

# U.S. natural gas outlook



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*For*

*National Conference of State Legislatures*

*August 28, 2019 | Chicago, IL*

*By*

*Stephen Nalley, Deputy Administrator*

## Key takeaways

- EIA projects U.S. energy production and demand will grow in the long term, with production growth outpacing demand growth. As a result, we expect that the United States will export more energy than it imports next year.
- Continued horizontal drilling and fracking in shale formations, once considered “unconventional,” will remain key to current and future natural gas and petroleum liquids production growth.
- Drilling for U.S. shale natural gas, particularly in the east, will continue to lead growth in natural gas production. One result has been record expansion of natural gas pipeline infrastructure as traditional supply and demand centers have changed.
- Strong growth in natural gas production is leading to rising natural gas exports. EIA expects U.S. liquefied natural gas (LNG) export capacity to continue to increase, with growing exports in the future.
- Lower natural gas prices provide competitive incentives for increased power generation from natural gas currently and in the future. Natural gas use for electric power generation overtook coal in 2016, and renewables continue to increase their share of total generation.



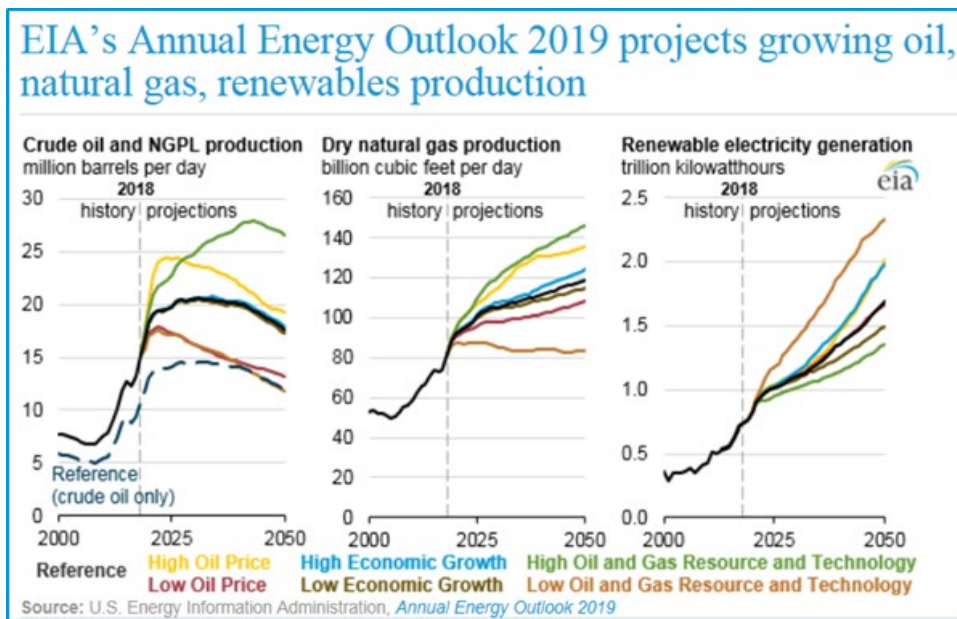
Independent Statistics & Analysis

U.S. Energy Information Administration

EIA collects, analyzes, and disseminates independent and impartial energy information to promote sound policymaking, efficient markets, and public understanding of energy and its interaction with the economy and the environment.

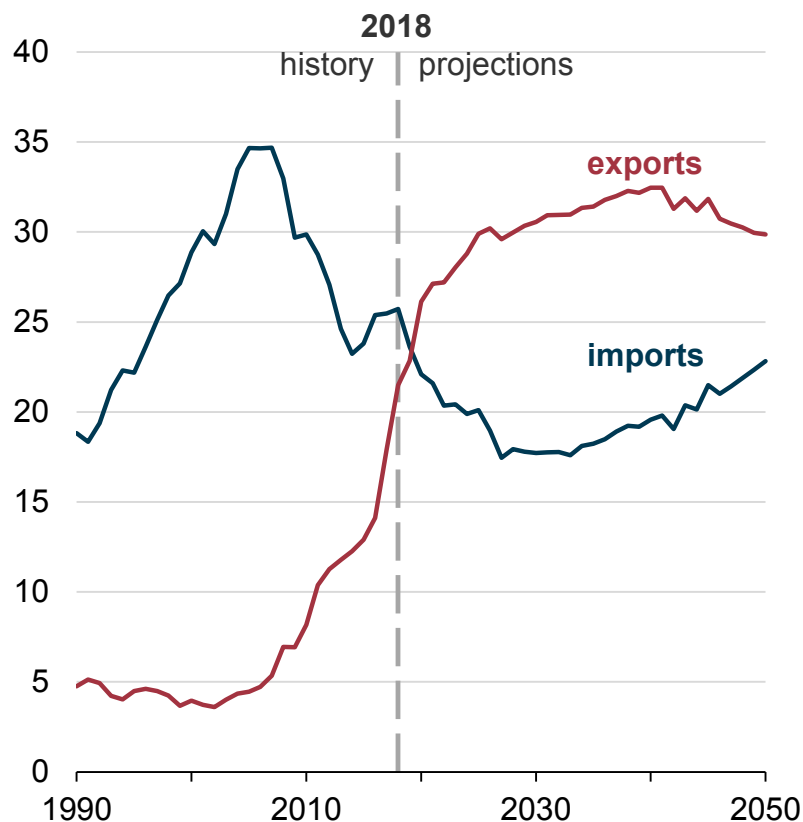
EIA's role is unique - by providing an unbiased view of energy markets, EIA increases transparency and promotes public understanding of important energy issues.

EIA has evolved its program in recent years to provide an expanding customer base with coverage of increasingly complex and interrelated energy markets.

