



Introduction to the EIA and the U.S. Natural Gas Market

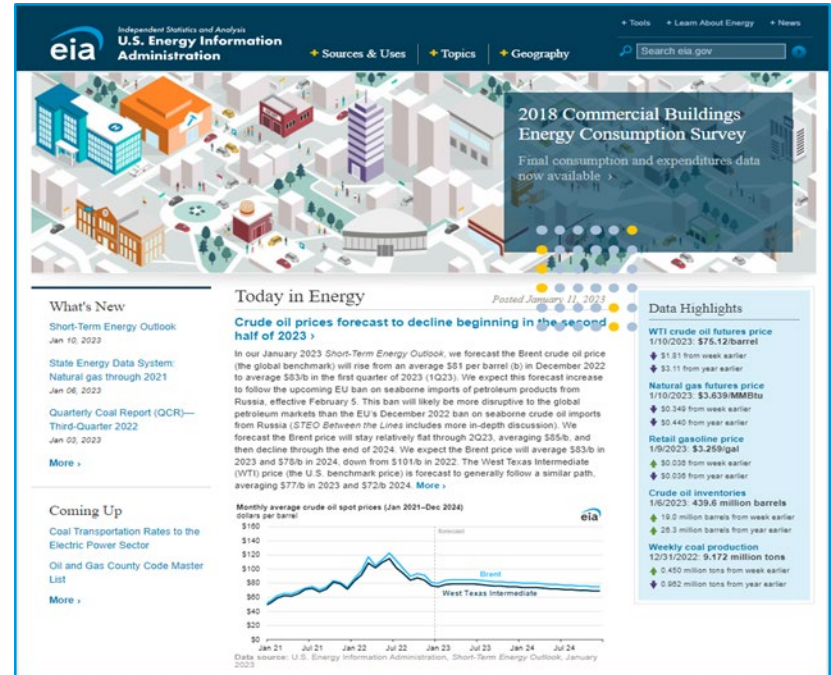
For U.S. Coast Guard Liquefied Gas and Alternative Fuels Senior Executive Forum

*Joseph DeCarolis, EIA Administrator
January 18, 2023 | Houston, TX*

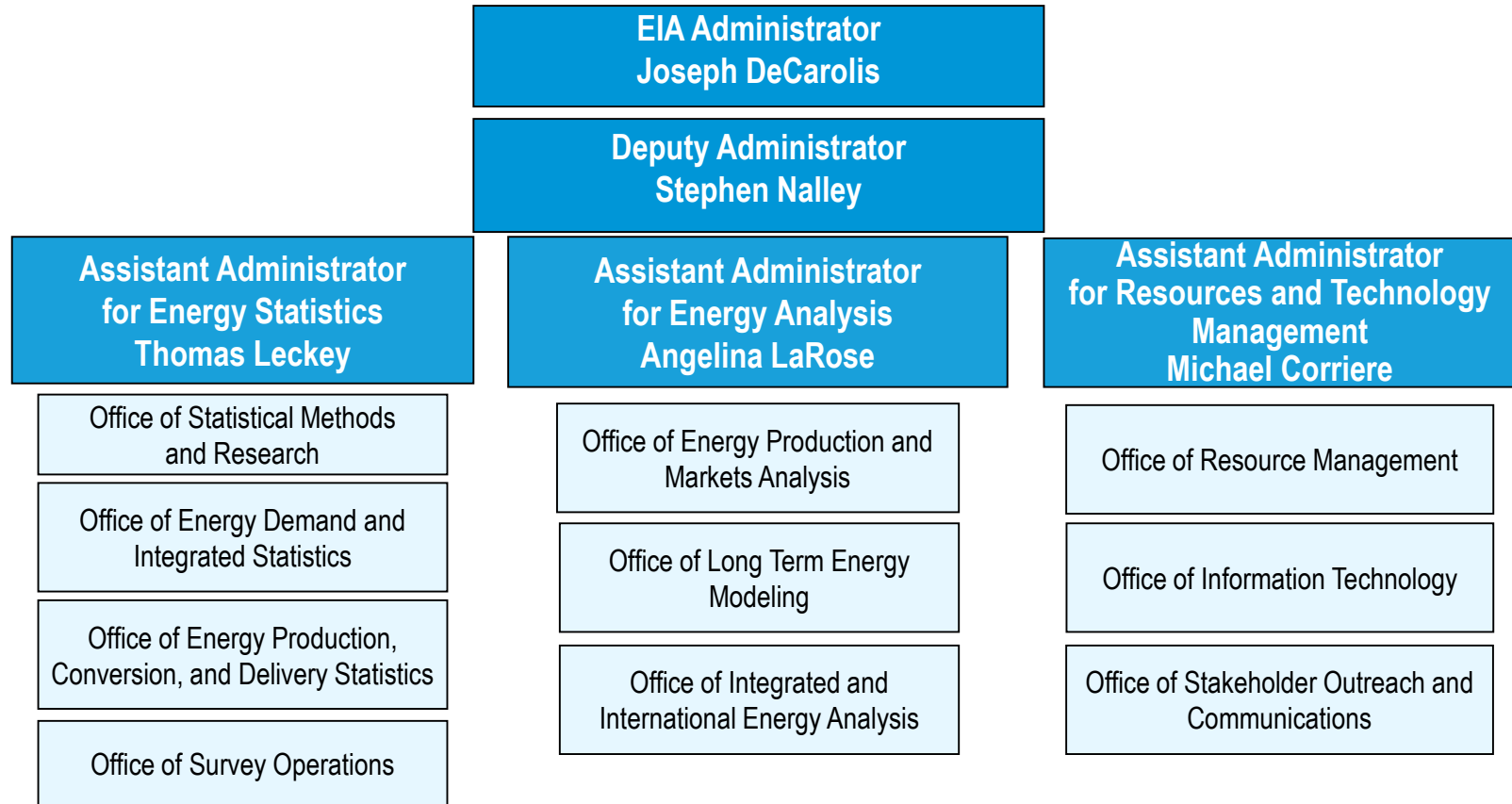
The U.S. Energy Information Administration (EIA) is one of 13 principal federal statistical agencies.

