
Electricity markets

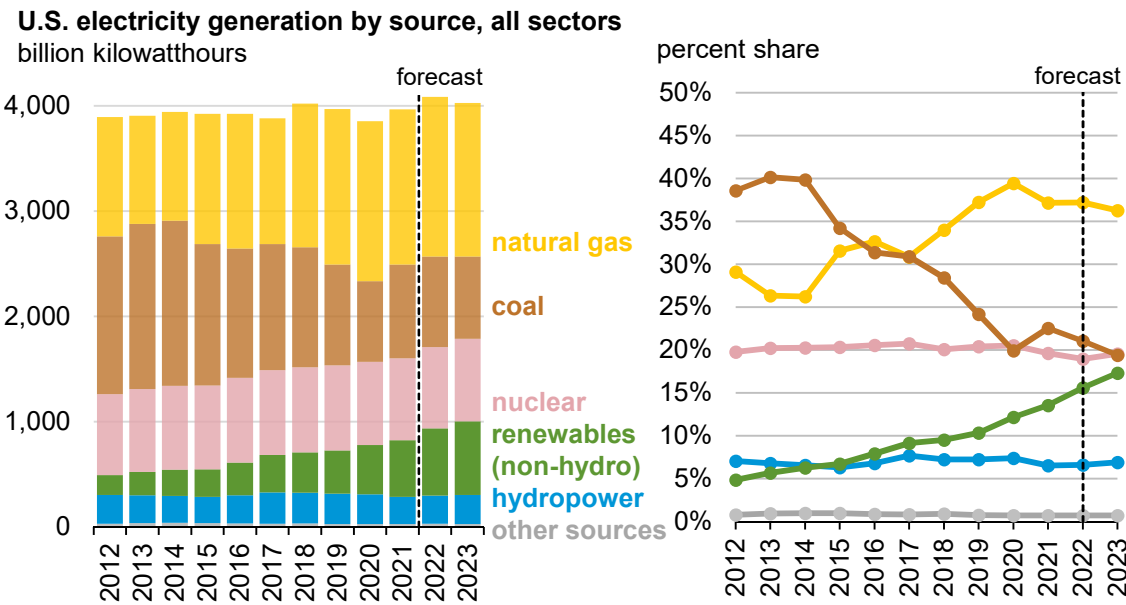


*Katy Fleury and Lori Aniti
Council of Industrial Boiler Owners, September 20, 2022*

Key takeaways

- According to EIA's *Short-Term Energy Outlook* (STEO):
 - The share of renewable generation will continue to increase through 2023
 - The share of coal generation will continue to decline through 2023 after increasing in 2021
 - Although high temperatures and high natural gas prices should have increased coal's share of generation in 2022, labor shortages in the rail sector, coal plant closures, and recent mine closures limited coal availability
 - Warmer temperatures and greater economic activity is increasing electricity consumption in 2022
 - Retail electricity prices are expected to rise through the summer of 2023 as a response to high natural gas prices
 - The generation mix and temperature affects electricity prices

Renewable electricity generation rises while coal generation declines in the United States

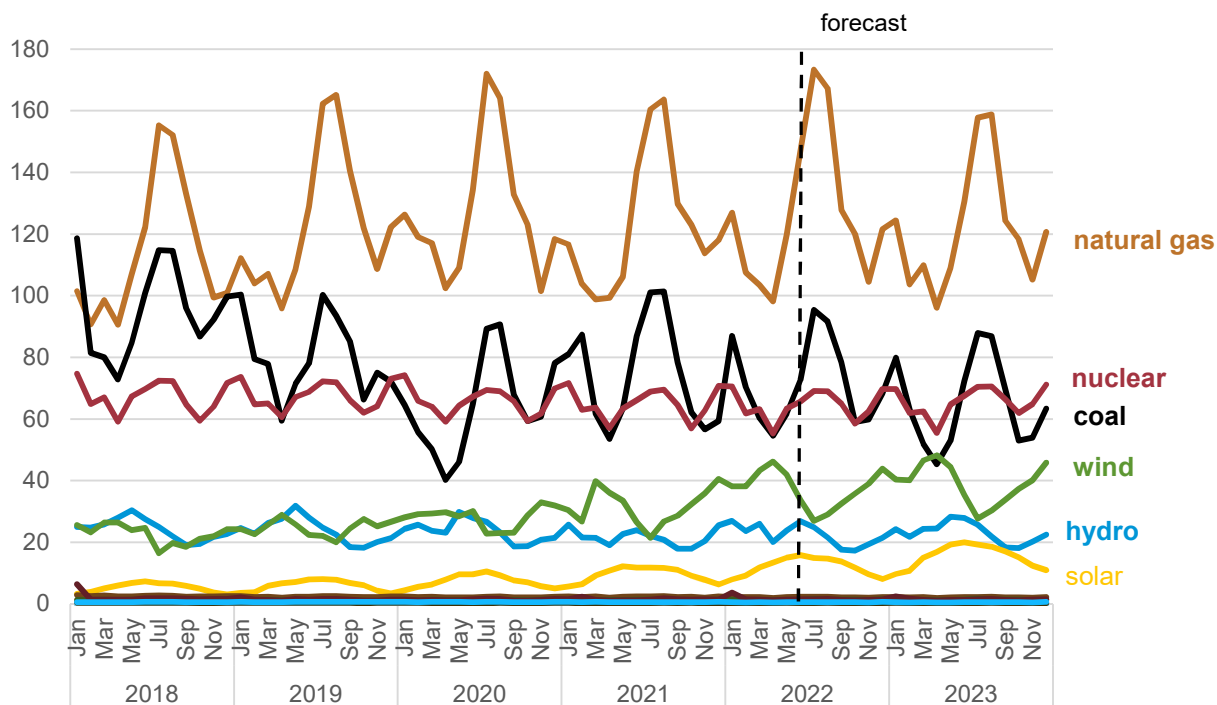


Source: U.S. Energy Information Administration, "Short-Term Energy Outlook", September 2022