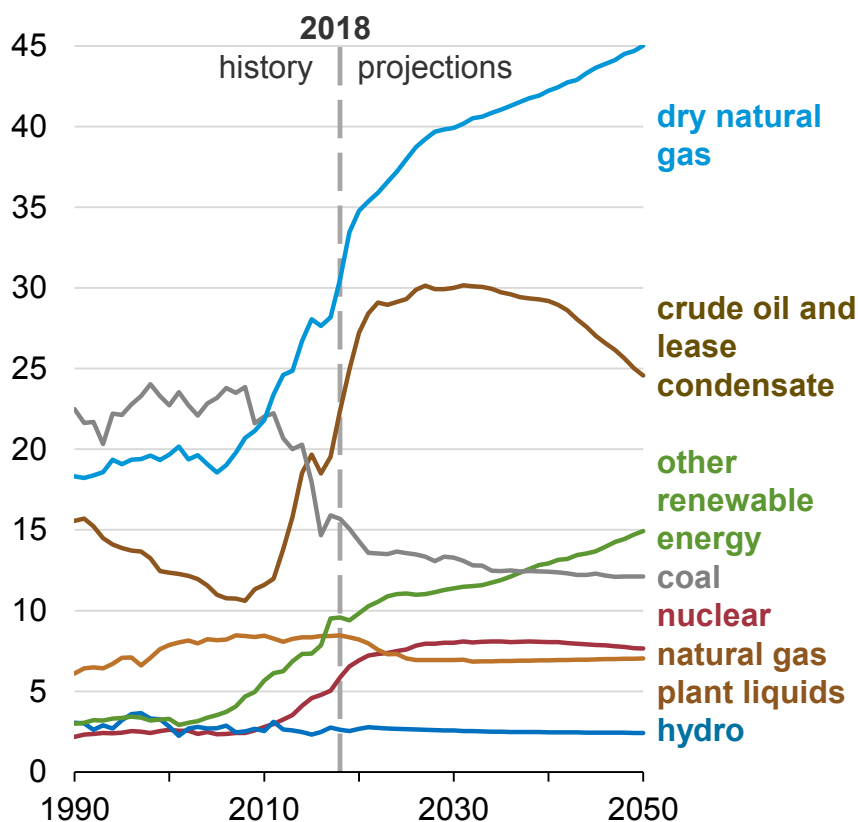


# U.S. energy exports will exceed imports after 2020

**Gross energy trade (Reference case)**  
quadrillion British thermal units

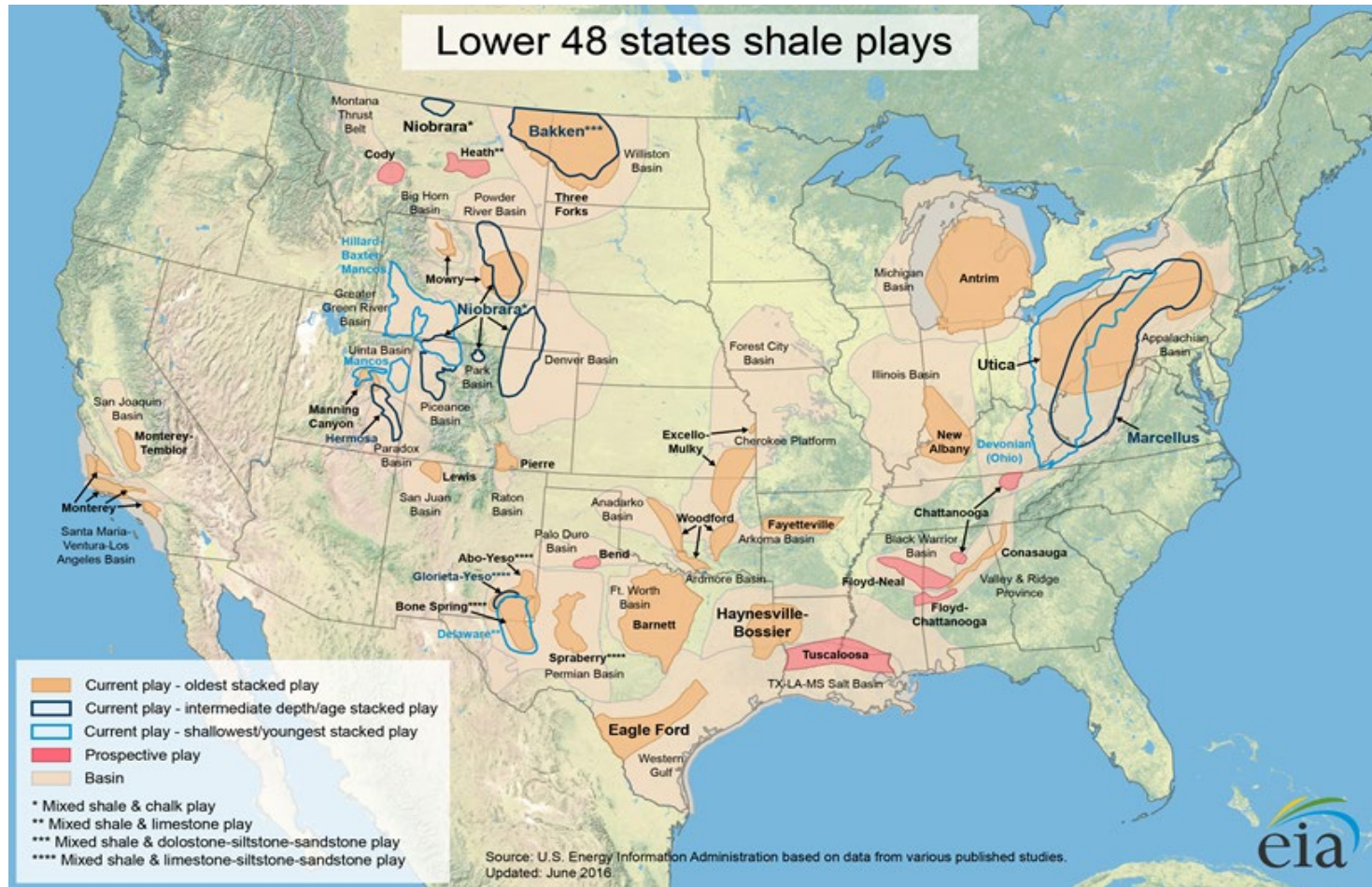


**Energy production (Reference case)**  
quadrillion British thermal units