Mission: 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.

By law, EIA's data and analyses do not require approval by any other officer or employee of the United States Government.

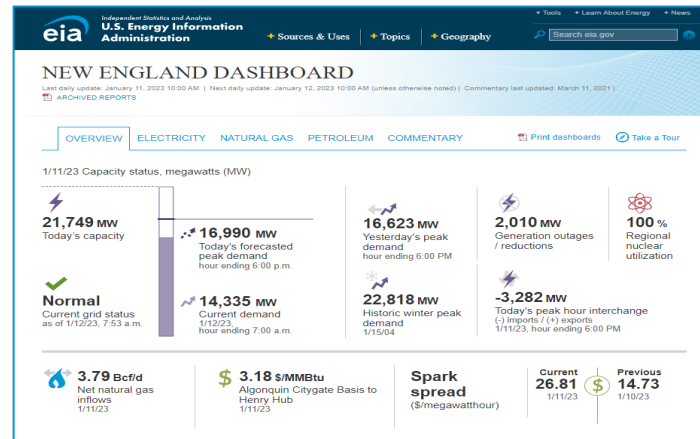
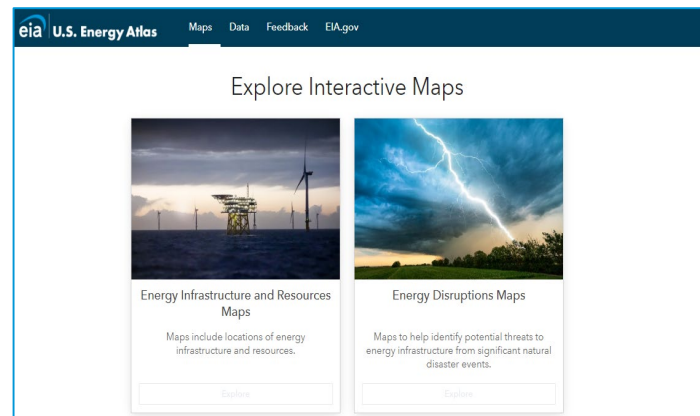


EIA's organizational structure



Improving data accessibility is key to EIA's mission

- EIA is working to develop new dashboard-based applications to enhance data delivery and enable a more user-friendly experience on our website.
- The *U.S. Energy Atlas* provides user-configurable maps of U.S. energy resources and infrastructure.
- The *New England Dashboard* delivers relevant regional energy data and commentary.
- We plan to launch a new grid operations dashboard later this year that will provide expanded electricity markets data from Regional Transmission Organizations.
- We are also exploring the creation of new dashboards that highlight data across the enterprise.



EIA's analysis brings context and meaning to energy data

Short-Term Energy Outlook (STEO)

- Monthly forecasts of U.S. and global supply, consumption, trade, stocks, prices, and energy-related carbon dioxide emissions with a horizon of 12 to 24 months.

Annual Energy Outlook (AEO)

- Projects U.S. energy supply, consumption, and trade over a 30-year period; the AEO is produced using EIA's National Energy Modeling System (NEMS).

International Energy Outlook (IEO)

- Projects global energy supply, consumption, and trade over a 30-year period; the IEO is produced using EIA's World Energy Projection System (WEPS).

Other Reporting and Analysis

- *This Week in Petroleum* and *Natural Gas Weekly Update* summarize weekly developments in respective markets.
- *Today in Energy* summarizes topical energy trends, published daily on the EIA homepage.
- Reports for Congress and key stakeholders