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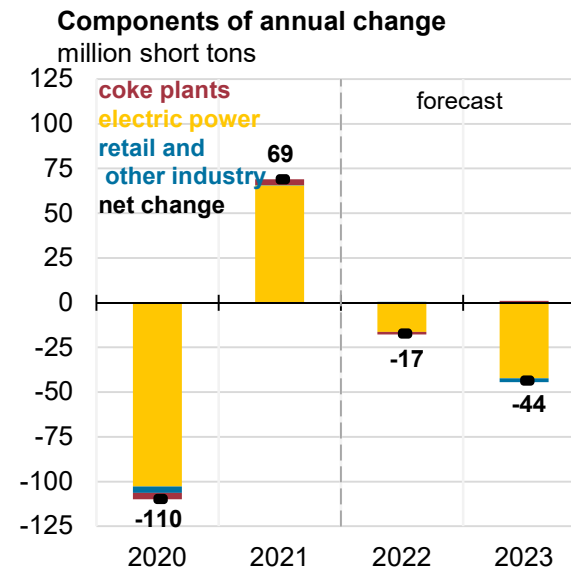
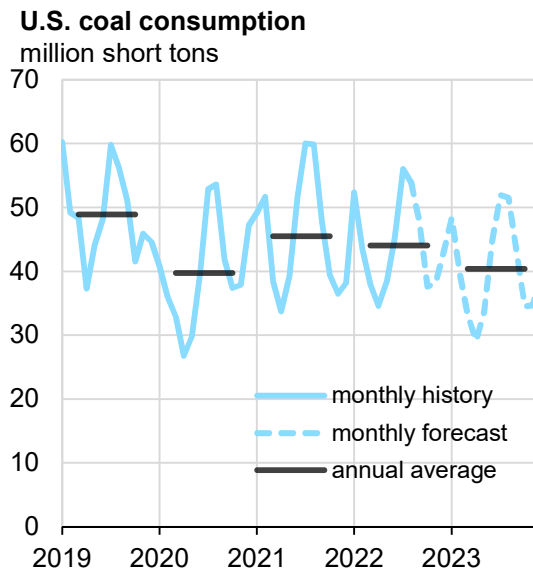
U.S. electricity generation by source (billion kilowatthours)



Source: U.S. Energy Information Administration, "Short-Term Energy Outlook", September 2022

Coal consumption expected to be lower in 2022 and 2023 than 2021, despite higher natural gas prices

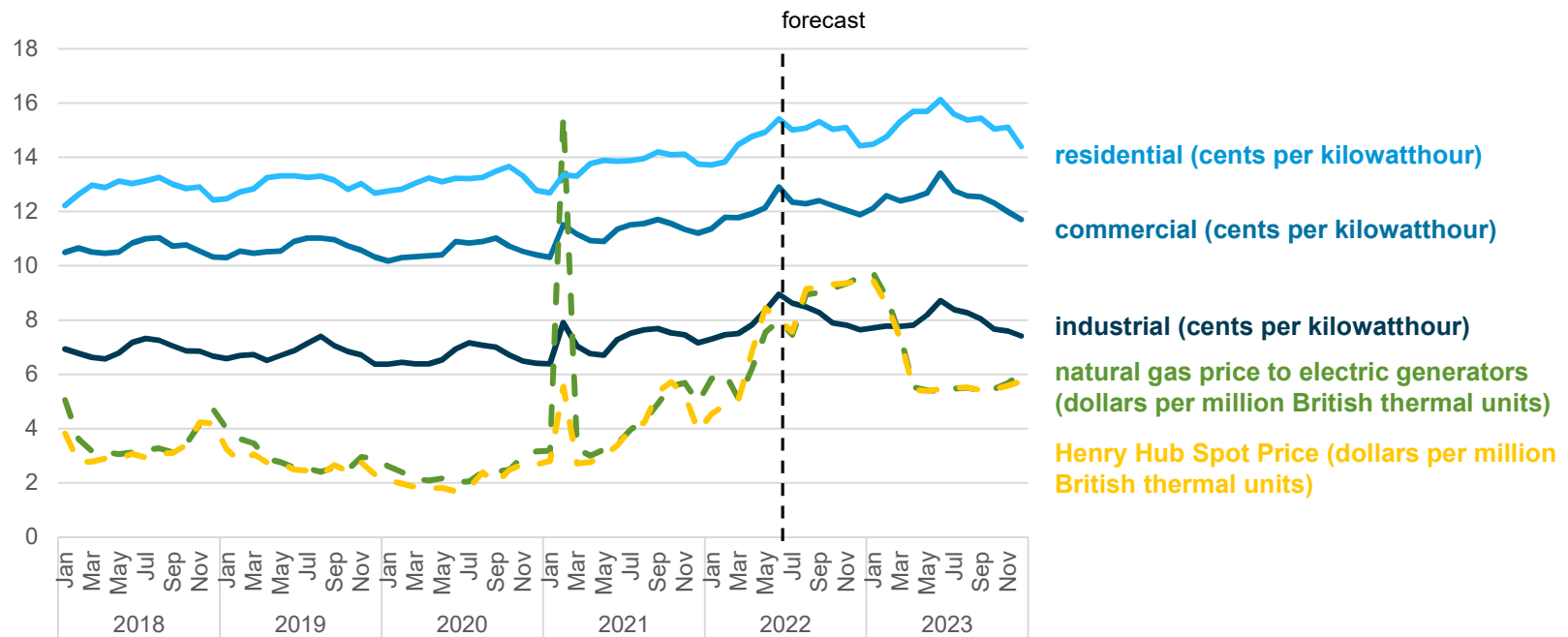
- Coal transportation has been severely limited by rail car labor shortages
- Coal plant closures have limited coal demand
- Coal mines closures in recent years have limited coal production



Source: U.S. Energy Information Administration, "Short-Term Energy Outlook", September 2022

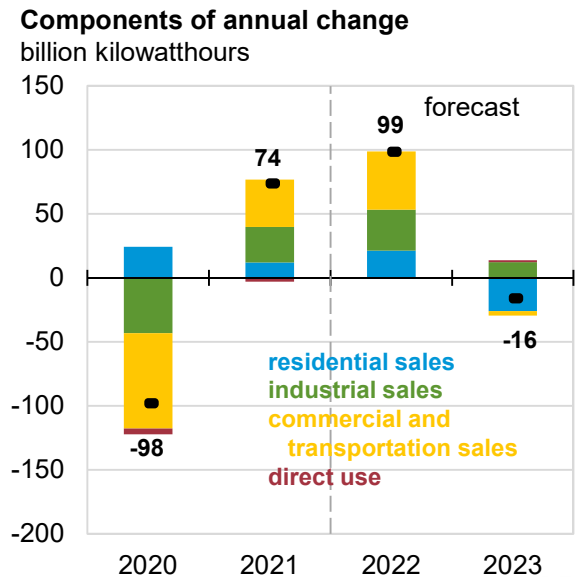
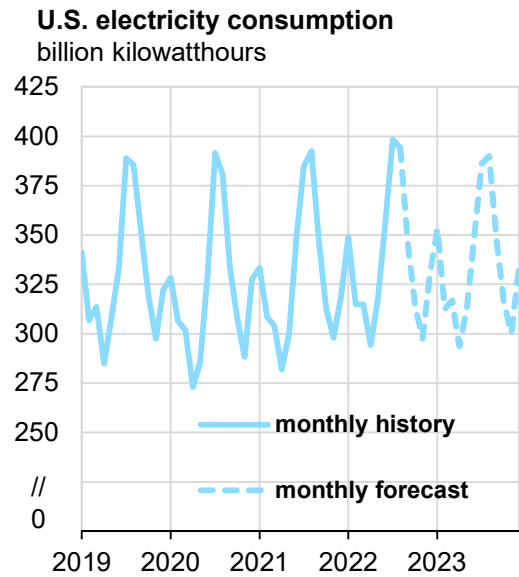