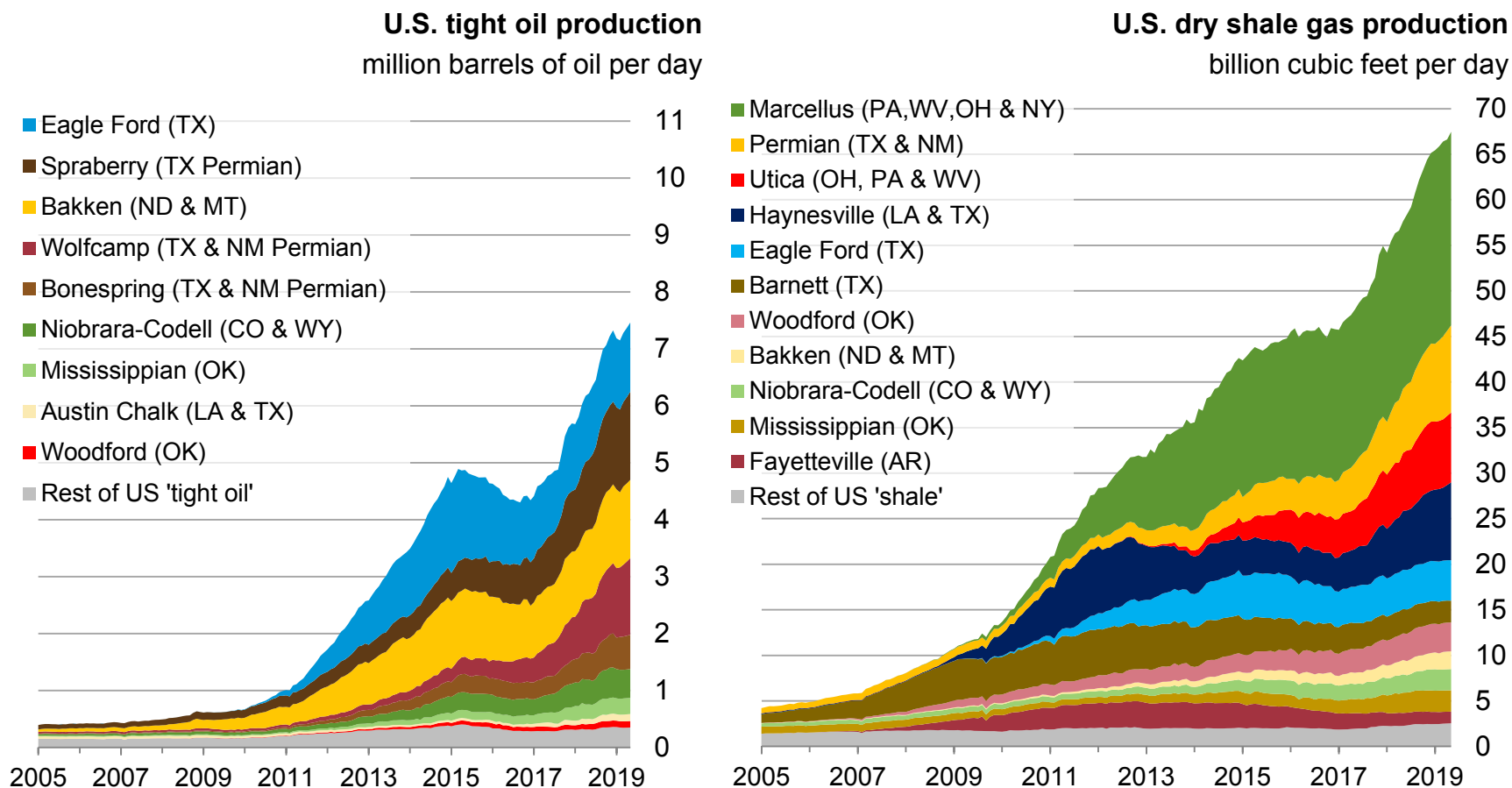
Source: U.S. Energy Information Administration, Annual Energy Outlook 2019

# Shale plays drive increasing U.S. oil and gas production



Source: U.S. Energy Information Administration based on data from various published studies.