For more information

U.S. Energy Information Administration home page | www.eia.gov

Annual Energy Outlook | www.eia.gov/aeo

Short-Term Energy Outlook | www.eia.gov/steo

International Energy Outlook | www.eia.gov/ieo

Monthly Energy Review | www.eia.gov/mer

Today in Energy | www.eia.gov/todayinenergy

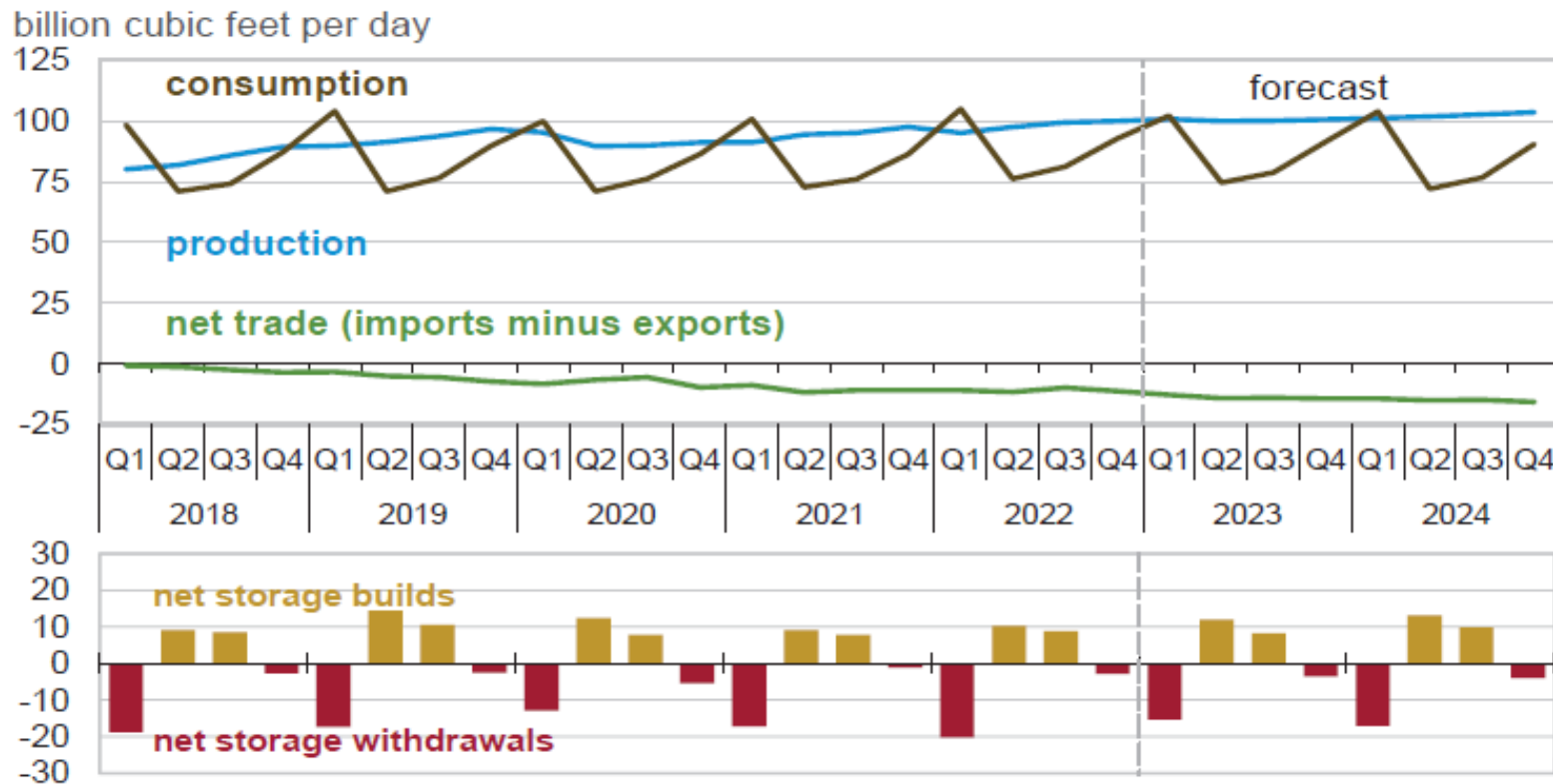
State Energy Profiles | www.eia.gov/state

Natural Gas Markets

Natural Gas Issues

- Dynamic changes to natural gas supply and demand
- Short- and long-run changes to electric sector mix
- Growing exports of U.S. liquefied natural gas (LNG)
- Russia's full-scale invasion of Ukraine

U.S natural gas production, consumption, and net imports

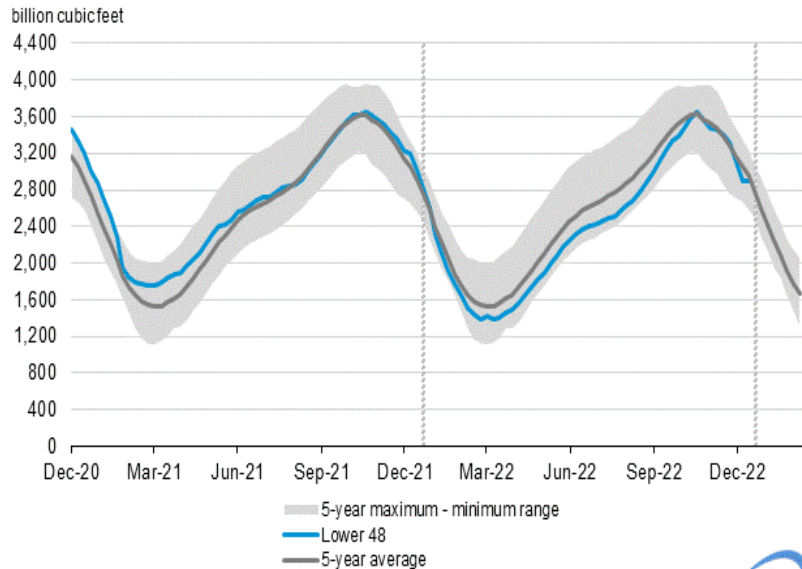


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, January 2023



Natural gas inventories approach five-year averages; more inelastic supply/demand means moderate changes in stocks have outsized price effects