Short-term energy forecast of electricity and natural gas prices



Source: U.S. Energy Information Administration, "Short-Term Energy Outlook", September 2022

Warmer temperatures and greater economic activity is increasing U.S. electricity consumption in 2022



Source: U.S. Energy Information Administration, "Short-Term Energy Outlook", September 2022

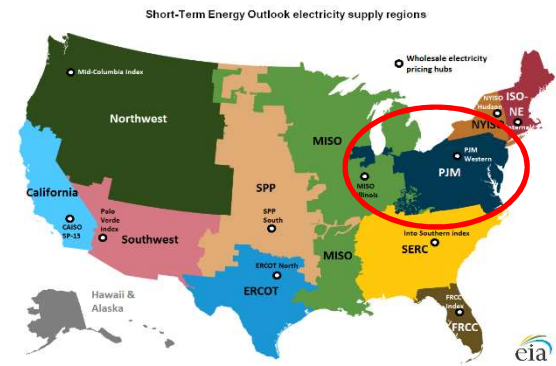
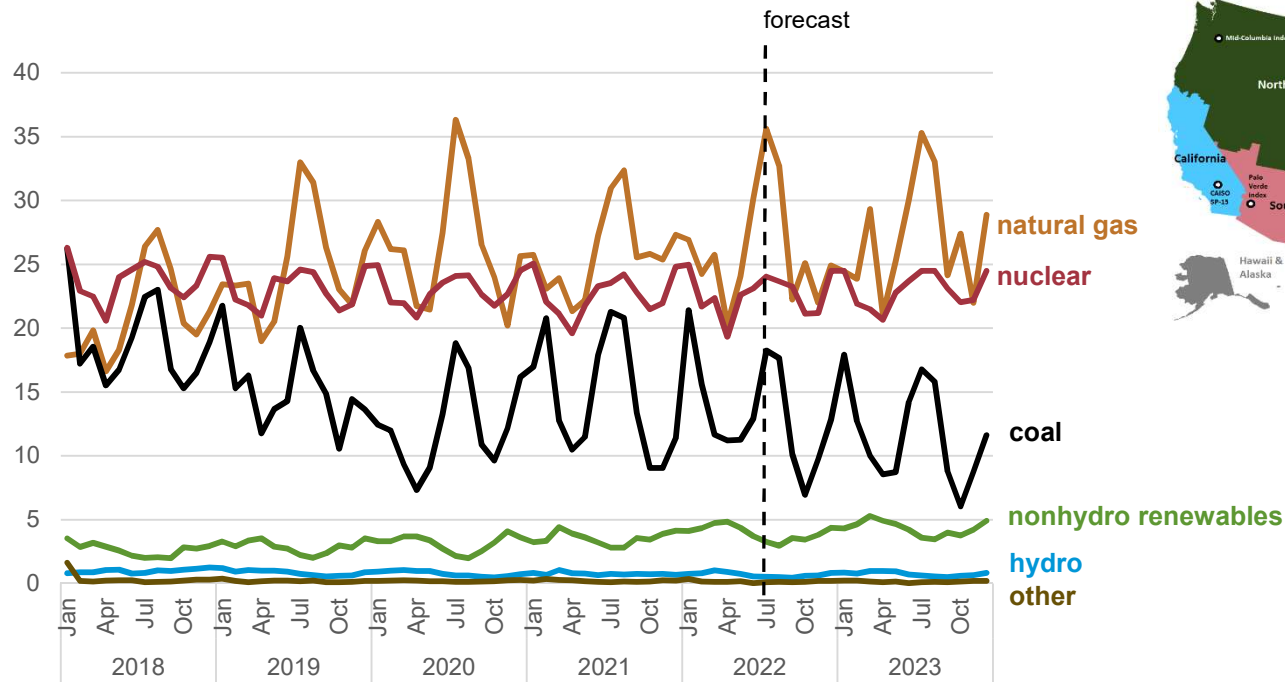


Regional electricity markets: generation by source and electricity prices



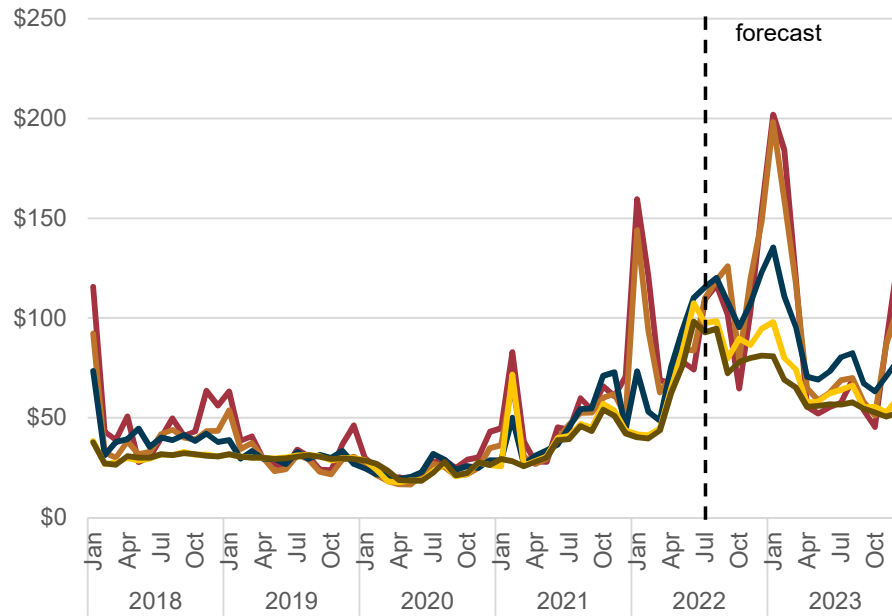
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PJM electricity generation by source (billion kilowatthours)

