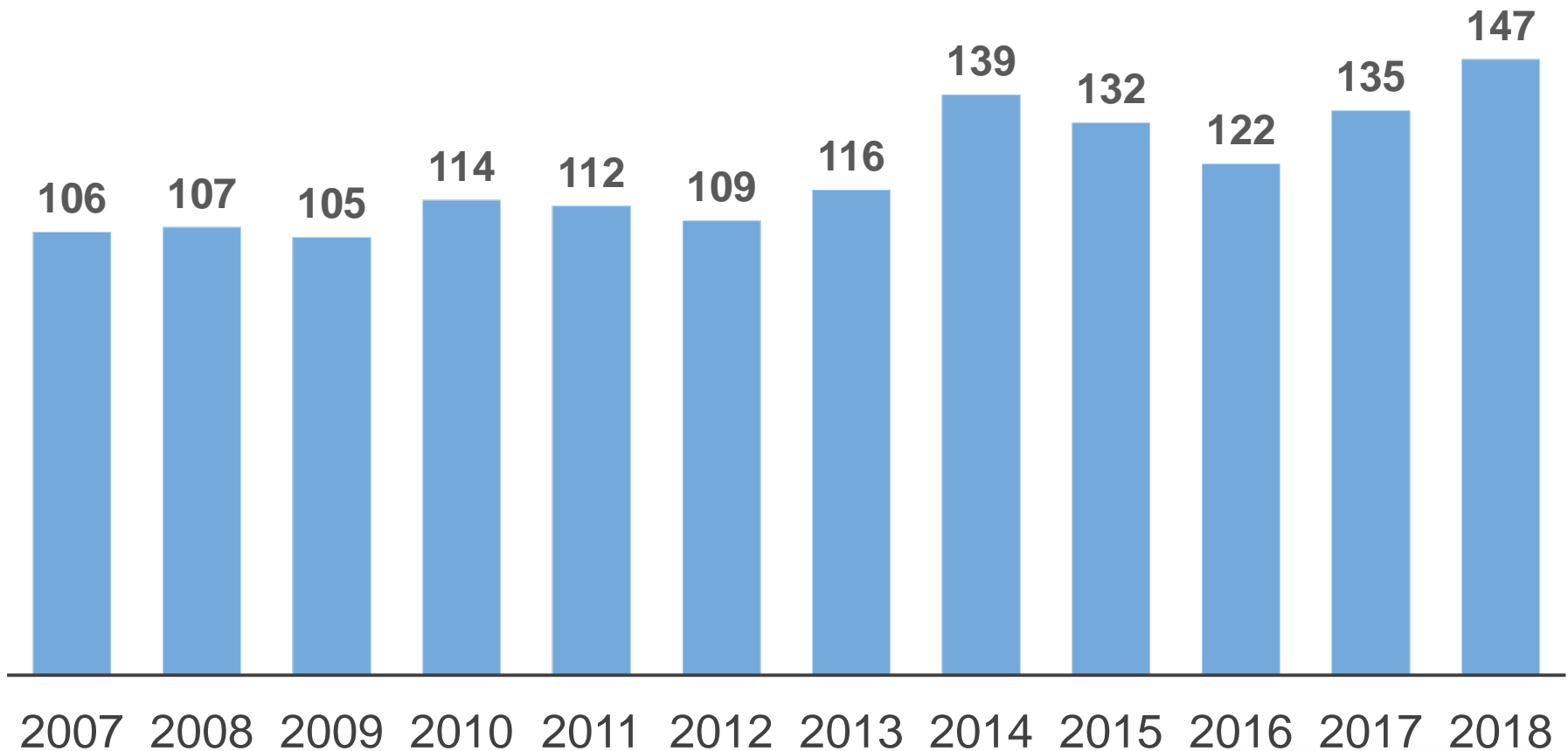
2.5

Million miles of
pipeline



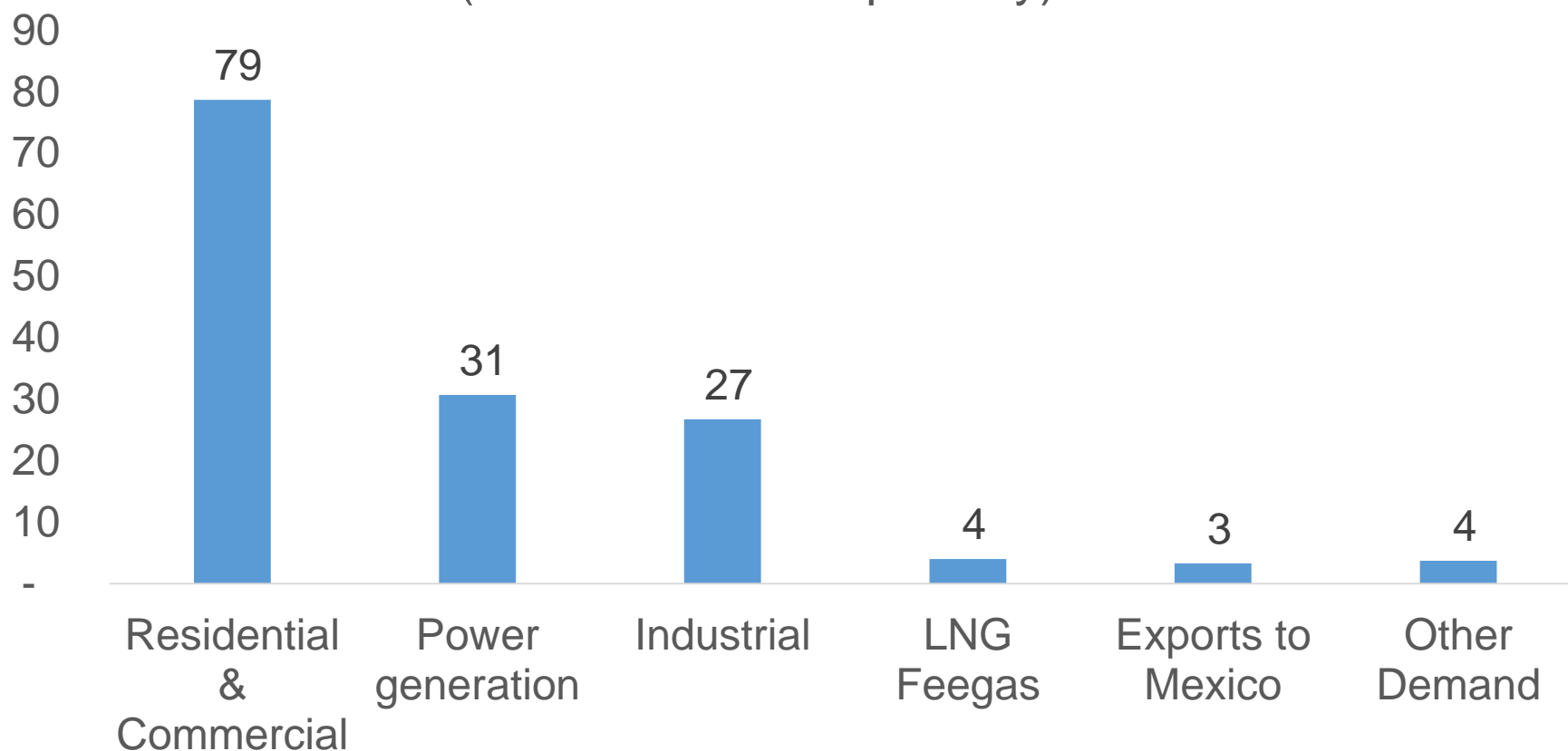
The US just experienced the single-largest gas consuming day in history