# Shale and tight oil lead transformational U.S. production growth

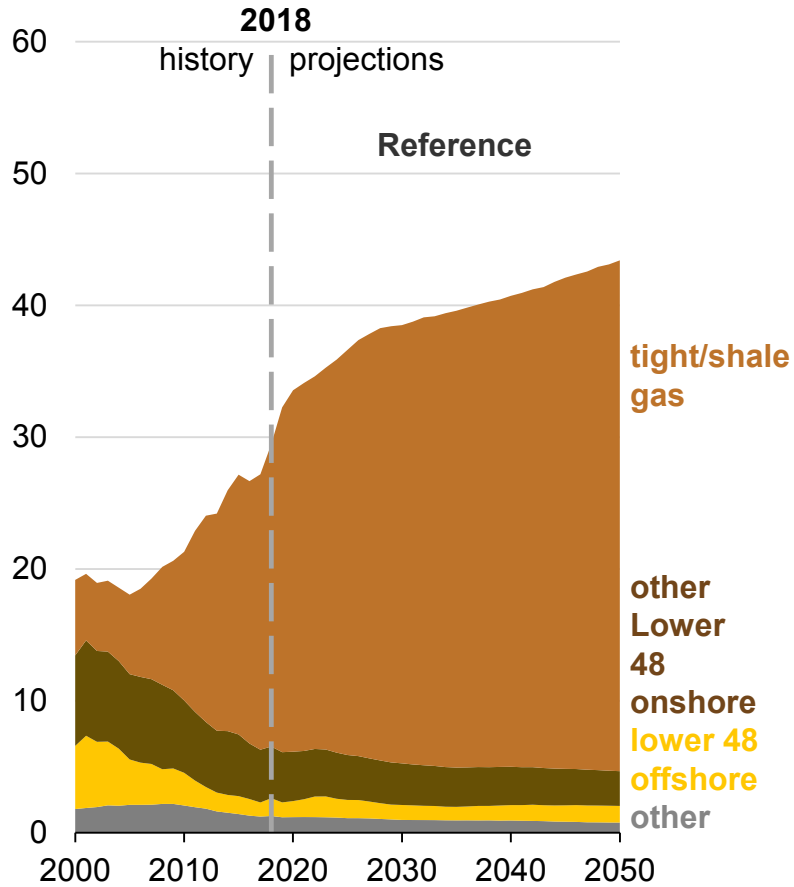


Note: Scales are presented as approximate barrel of oil equivalent

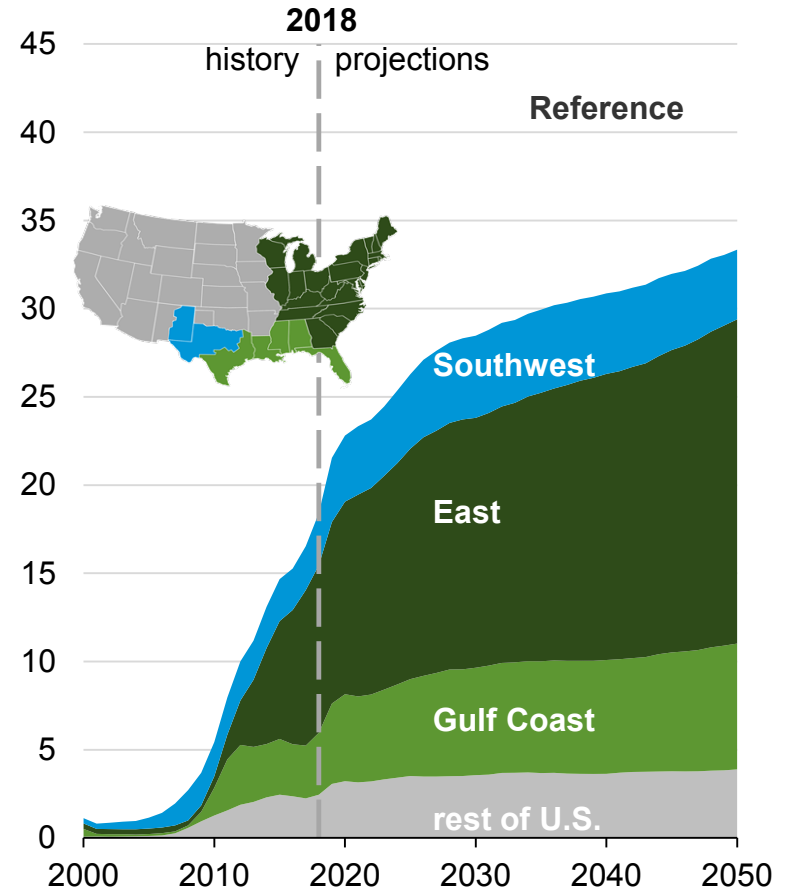
Sources: EIA derived data from state administrative data collected by DrillingInfo Inc. Data are through May 2019 and represent EIA's official tight oil and shale gas estimates, but are not survey data. State abbreviations indicate primary states.