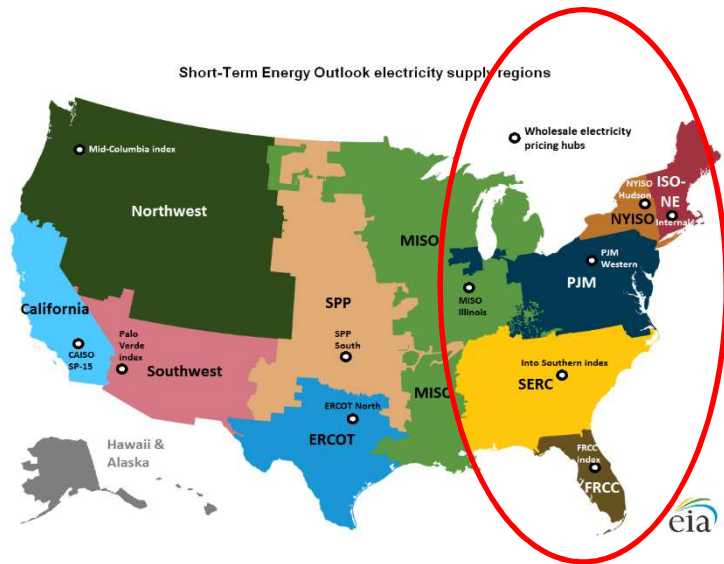


Source: U.S. Energy Information Administration, "Short-Term Energy Outlook", September 2022

Wholesale power prices—Eastern hubs (dollars per megawatthour)

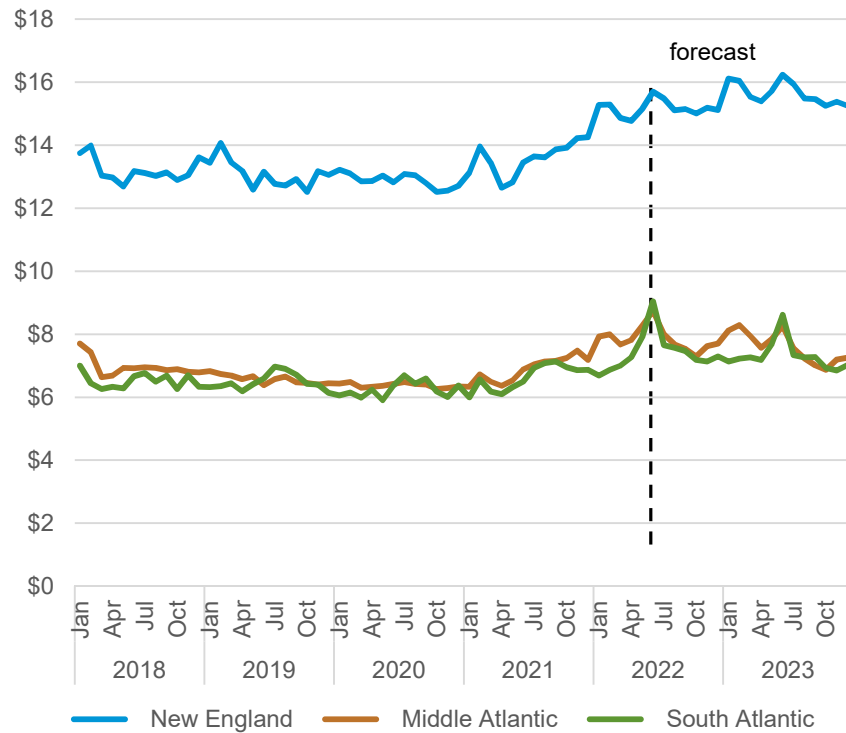


- ISO-NE Internal hub
- PJM Western hub
- FRCC index, Florida Reliability
- NYISO Hudson Valley zone
- SERC index, Into Southern

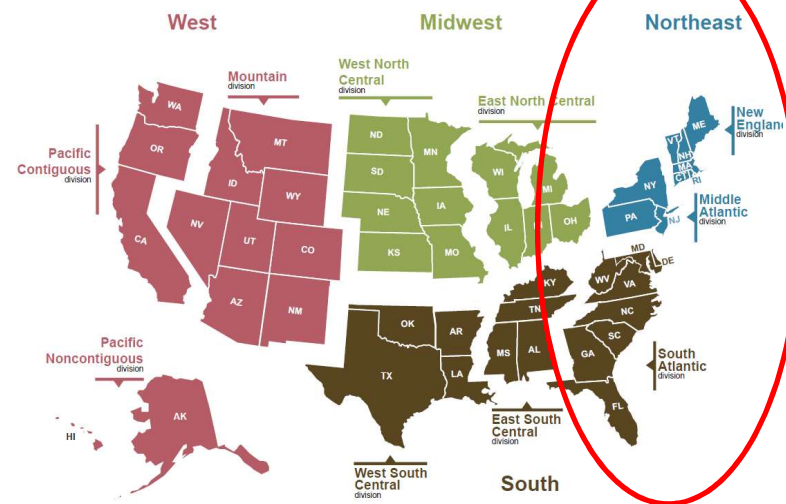


Source: U.S. Energy Information Administration, “Short-Term Energy Outlook”, September 2022

Industrial sector Eastern United States electricity prices (cents per kilowatthour)