Peak Day Natural Gas Consumption (Bcf per day)



Residential & commercial demand spiked due to record cold temperatures.

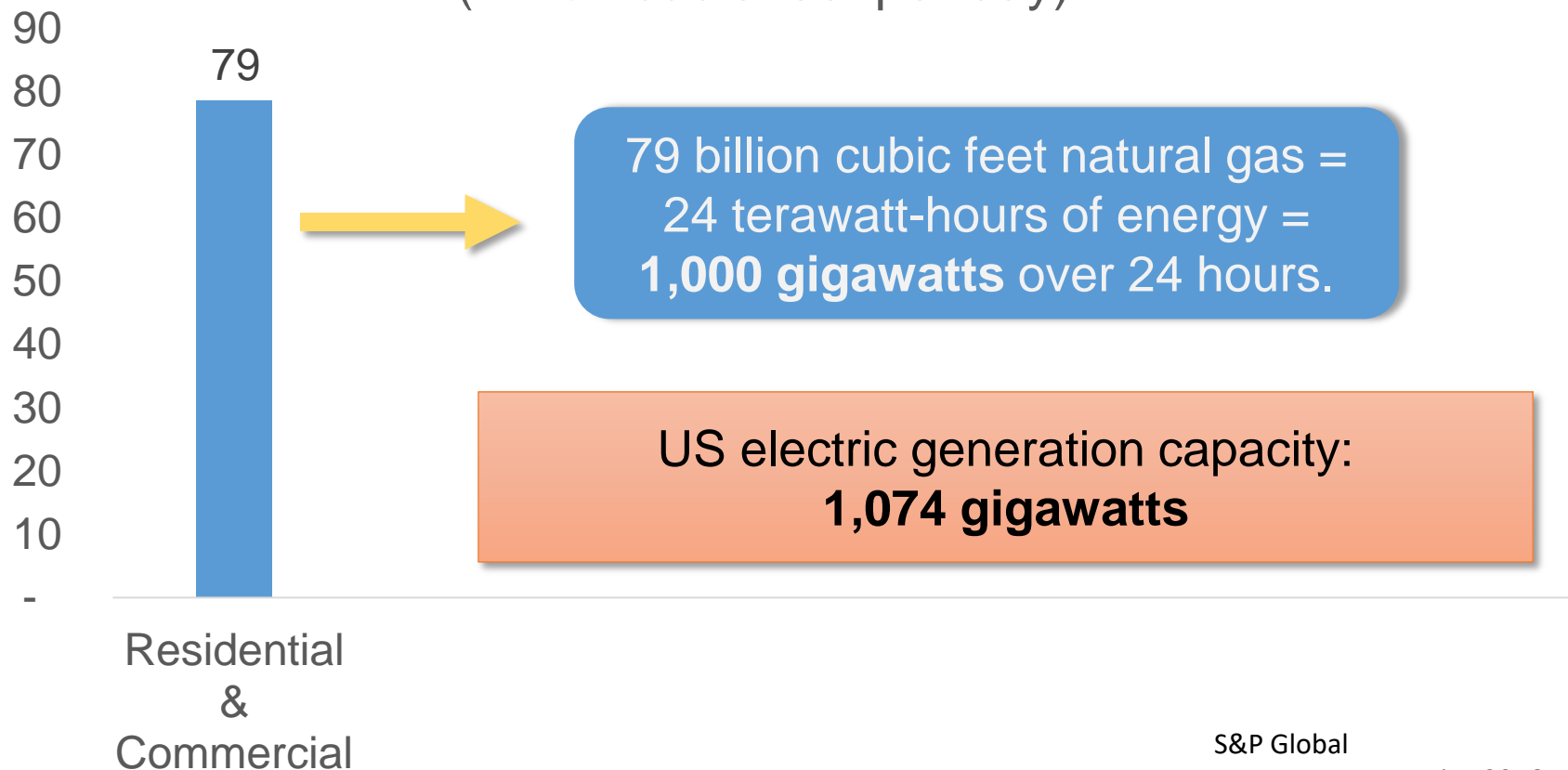
US Natural gas demand on January 1, 2018
(Billion cubic feet per day)