# Eastern U.S. leads overall gas production growth

**Dry natural gas production by type**  
trillion cubic feet



**Dry shale gas production by region**  
trillion cubic feet

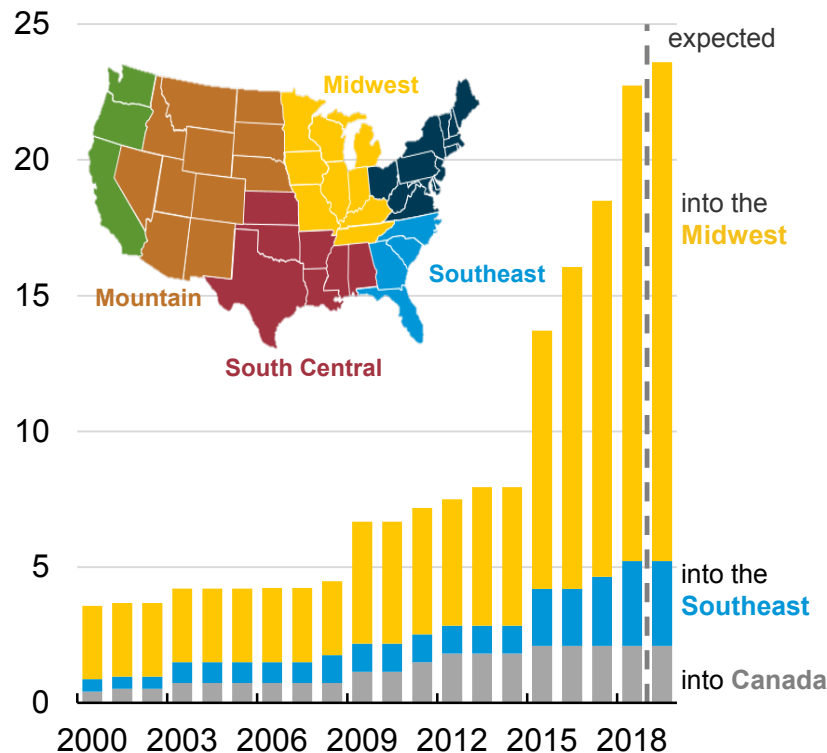


Source: U.S. Energy Information Administration, Annual Energy Outlook 2019

# Pipeline infrastructure evolves with changing supply and demand centers

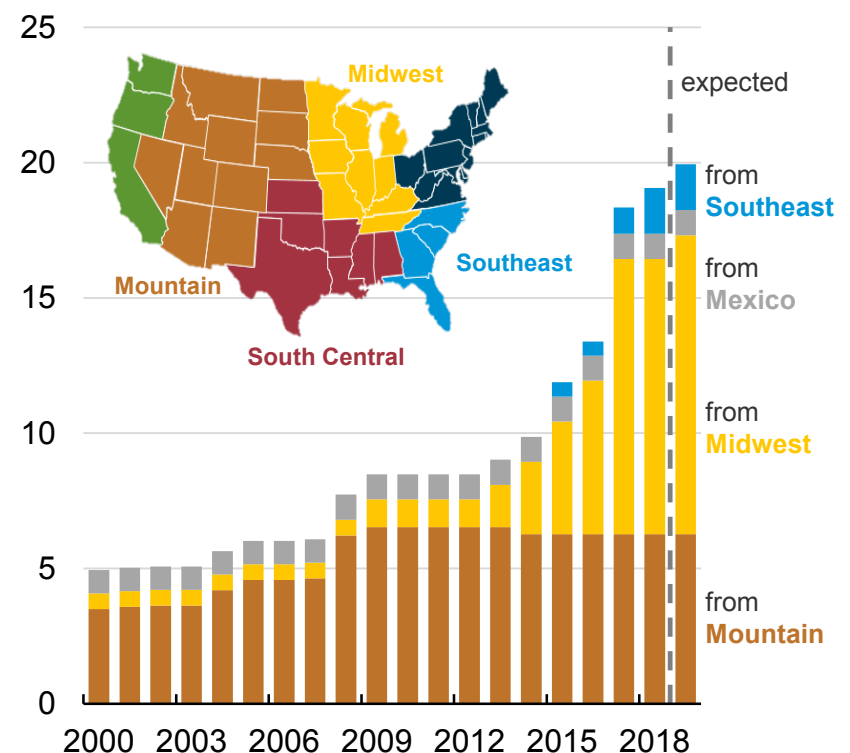
**Natural gas pipeline capacity out of the Northeast (2000-2019)**

billion cubic feet per day