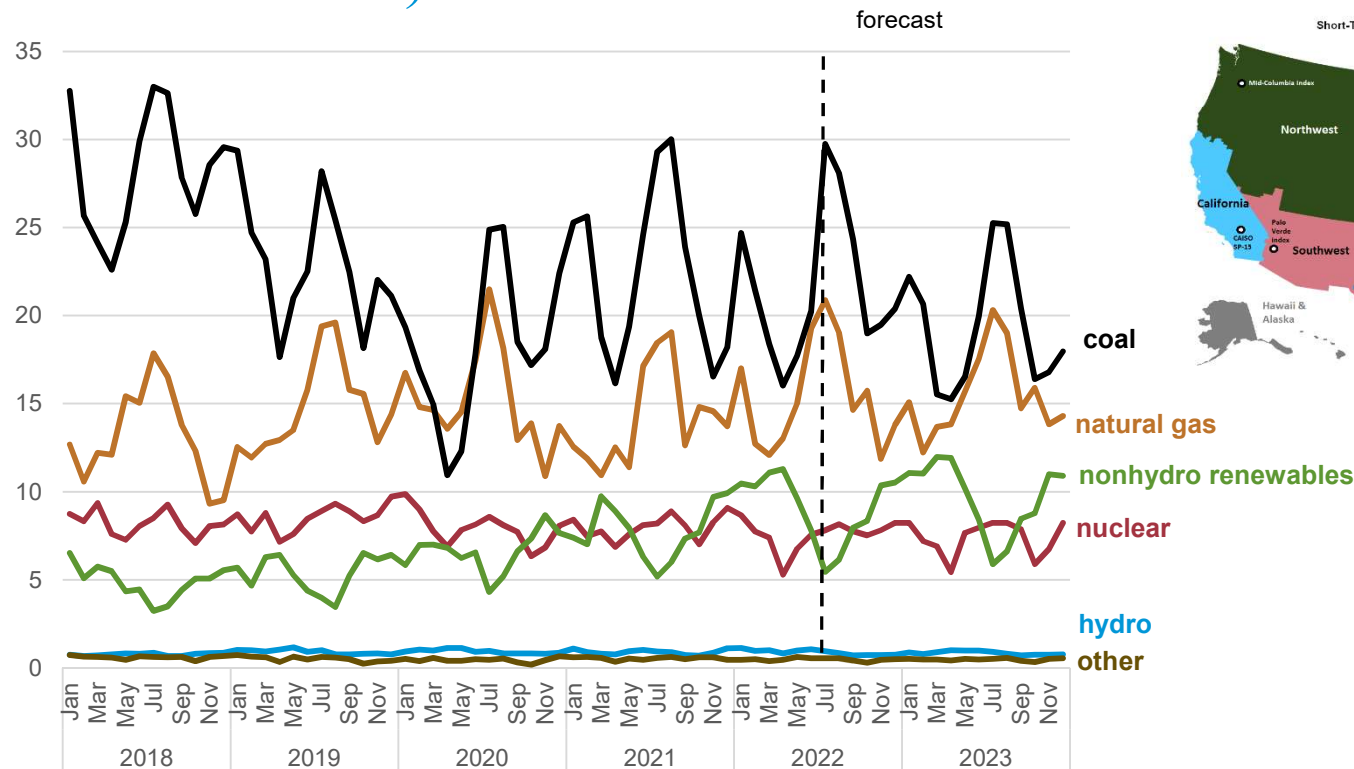
U.S. Census regions and divisions



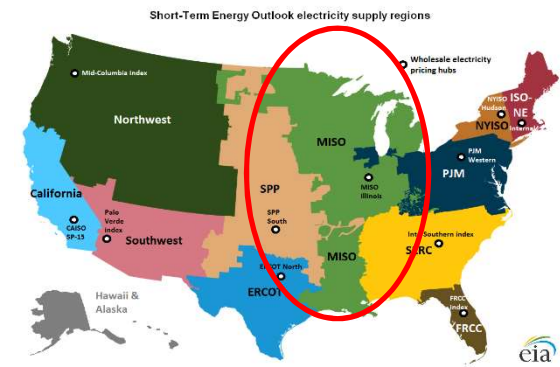
Source: U.S. Energy Information Administration, *Short-Term Energy Outlook*

Source: U.S. Energy Information Administration, "Short-Term Energy Outlook", September 2022

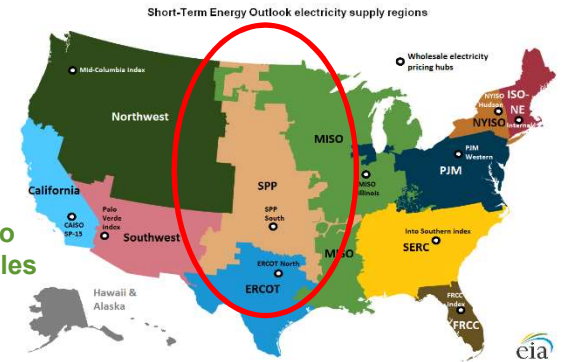
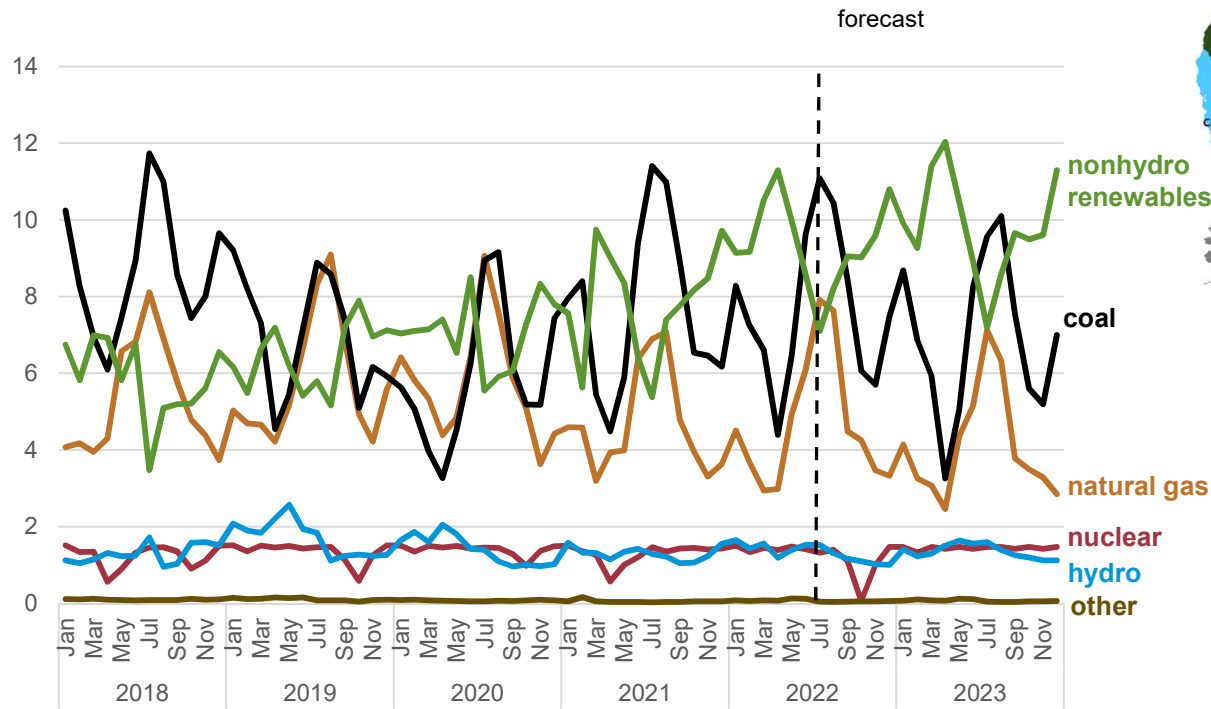
Midcontinent ISO electricity generation by source (billion kilowatthours)



Source: U.S. Energy Information Administration, "Short-Term Energy Outlook", September 2022