S&P Global

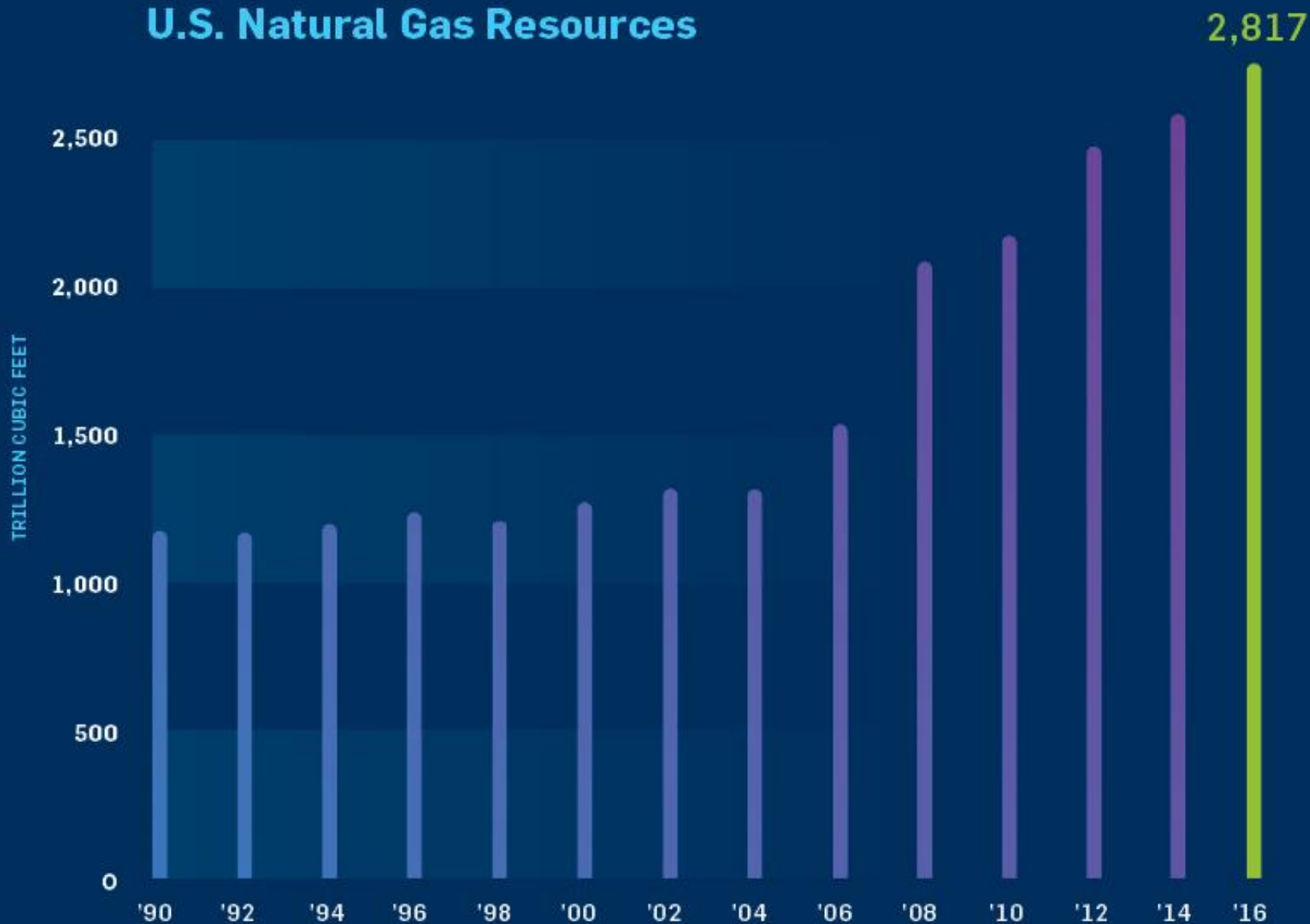
Residential & commercial demand: How much does 79 Bcf of natural gas represent?

US Natural gas demand on January 1, 2018
(Billion cubic feet per day)



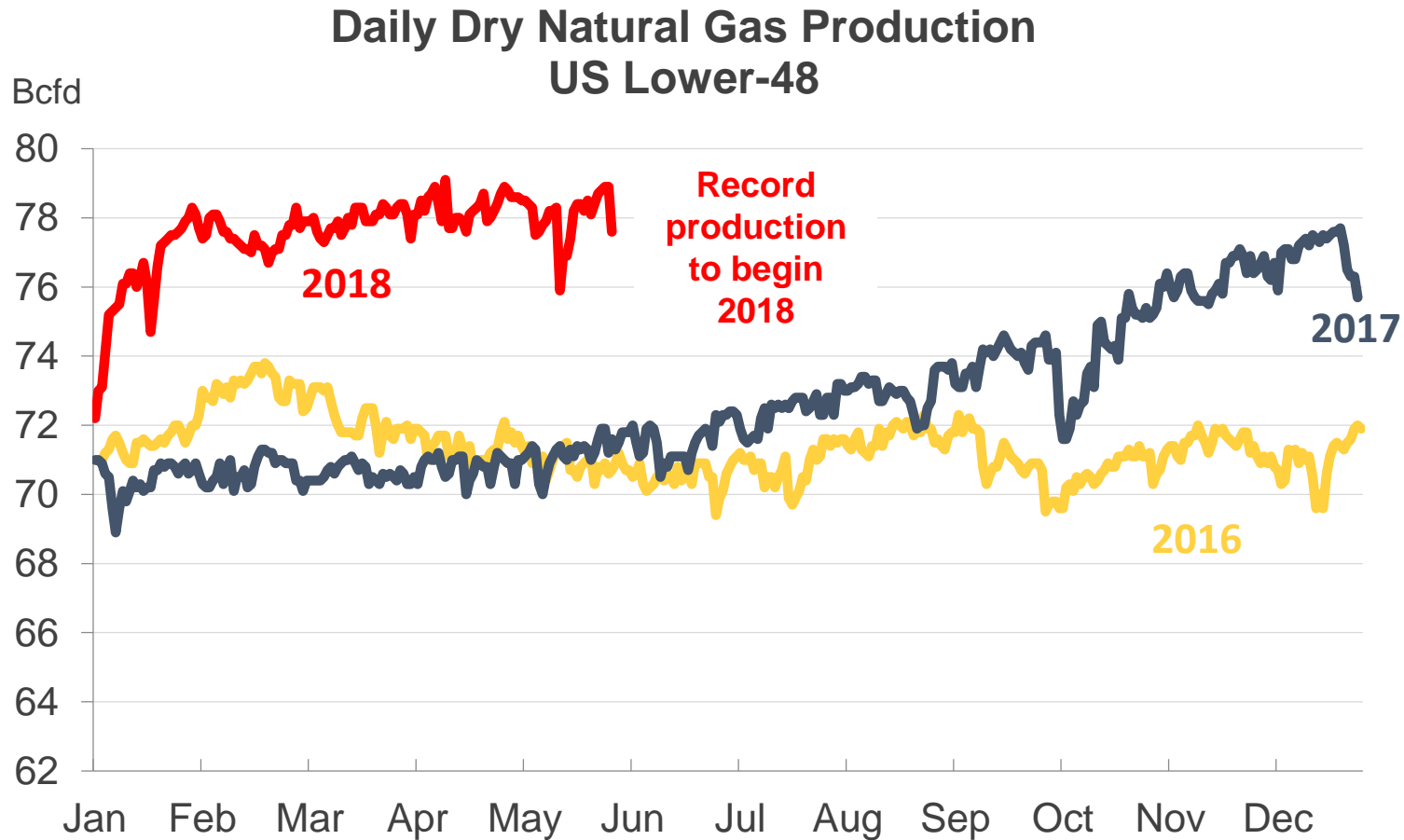
S&P Global
Net summer capacity, 2016, EIA

U.S. Natural Gas Resources



(Source: Potential Gas Committee)