Working gas in underground storage compared with the 5-year maximum and minimum



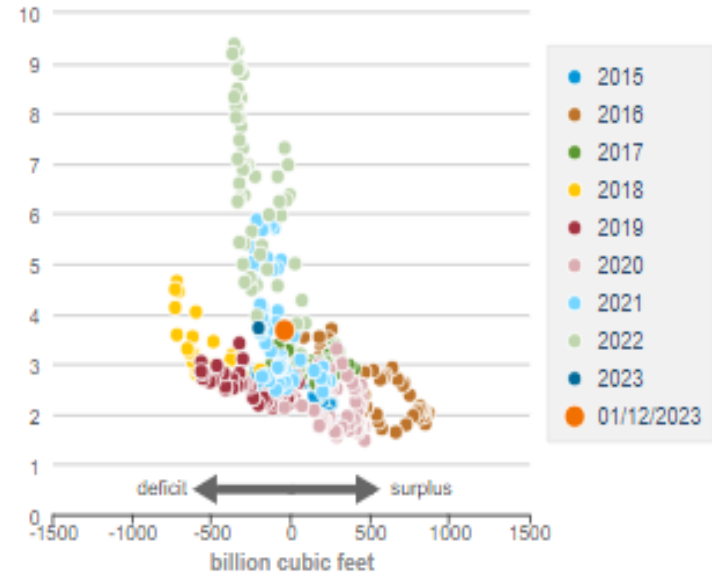
Data source: U.S. Energy Information Administration



Note: The shaded area indicates the range between the historical minimum and maximum values for the weekly series from 2018 through 2022. The dashed vertical lines indicate current and year-ago weekly periods.

Lower 48 weekly working gas stocks, minus five-year average, and near-month futures prices

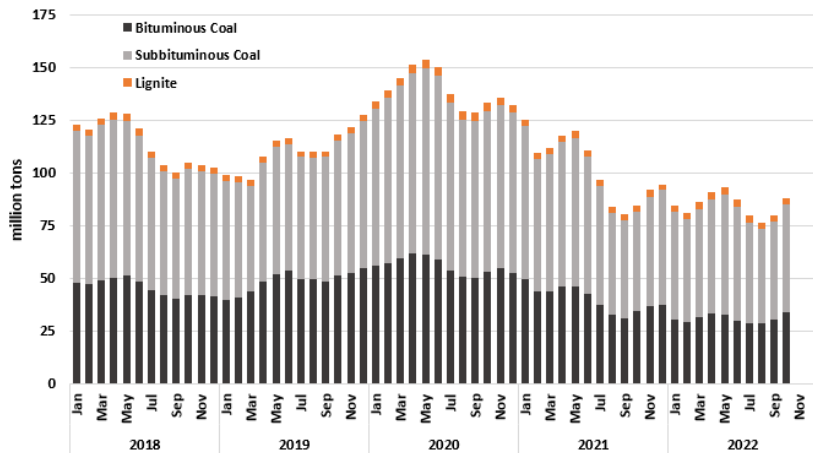
price of gas at the Henry Hub in dollars per million British thermal units



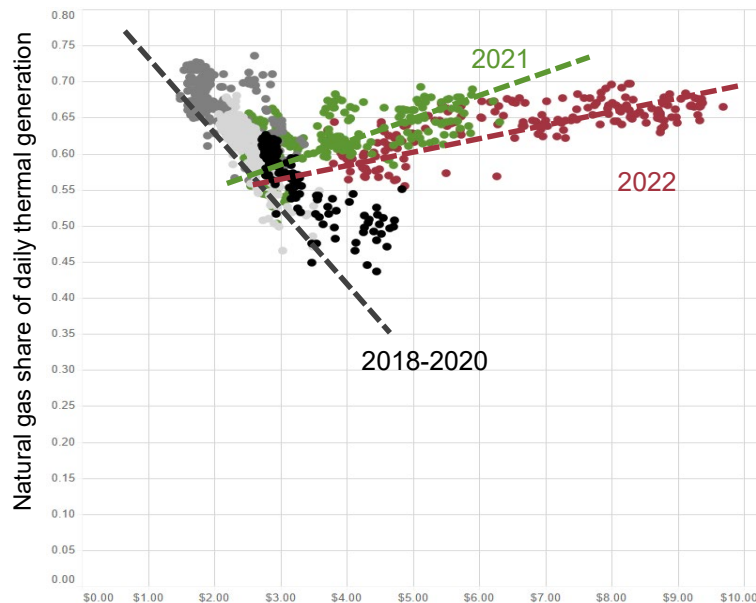
Data sources: U.S. Energy Information Administration Weekly Natural Gas Storage Report and Natural Gas Storage Dashboard

Thermal coal stocks held by utilities have been declining; natural gas' share of daily generation is high despite elevated natural gas prices

Electricity utility coal stocks by rank and month since 2018
million tons



Natural gas' share of daily thermal generation relative to near-month natural gas futures prices