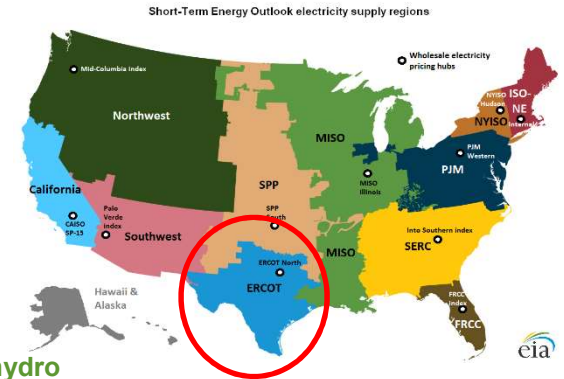
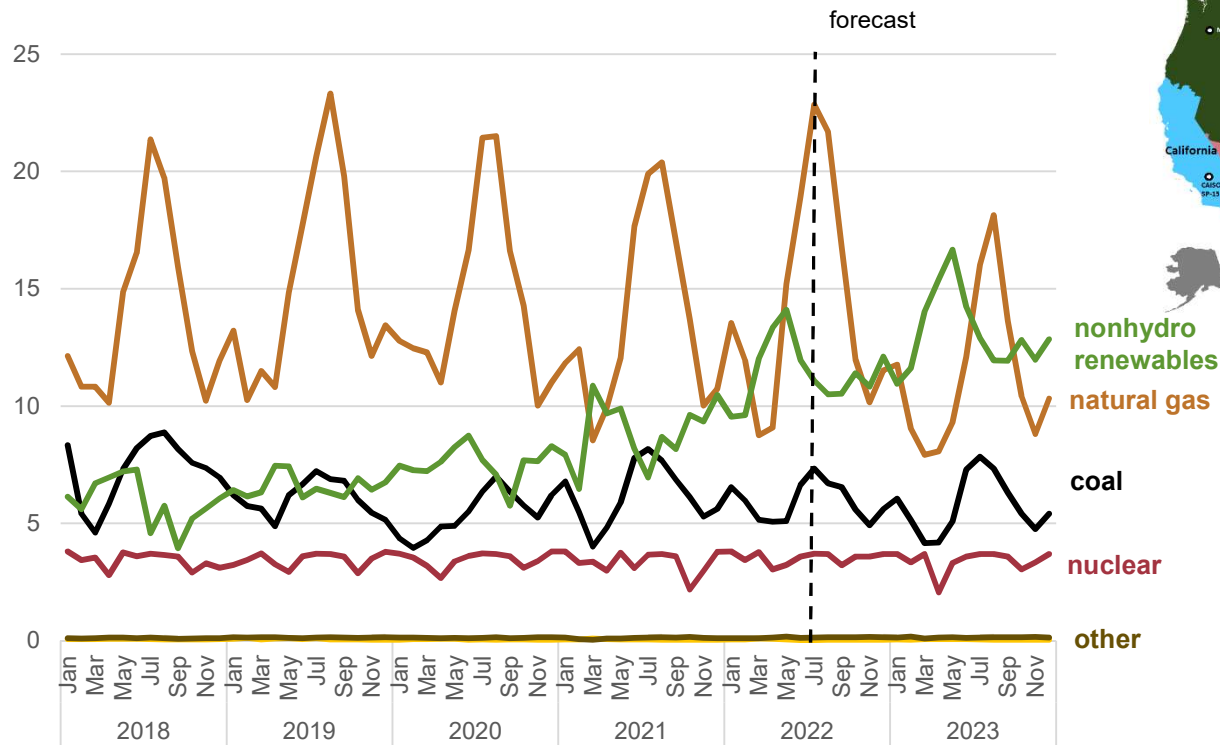


Southwest Power Pool electricity generation by source (billion kilowatthours)



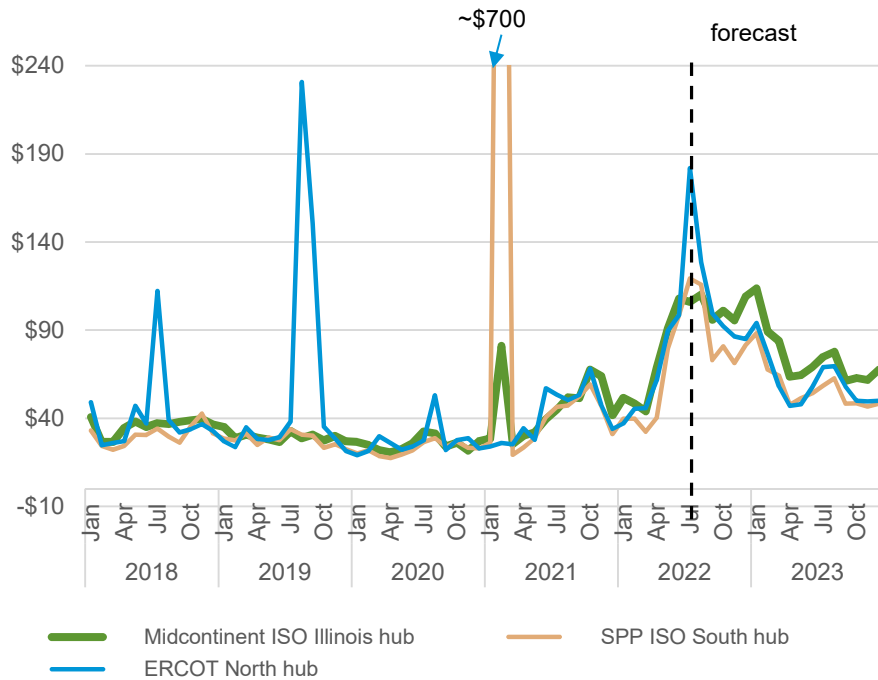
Source: U.S. Energy Information Administration, "Short-Term Energy Outlook", September 2022

ERCOT electricity generation by source (billion kilowatthours)