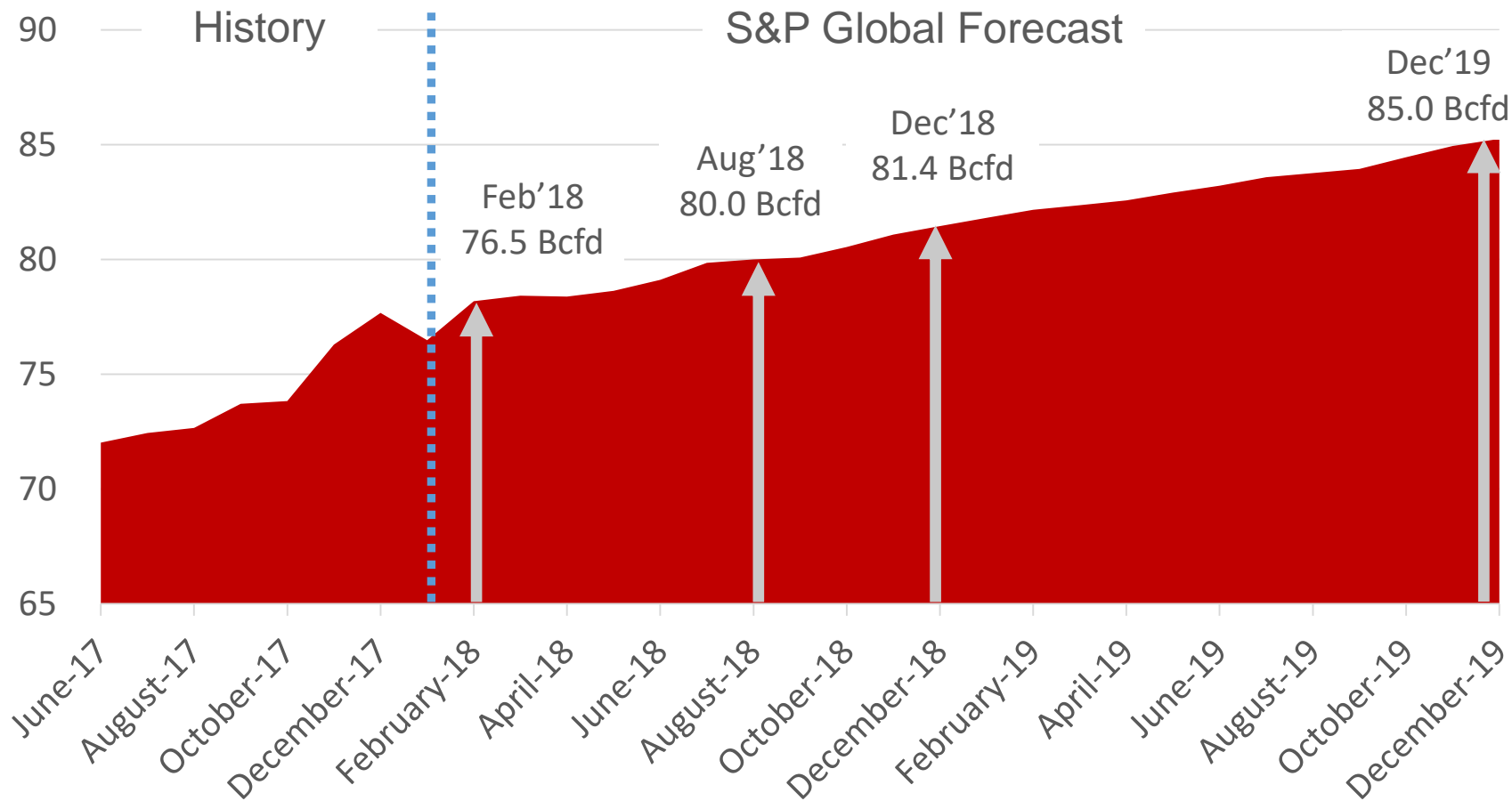
More drilling activity had an effect. Dry gas production rose steadily in 2017 and into 2018.



Bentek

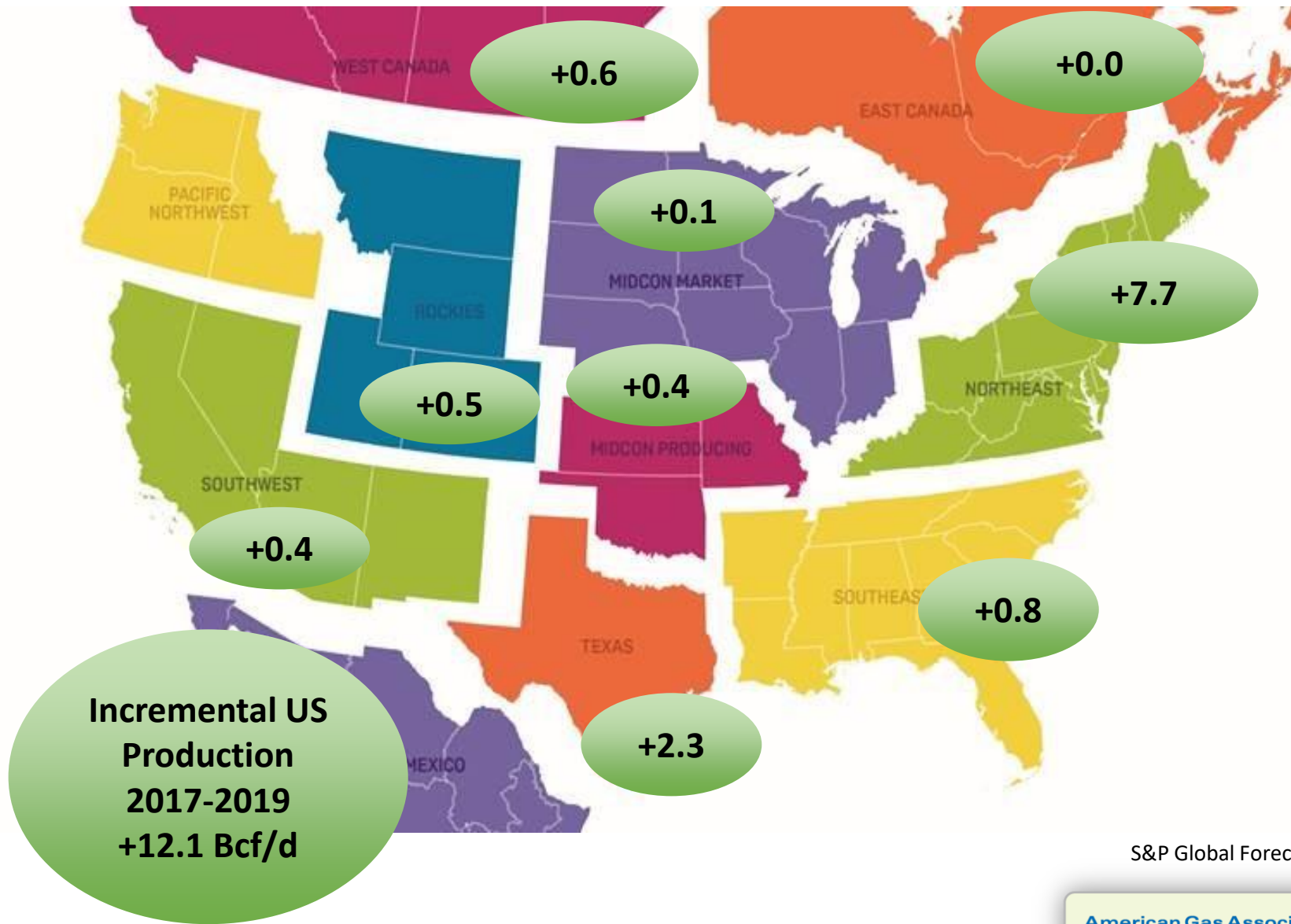
Where is domestic gas production headed?