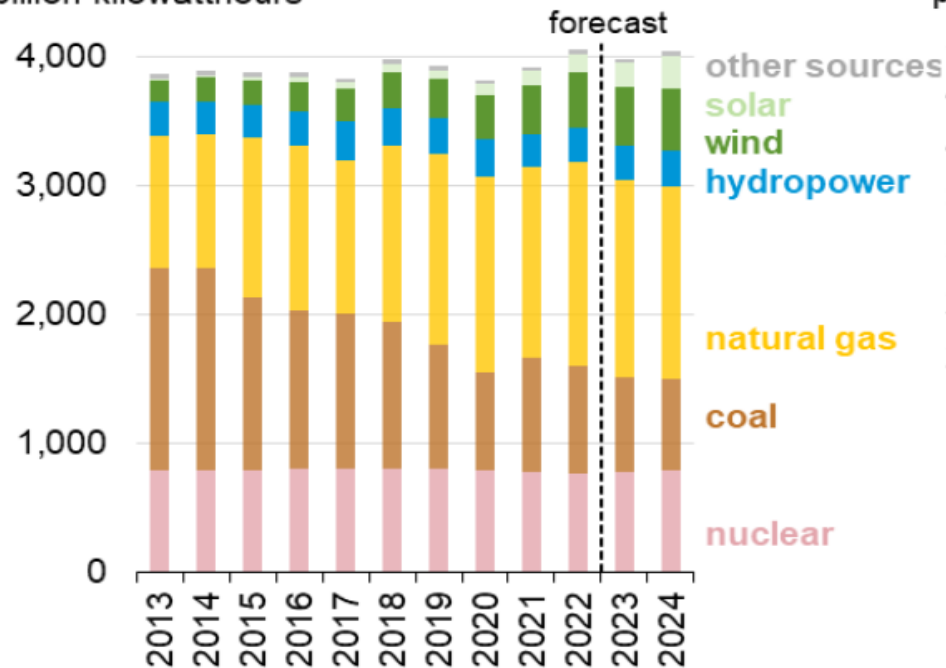
Near-month natural gas futures prices in \$/MMBtu

Data sources: U.S. Energy Information Administration, Forms 923 and 930, Bloomberg, L.P.

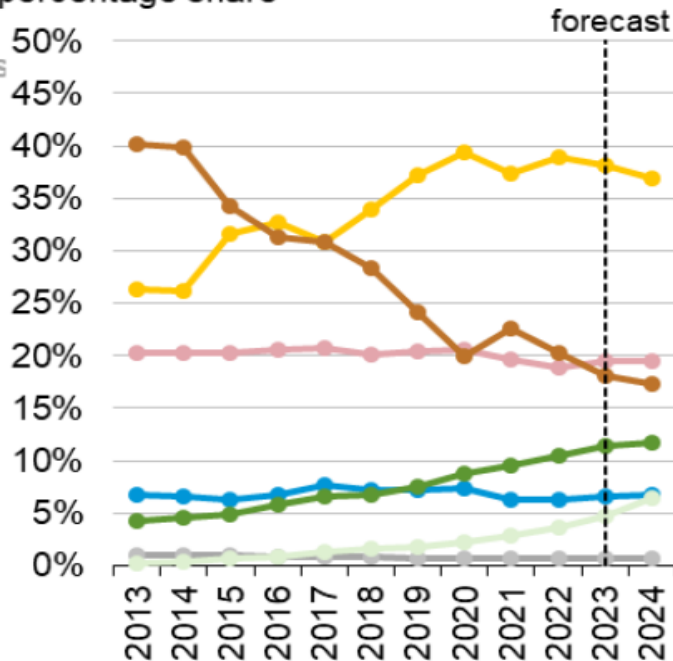
Increased renewables deployment expected through 2024