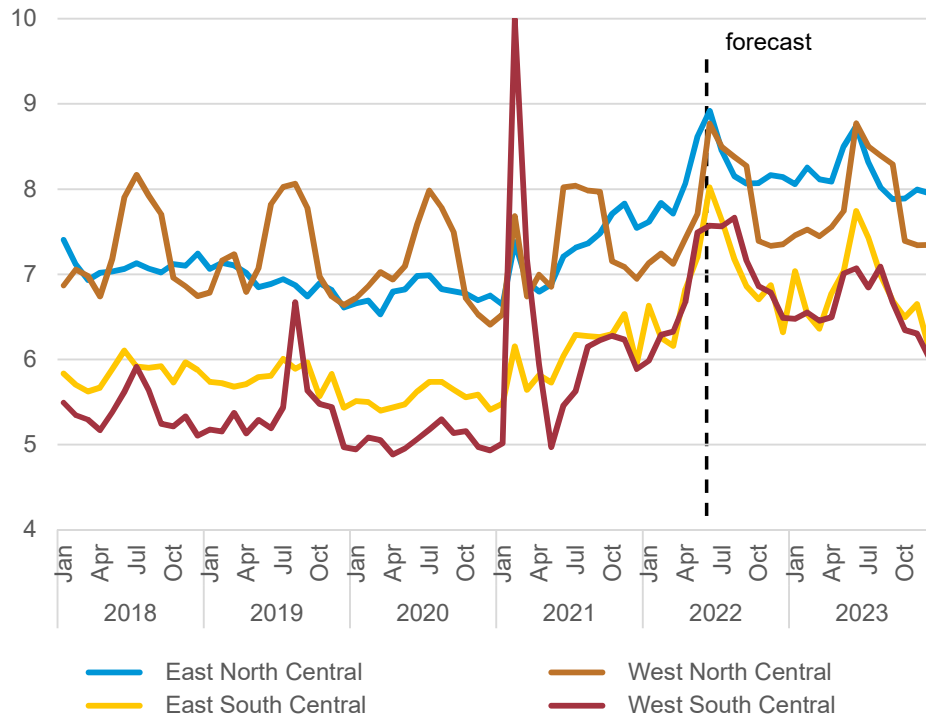
Source: U.S. Energy Information Administration, "Short-Term Energy Outlook", September 2022

Wholesale power prices—Central hubs (dollars per megawatthour)

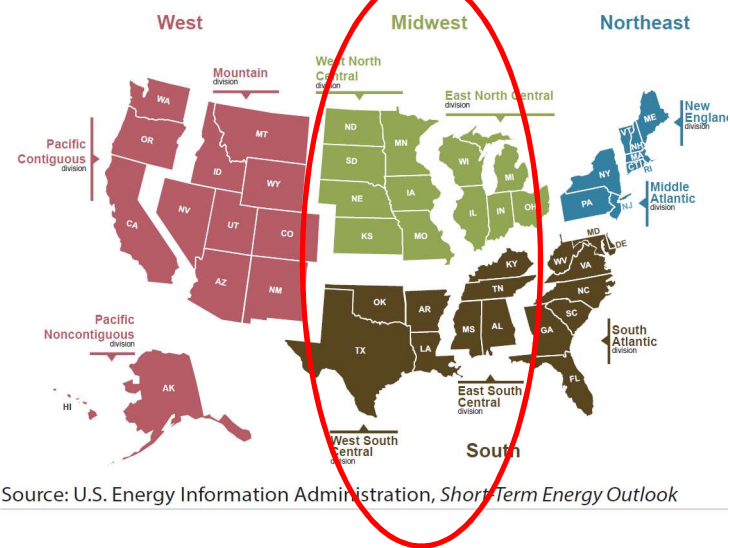


Source: U.S. Energy Information Administration, “Short-Term Energy Outlook”, September 2022

Industrial sector Central United States electricity prices (cents per kilowatthour)



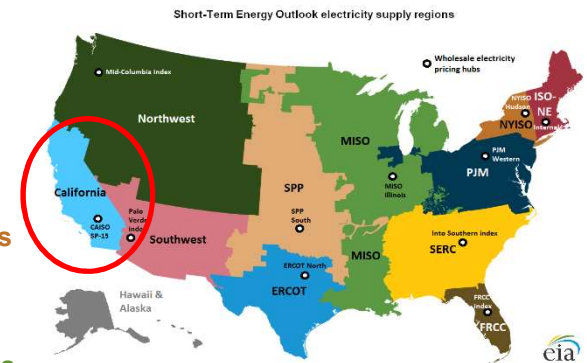
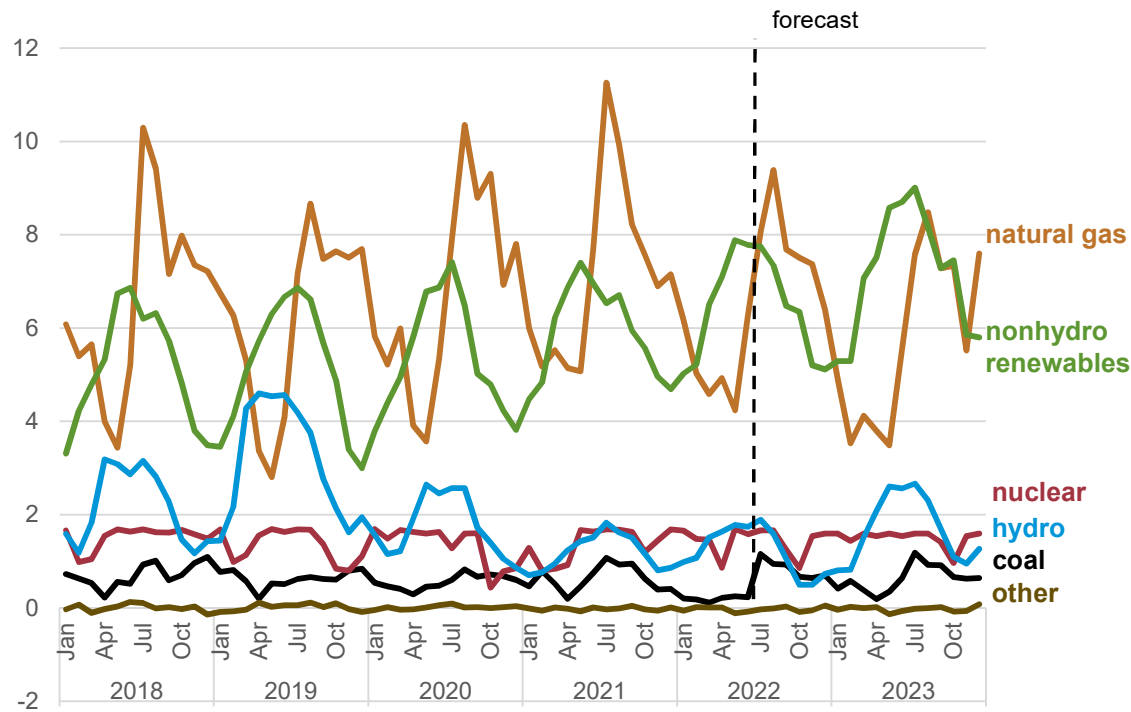
U.S. Census regions and divisions