Natural Gas Production, US Lower-48 (Bcfd)

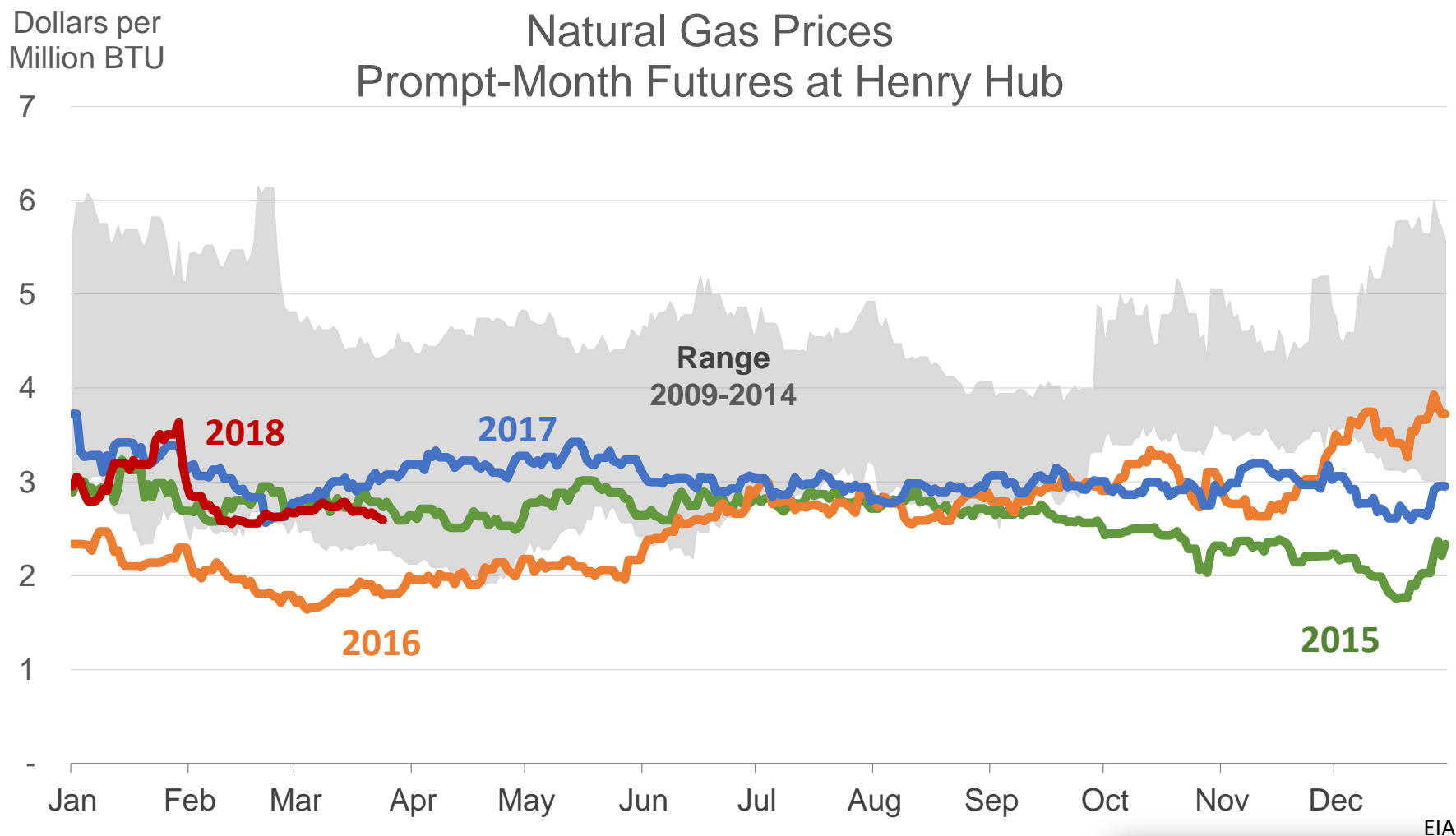


S&P Global Forecast

New natural gas production expected from all major basins, driven by Northeast and South