U.S. electricity generation by source, all sectors

billion kilowatthours



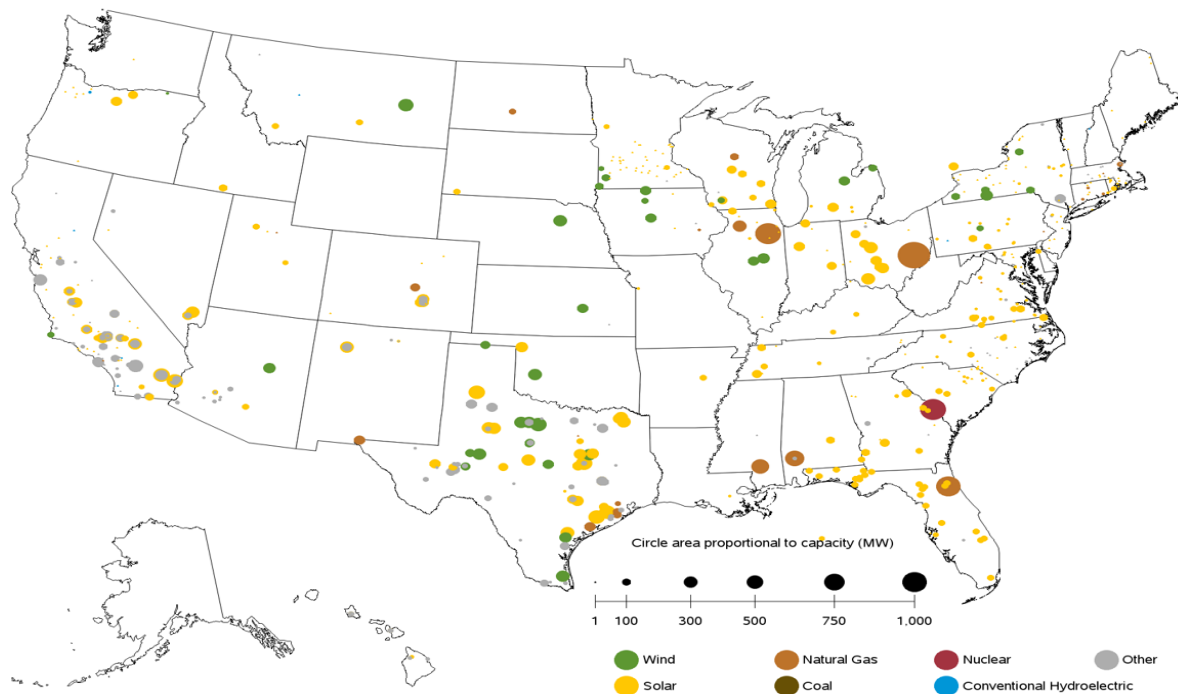
percentage share



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, January 2023



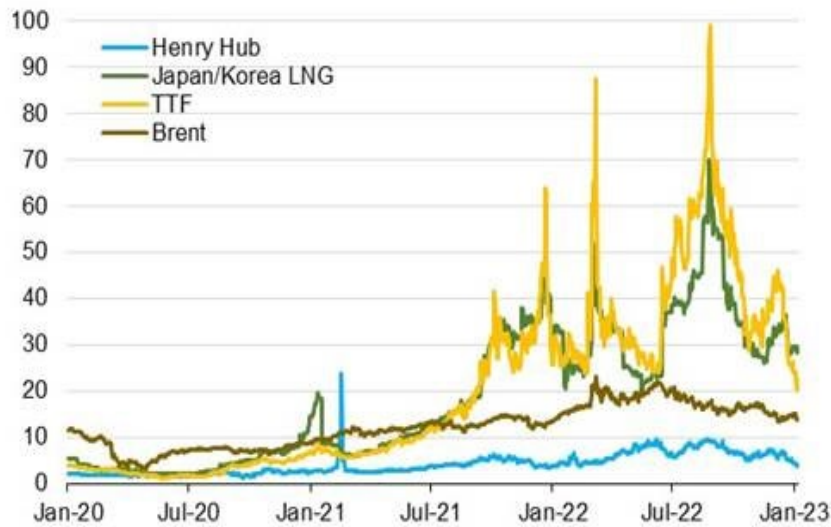
Planned generator capacity additions over the next year



Data sources: U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report' and Form EIA-860M, 'Monthly Update to the Annual Electric Generator Report.'

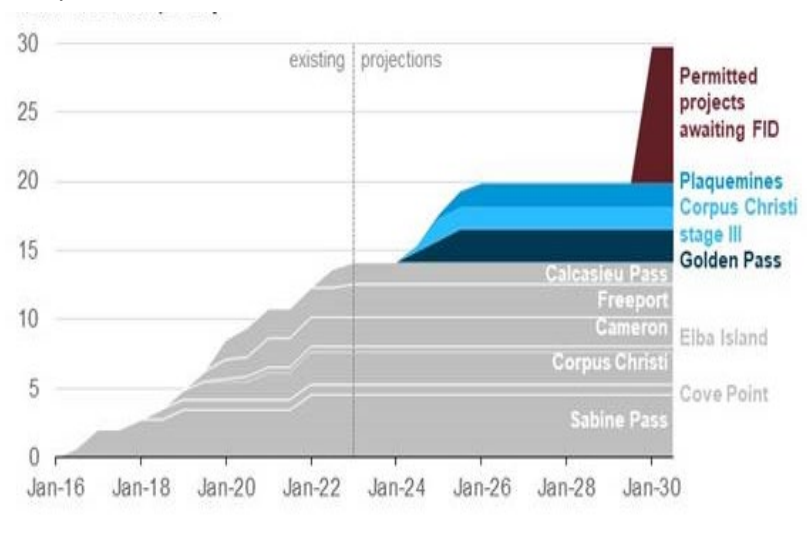
Growing LNG exports are connecting the United States to the global market

International natural gas prices and Brent crude oil
\$/MMBtu



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022 with data from CME Group and Bloomberg L.P.

U.S. LNG export projects: existing, under construction, and permitted awaiting final investment decision
Bcf/d



Note: EIA estimates are based on information from Federal Energy Regulatory Commission and U.S. Department of Energy filings, company websites, trade press, and other industry sources

Data source: U.S. Energy Information Administration, Liquefaction Capacity File

LNG Ship traffic from US Gulf Coast to Europe



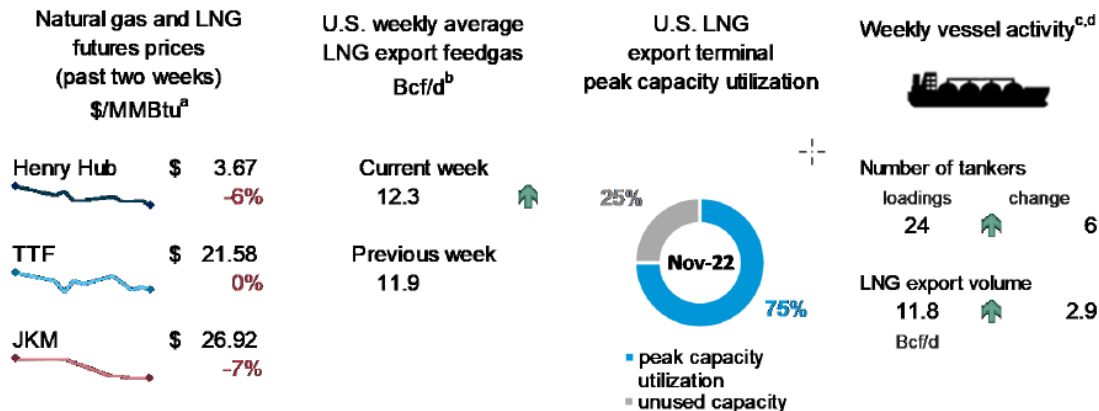
- 60 to 90 ships per month in 2022 transited from the US to Europe, most from the Gulf Coast.
- US LNG shipments to Europe exceed average daily natural gas demand in California.