**Natural gas pipeline capacity into the South Central (2000-2019)**

billion cubic feet per day

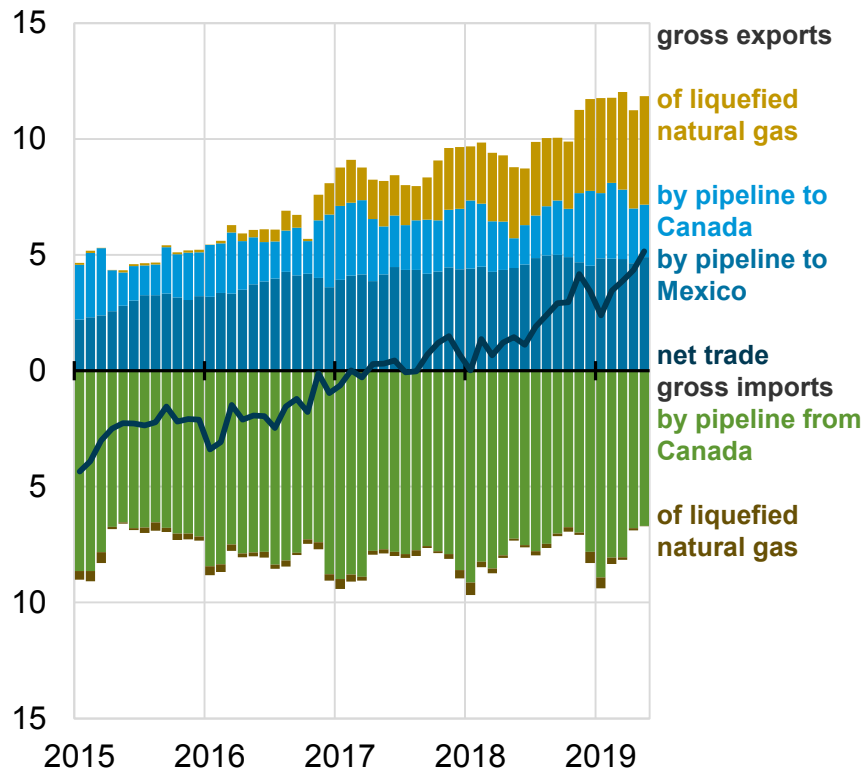


Source: U.S. Energy Information Administration, natural gas pipeline [U.S. state-to-state capacity](#) and natural gas [pipeline projects](#)

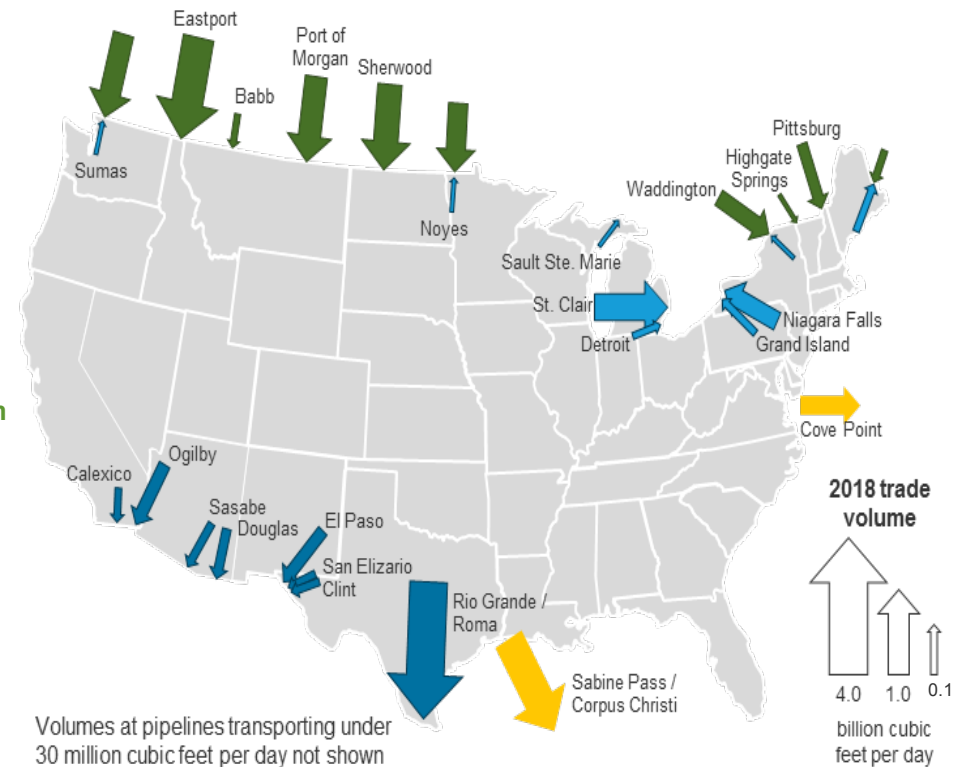


# The United States is already a net exporter of natural gas

Monthly U.S. natural gas trade (Jan 2016-May 2019)  
billion cubic feet per day



U.S. natural gas trade by pipeline by point of entry (imports) or exit (exports) and LNG (exports)