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

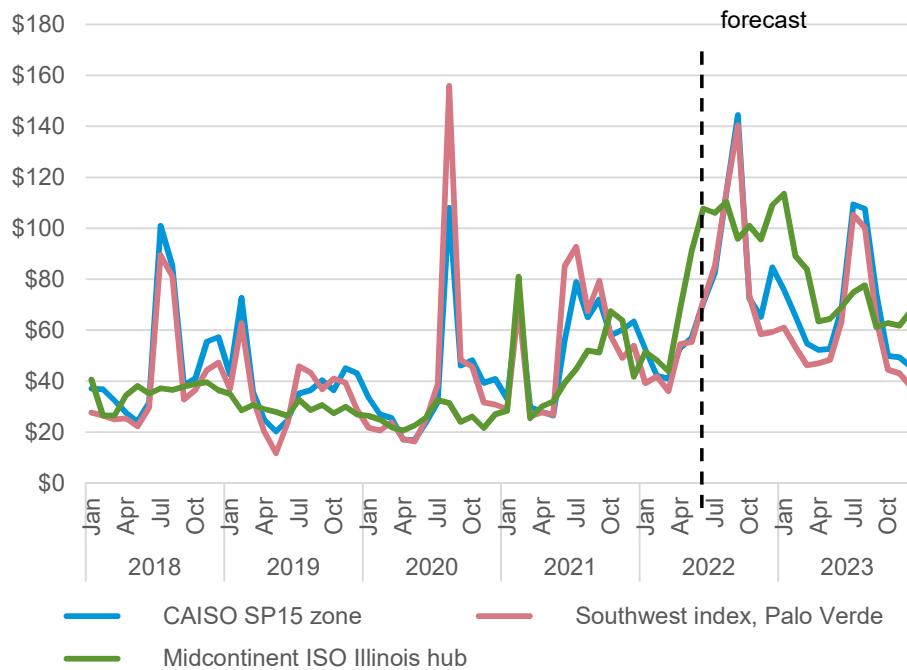
Source: U.S. Energy Information Administration, "Short-Term Energy Outlook", September 2022

California electricity generation by source (billion kilowatthours)



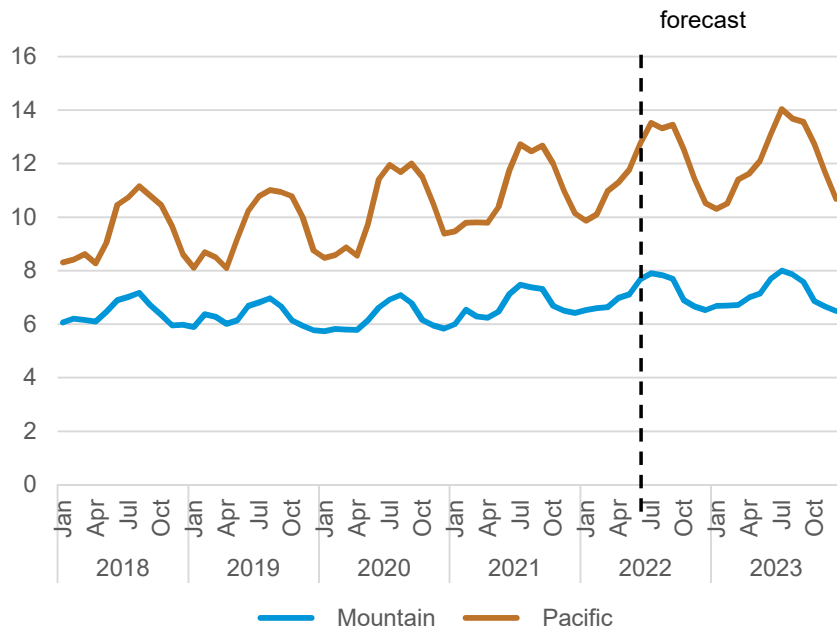
Source: U.S. Energy Information Administration, "Short-Term Energy Outlook", September 2022

Wholesale power prices—Western hubs (dollars per megawatthour)

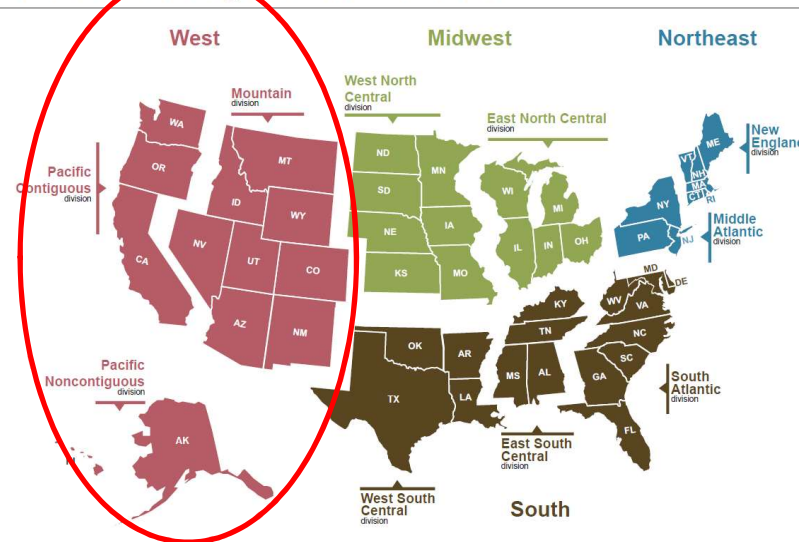


Source: U.S. Energy Information Administration, “Short-Term Energy Outlook”, September 2022

Industrial sector Western United States electricity prices (cents per kilowatthour)



U.S. Census regions and divisions



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

Source: U.S. Energy Information Administration, “Short-Term Energy Outlook”, September 2022

Questions?



Links and contact information

- Email: lori.aniti@eia.gov
- *Short-Term Energy Outlook* | eia.gov/outlooks/steo/
- *Short-Term Energy Outlook Supplements:*
 - [Drought Effects on California Electricity Generation and Western Power Markets](#)
 - *Upcoming:* Sources of Price Volatility in the ERCOT Market
- *Annual Energy Outlook* | eia.gov/outlooks/aeo/
- Relevant *Today in Energy* and *In the News* articles:
 - [California drought could reduce hydroelectric generation to half of normal levels](#)
 - [Small-scale solar is changing hourly utility electricity demand in New England](#)
 - [Over one-quarter of U.S. households use electricity as the only source of energy](#)
 - [Owners of coal-fired generating plants seek greater fuel flexibility](#)
 - [In the first half of 2022, 24% of U.S. electricity generation came from renewable sources](#)