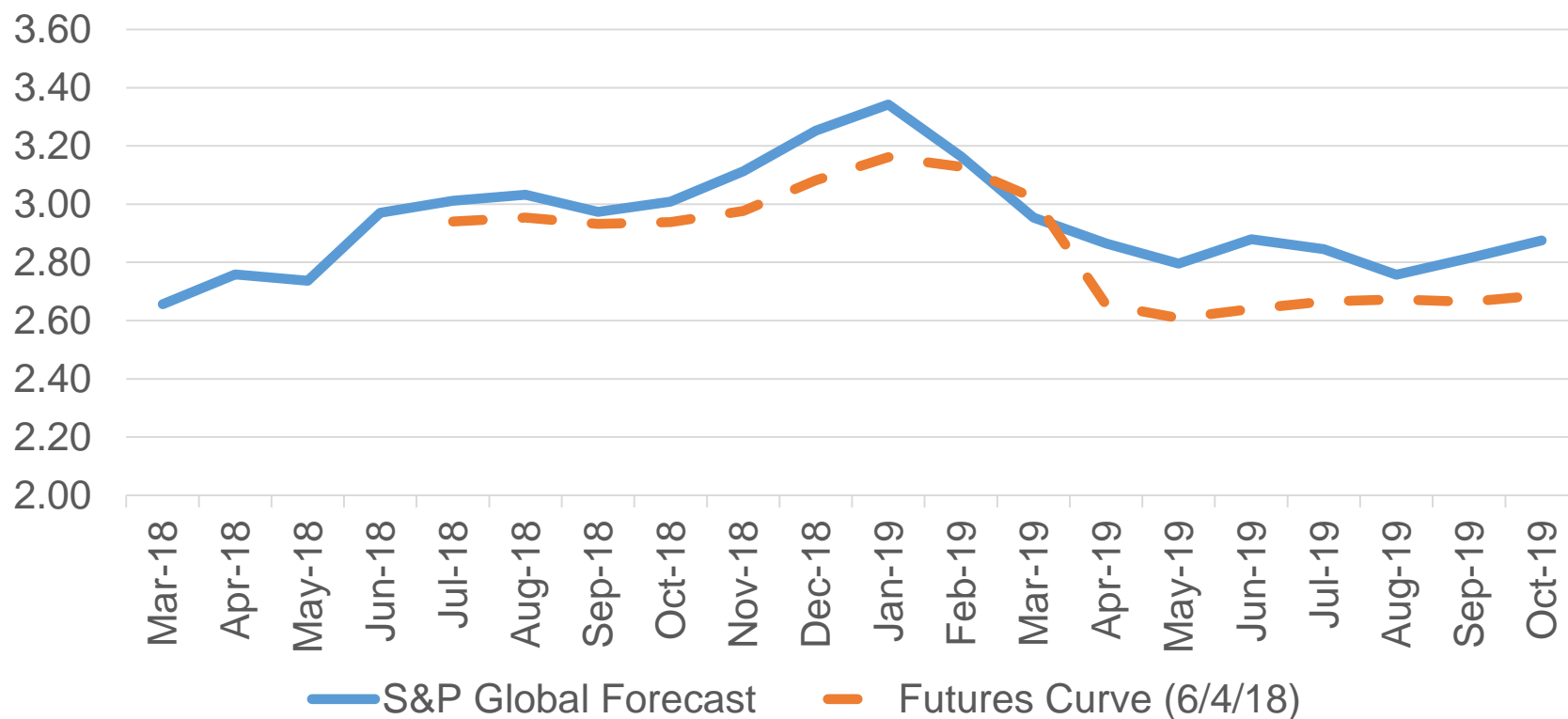


Natural gas prices have remained low compared to recent history for the past three years.



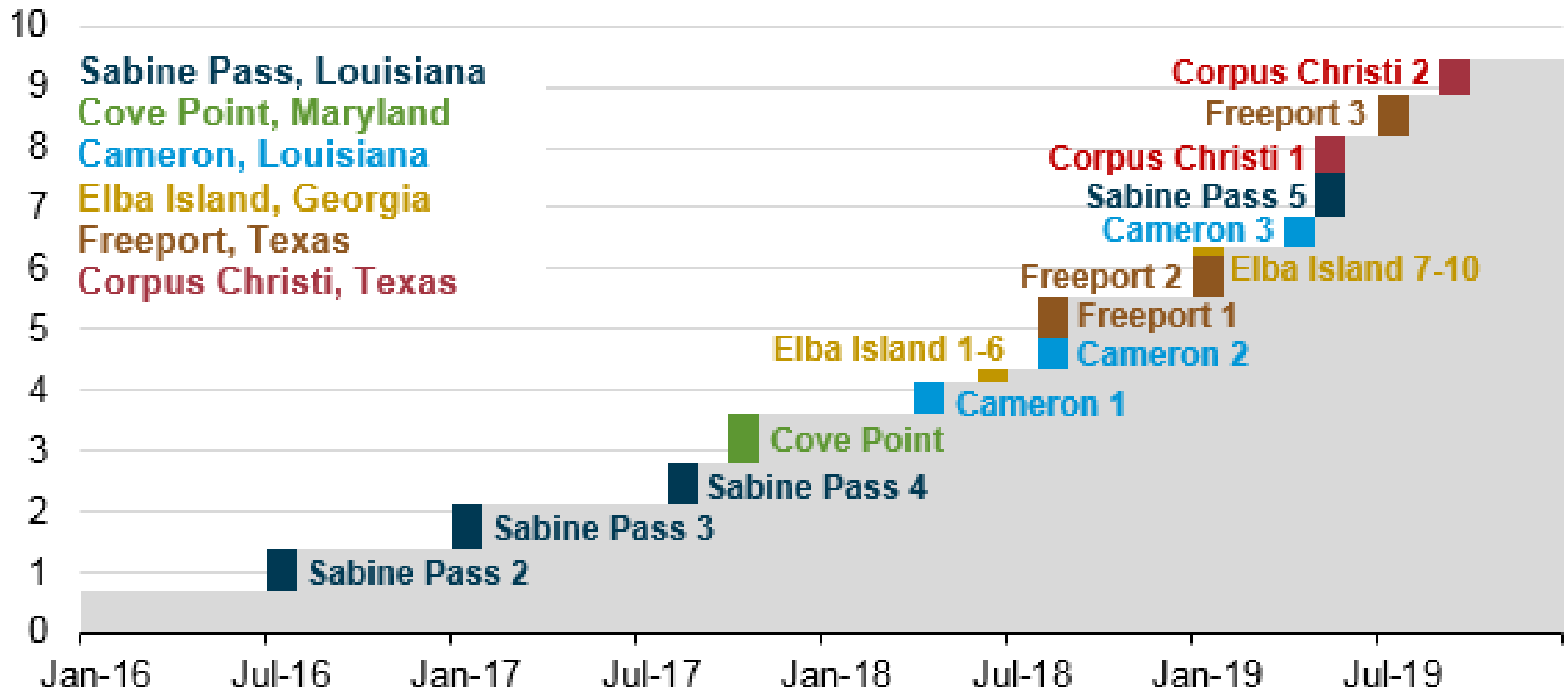
Analysts see growing production can be met at prices between \$2.50 - \$3.50 per MMBtu.