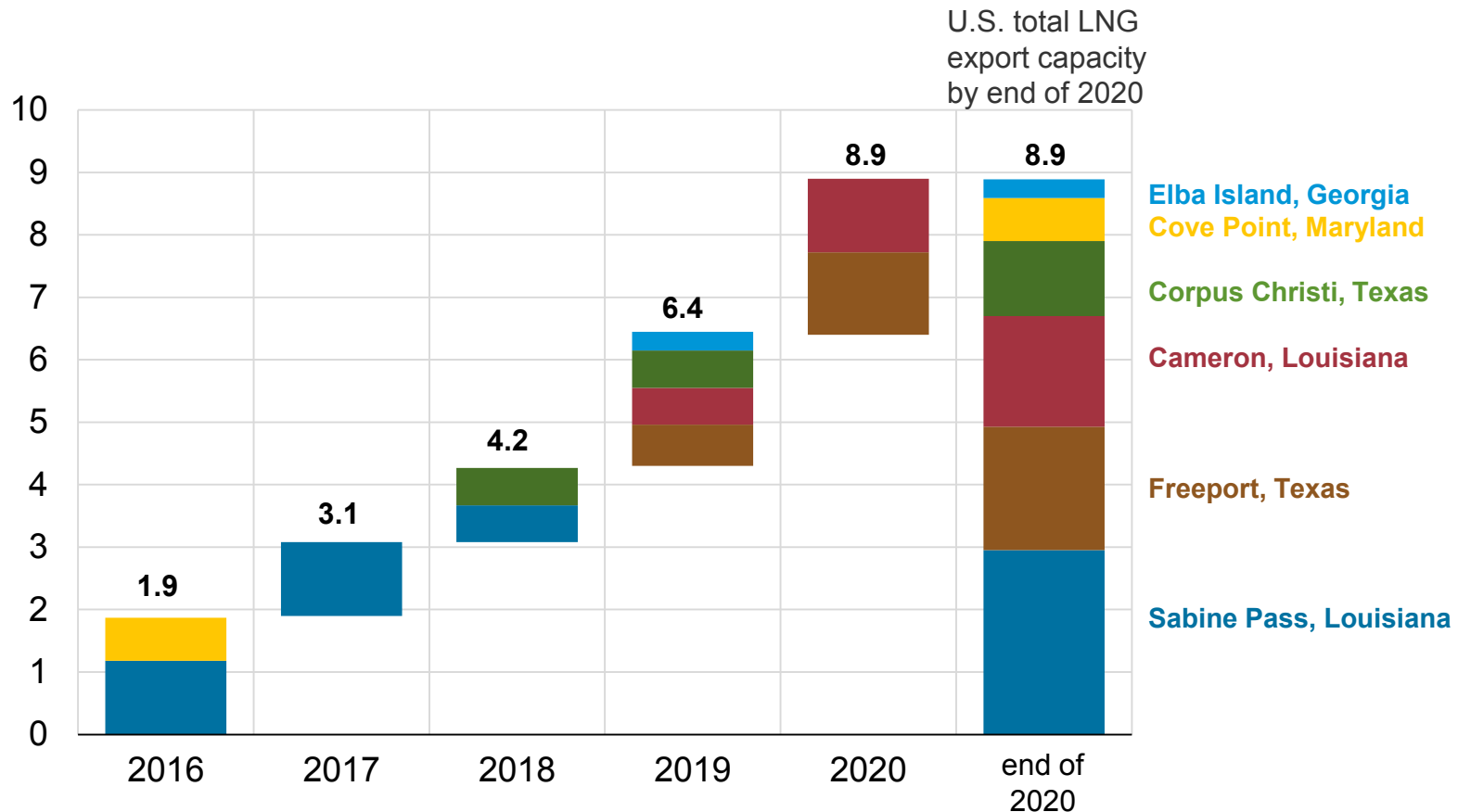


Source: U.S. Energy Information Administration, Natural Gas Monthly

# U.S. LNG export capacity will increase through 2020

## Changes in U.S. liquefied natural gas export capacity (2019-2020)

billion cubic feet per day

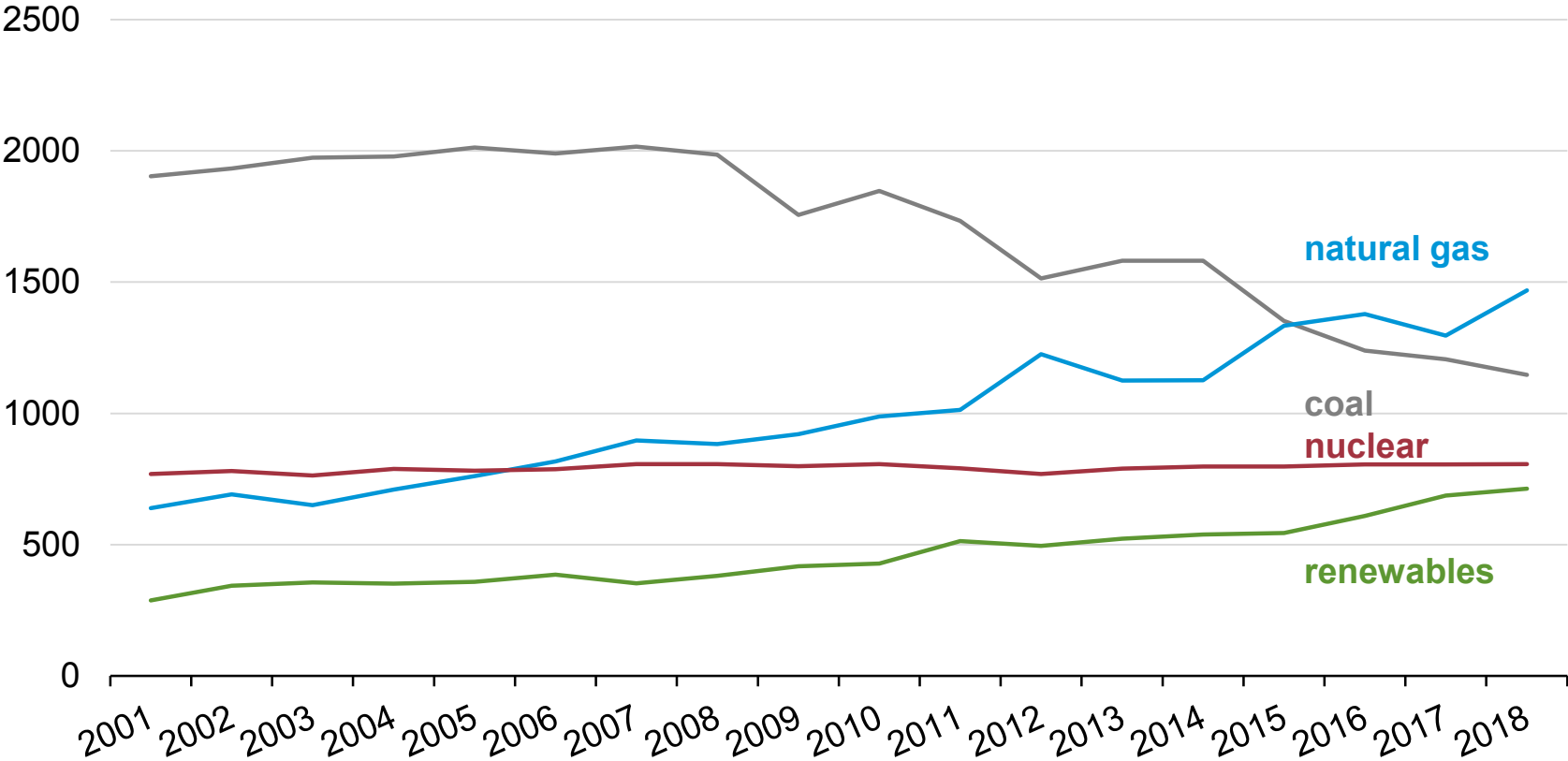


Source: U.S. Energy Information Administration, [Existing and under-construction large-scale U.S. liquefaction facilities in the United States](#)

# The U.S. electricity generation fuel mix has changed

U.S. annual electricity generation from selected sources (2001-2018)