Data source: Market Intelligence Network, The TradeNet, S&P Global Commodity Insights, traffic on January 11, 2023.

Tracking Natural Gas Prices and Trade



Market indicators



Each LNG tanker holds ~ 3.5 Bcf

Data sources: U.S. Energy Information Administration, U.S. Department of Energy, PointLogic, CME Group, Bloomberg L.P., and Gas Infrastructure Europe (AGSI+)

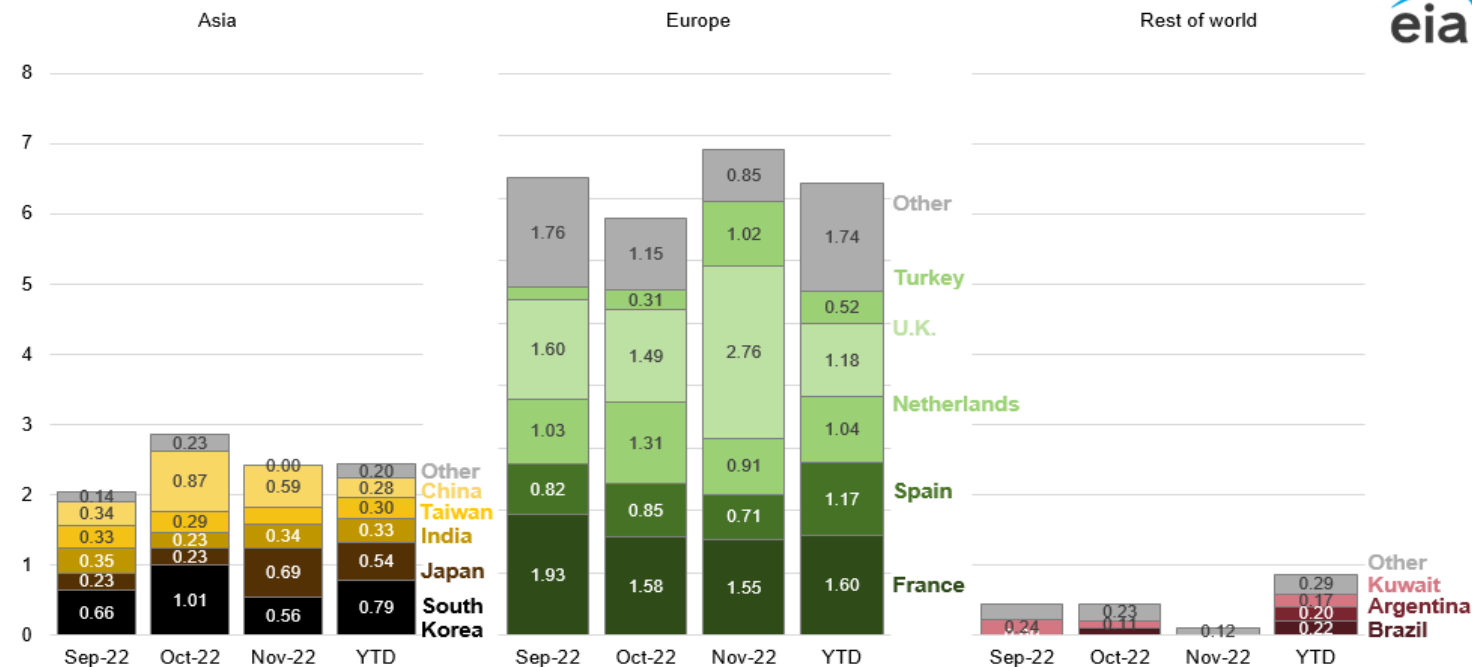
Note: LNG = liquefied natural gas, MMBtu = million British thermal units, and Bcf/d = billion cubic feet per day.

- a. Current weekly average price, week ending through Friday, January 13, 2023, compared to prior weekly price average.
- b. Current weekly average rate, week ending through Friday, January 13, 2023, compared to prior weekly average rate.
- c. For week ending through Wednesday, January 11, 2023, compared to prior week ending through Wednesday, January 04, 2023.
- d. Liquefied natural gas (LNG) export volume is estimated using the carrying capacity of vessels and historical capacity utilization.
- e. U.S. working natural gas as of Friday, January 06, 2023. EU working natural gas as of Friday, January 13, 2023.