Henry Hub Price Forecast and Futures Curve
\$/MMBtu



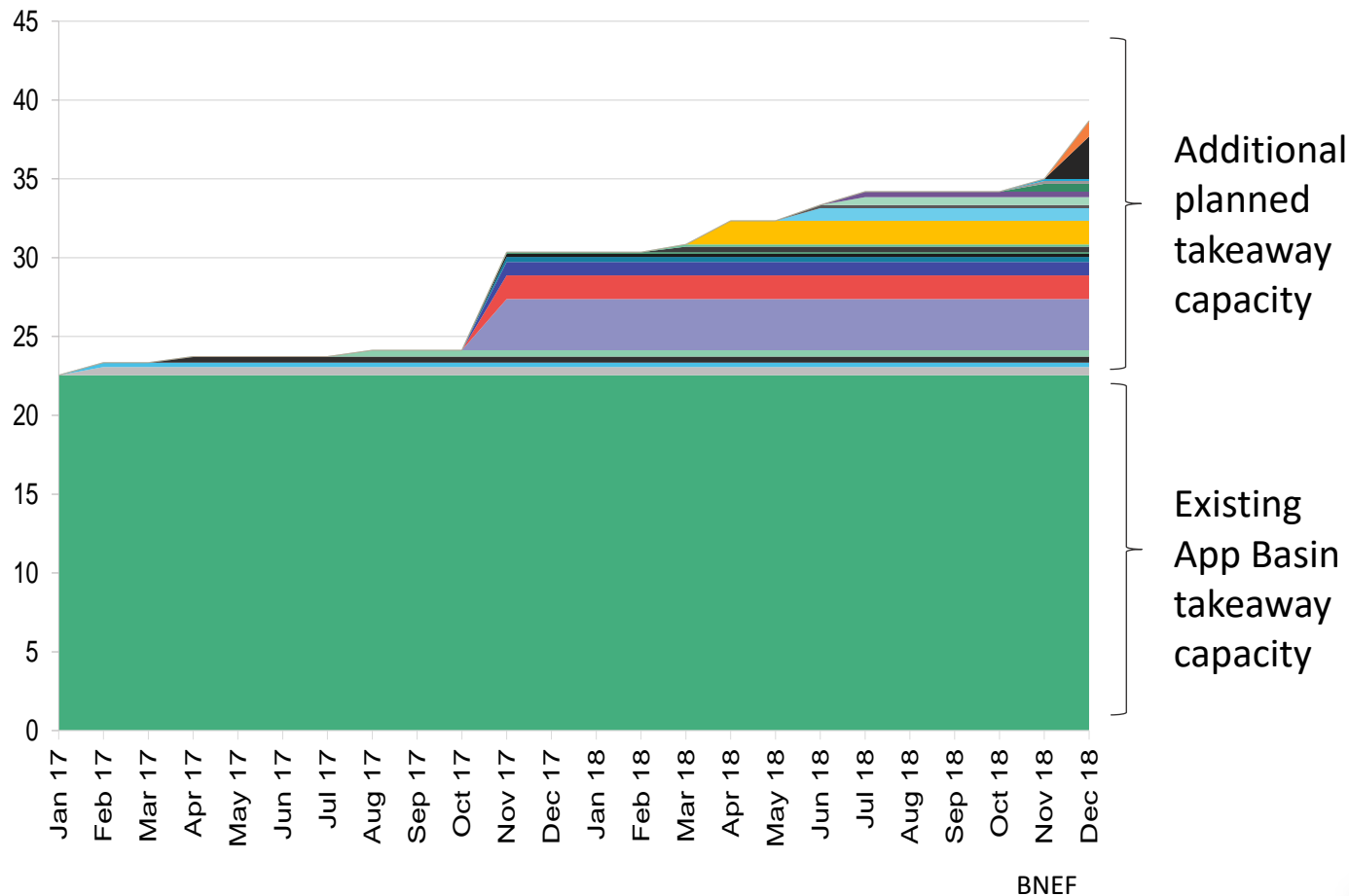
EIA expects US liquefaction capacity to reach 9.5 Bcfd by year-end 2019.

U.S. liquefied natural gas export capacity
billion cubic feet per day



Significant new **pipeline** takeaway capacity anticipated late 2017 into 2018.

Appalachian basin takeaway capacity, Bcfd



Additional
planned
takeaway
capacity

Existing
App Basin
takeaway
capacity

Expected to
boost
production over
time, outflows
straight away

First round of
major greenfield
projects for the
region—round 2
(2018+ projects)
will be less
impactful on
price



Impacts

Of Policy-Driven Residential Electrification



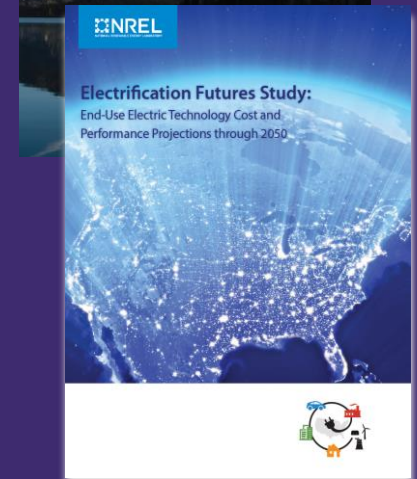
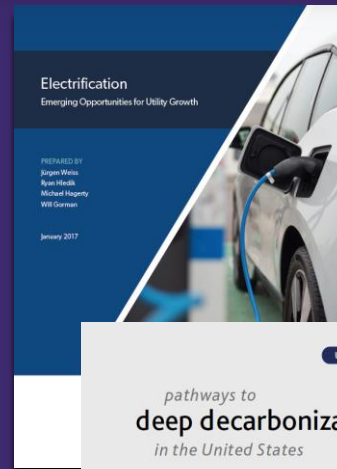
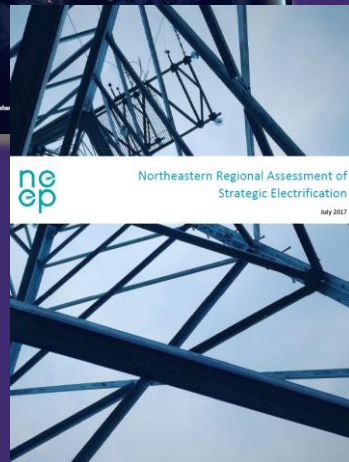
There has been a shift in the types of policies proposed to reduce greenhouse gas emissions.