million megawatthours

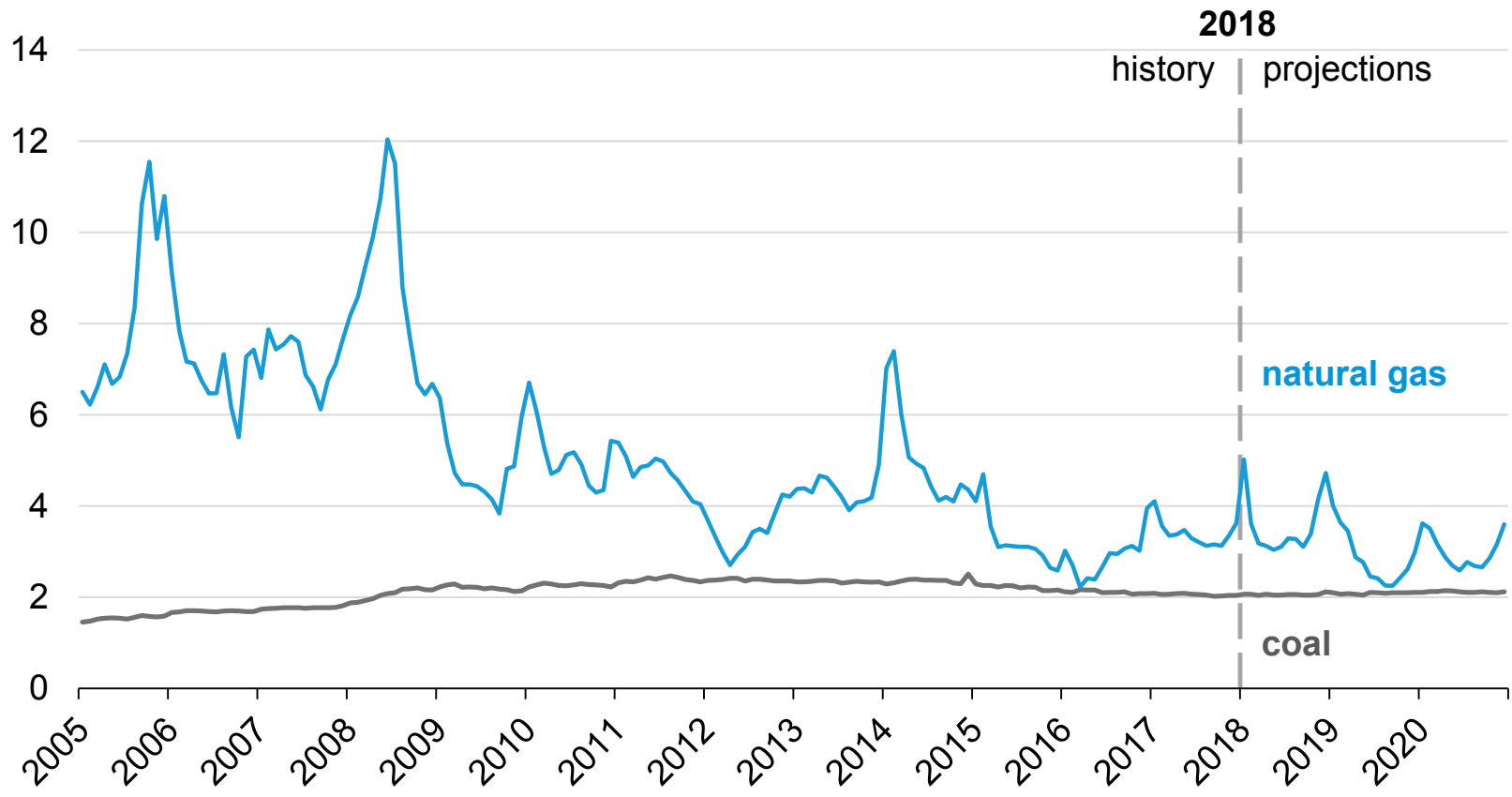


Source: U.S. Energy Information Administration, Electric Power Monthly July 2019

# Natural gas prices are competitive for electricity generation

## Average U.S. costs for fossil fuels for generation

\$/MMBtu

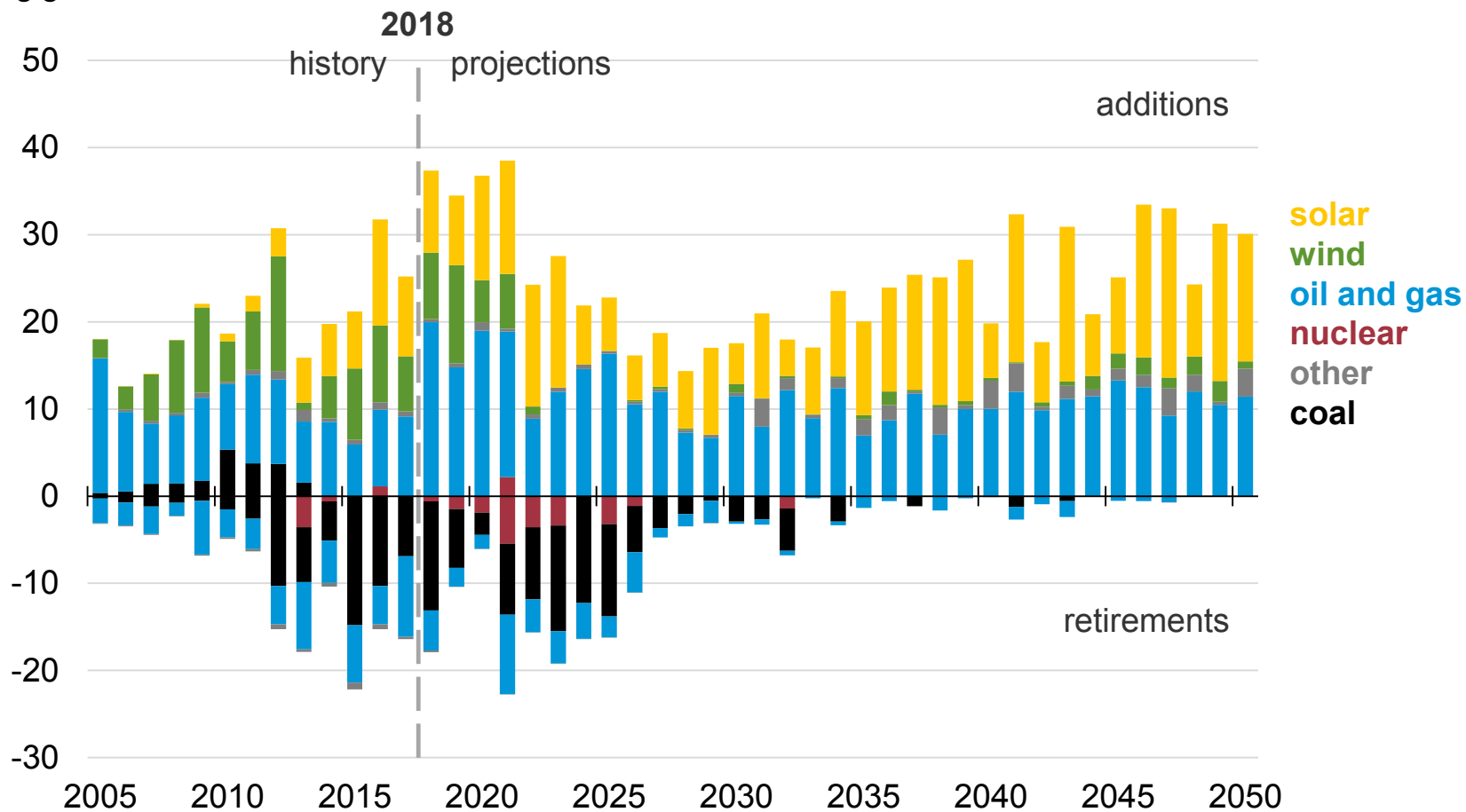


Source: U.S. Energy Information Administration, Short-Term Energy Outlook August 2019

# New generating capacity will come from gas and renewables

## Annual electricity generating capacity additions and retirements

gigawatts



Source: U.S. Energy Information Administration, Monthly Energy Review and Annual Energy Outlook 2019

## For more information

U.S. Energy Information Administration home page | [www.eia.gov](http://www.eia.gov)

Short-Term Energy Outlook | [www.eia.gov/steo](http://www.eia.gov/steo)

- Winter Fuels Outlook (October 8, 2019)

Annual Energy Outlook | [www.eia.gov/aeo](http://www.eia.gov/aeo)

- AEO2020 release in January 2020

State Energy Portal | <https://www.eia.gov/beta/states/overview>

International Energy Outlook | [www.eia.gov/ieo](http://www.eia.gov/ieo)

- IEO2019 release in September 2019

Today in Energy | [www.eia.gov/todayinenergy](http://www.eia.gov/todayinenergy)