LNG exports by month and destination

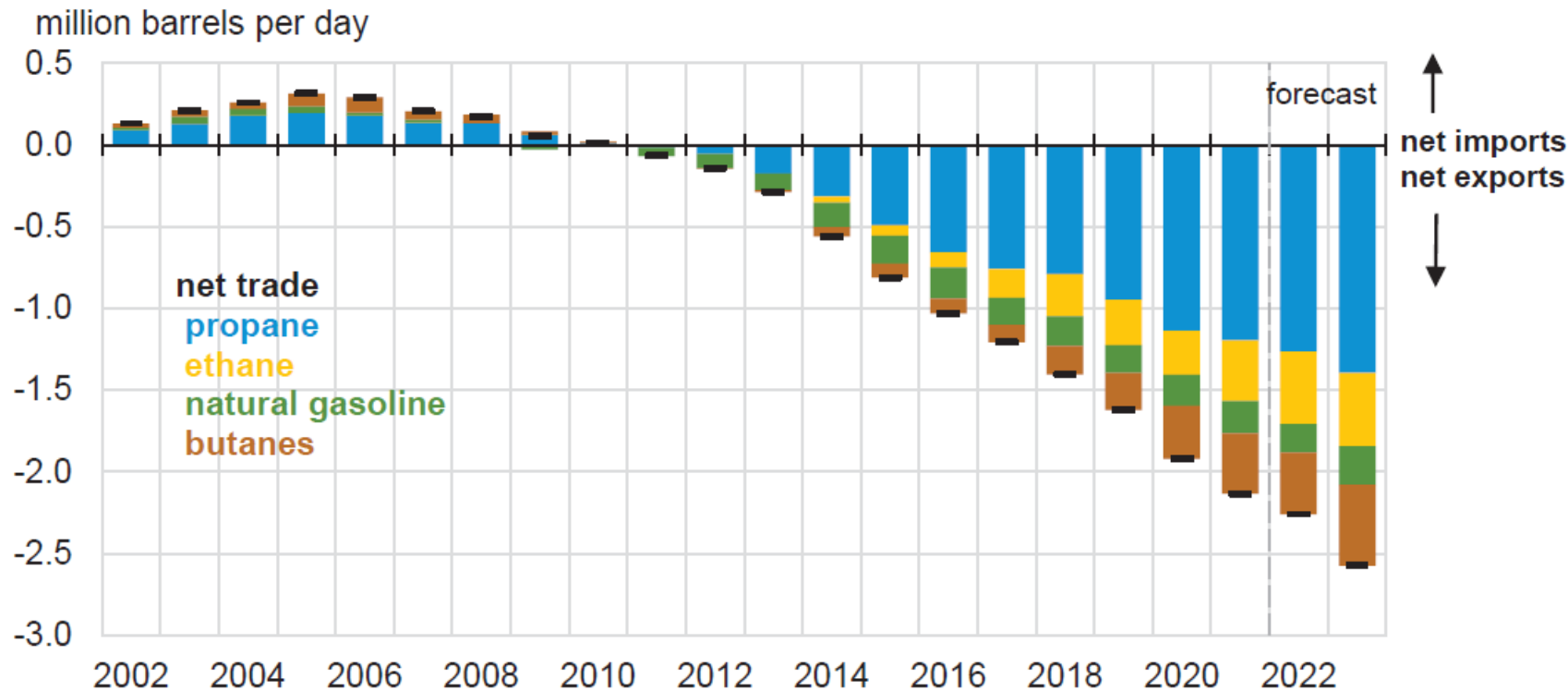
Vessel-borne LNG exports from U.S. export terminals by destination (Aug 2022–Oct 2022 and 2022 year to date)

billion cubic feet per day (Bcf/d)



Data sources: U.S. Energy Information Administration, U.S. Department of Energy, "LNG Monthly", Bloomberg, L.P., IHS Markit, and Refinitiv

U.S. net trade of hydrocarbon gas liquids (HGLs); low flash point fuels



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, January 2023

EIA natural gas resources

- [Today in Energy articles](#)
- [Natural Gas Weekly Update](#)
- [Natural Gas Storage Dashboard](#)
- Natural Gas Market Indicators Report – coming late January
- LNG Issues in Focus – latter half of this year

NATURAL GAS STORAGE DASHBOARD

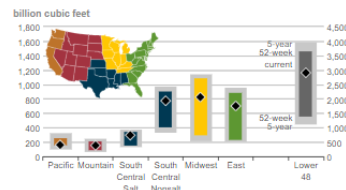
Dashboard last updated: January 12, 2023 | Next update: January 19, 2023 | Commentary last updated: October 7, 2022 | [ARCHIVED REPORTS](#)

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Lower 48 working gas in underground storage as of January 6, 2023: 2,902 Bcf | Weekly net change: ▲ 11 Bcf

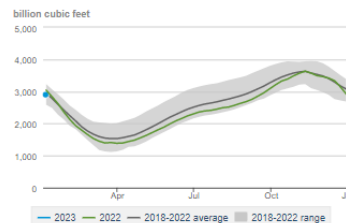
Underground working natural gas storage summary as of January 6, 2023



Underground storage capacity utilization

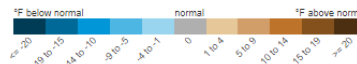
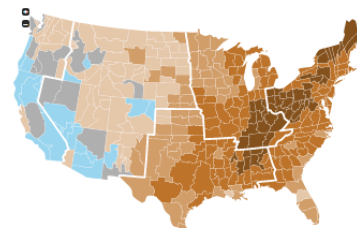


Lower 48 weekly working gas in underground storage

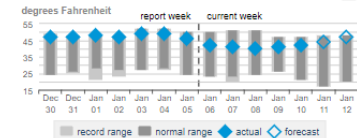


[DEPARTURE FROM NORMAL](#) [WEEKLY CHANGE](#) [DAILY ANIMATION](#)

Weekly average departure from normal temperatures as of January 5, 2023



Daily Lower 48 average temperatures



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