The key to tackling climate change: electrify everything



By David Roberts | @drvox | david@vox.com | Updated Oct 27, 2017, 8:48am EDT

Many studies
assume
electrification of
home heat as a
means to
decarbonization

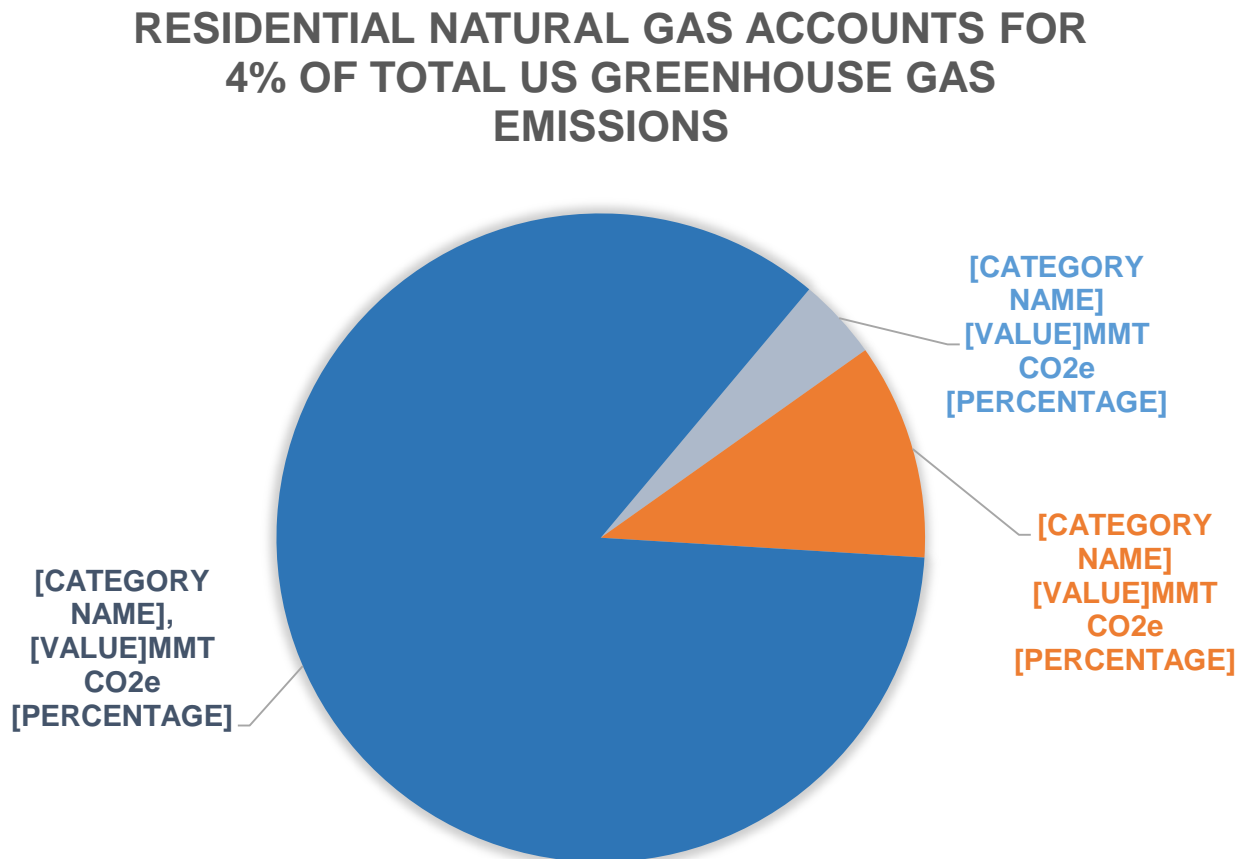


As the grid decarbonizes, the calls to
“electrify everything” grow.

What happens when you electrify
residential space and water heat?

Residential gas use is a small part of US GHG Emissions

- Residential gas use is 4% of total GHG emissions.
- Residential electricity is 11%.
- Commercial gas use is 3%.



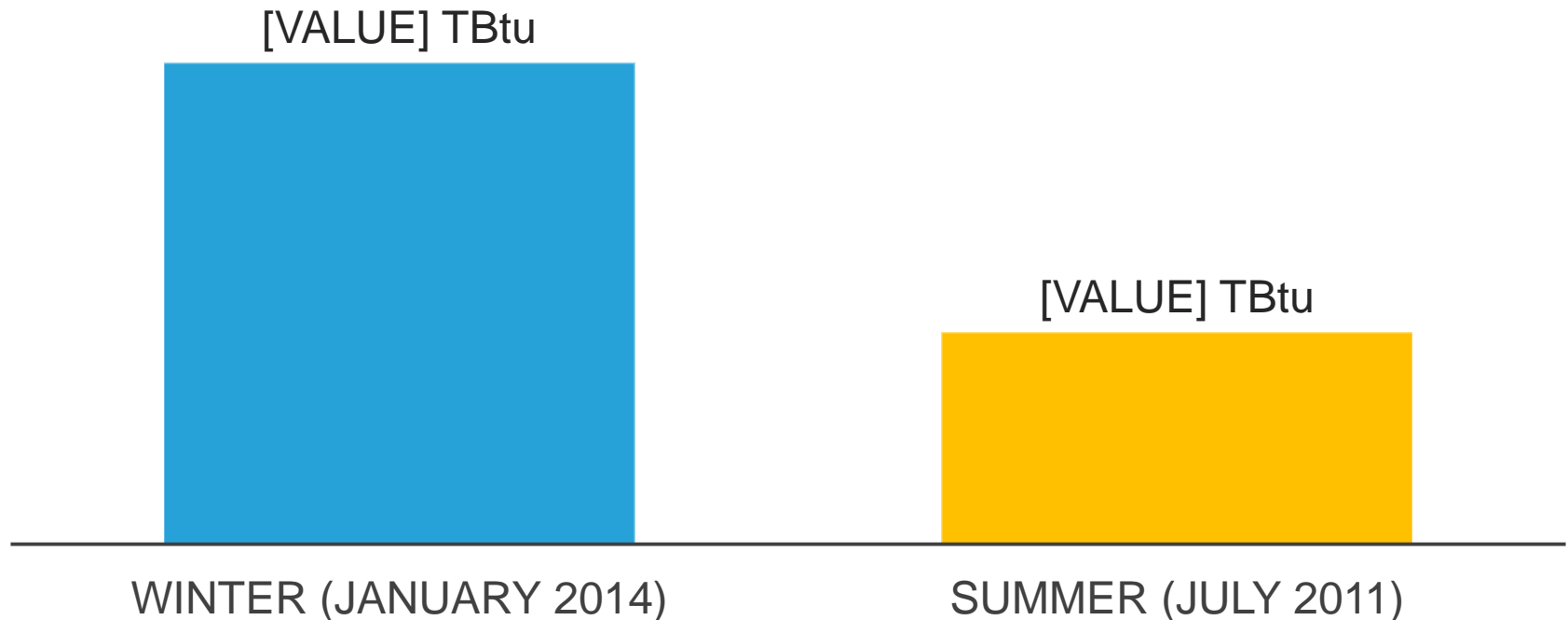
EPA Inventory of Greenhouse Gas Emissions & Sinks 2018 draft, data for 2016

Residential gas methane share based on gas consumption

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

Winter requires more energy than summer. Impacts of electrification must evaluate peak requirements

US Residential Monthly Winter & Summer Energy Consumption, Top Months 2010-2016



Source: EIA Monthly Energy Review

Policy-driven electrification of residential space and water heating will have significant impacts

- Consumer costs
- Infrastructure requirements
- Emissions
- Natural gas demand
- Regional differences



The abundance of North American natural gas is lowering energy costs to consumers and reducing emissions.



The market is turning a corner. Supply and demand are poised to grow to historic levels.



World Gas Conference 2018

In June 2018, energy industry leaders, policy-makers and experts from around the world will come together in Washington, DC for the 27th World Gas Conference, the leading global natural gas industry event.

www.wgc2018.org



**27th WORLD GAS
CONFERENCE**

WASHINGTON DC

JUNE 25-29 2018





**American Gas
Association**

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