



2020 State of the Markets Report



03/18/2021

Key Findings

- COVID-19 shaped energy market fundamentals
- Wholesale electricity prices reached record lows in some regions
- Mostly solar, wind, and natural gas capacity additions
- Electricity markets expanded and were refined
- Reliability needs drove a large share of new transmission projects
- Natural gas prices were low across the country
- LNG exports pushed net exports to a new record in the second-half



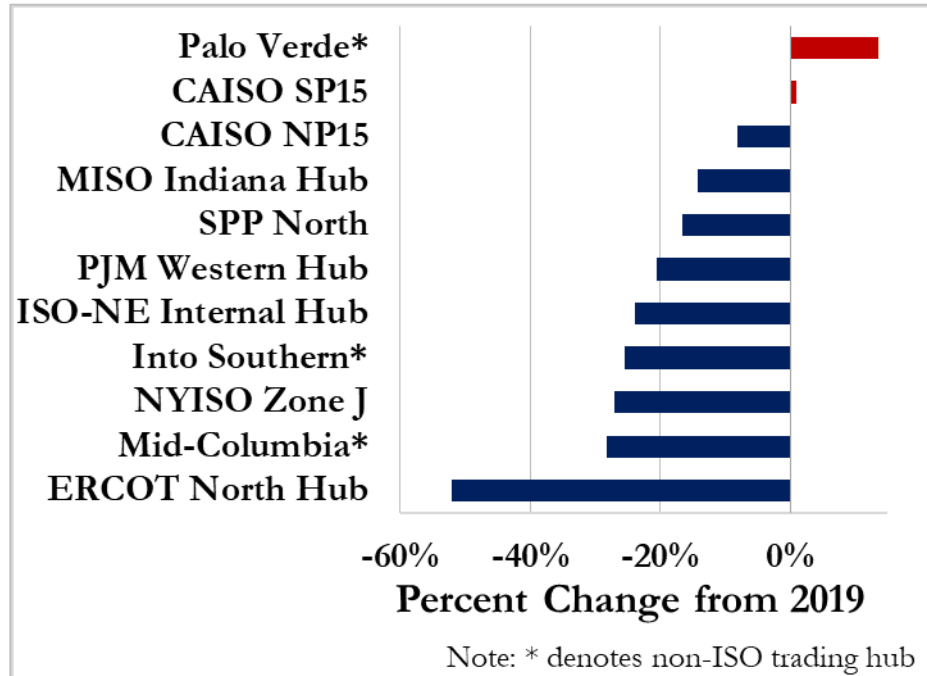
COVID-19 and U.S. Energy Markets

- In April, electricity demand in U.S. Independent System Operators (ISOs) contracted between 4% and 10%
- New demand patterns emerged, requiring new demand forecasts
- Grid operators modified protocols to reduce the spread of COVID-19 to critical personnel and ensure continuity of operations
- Natural gas production associated with crude oil was expected to fall because of large drops in demand of oil products, but total natural gas production fell only 2%



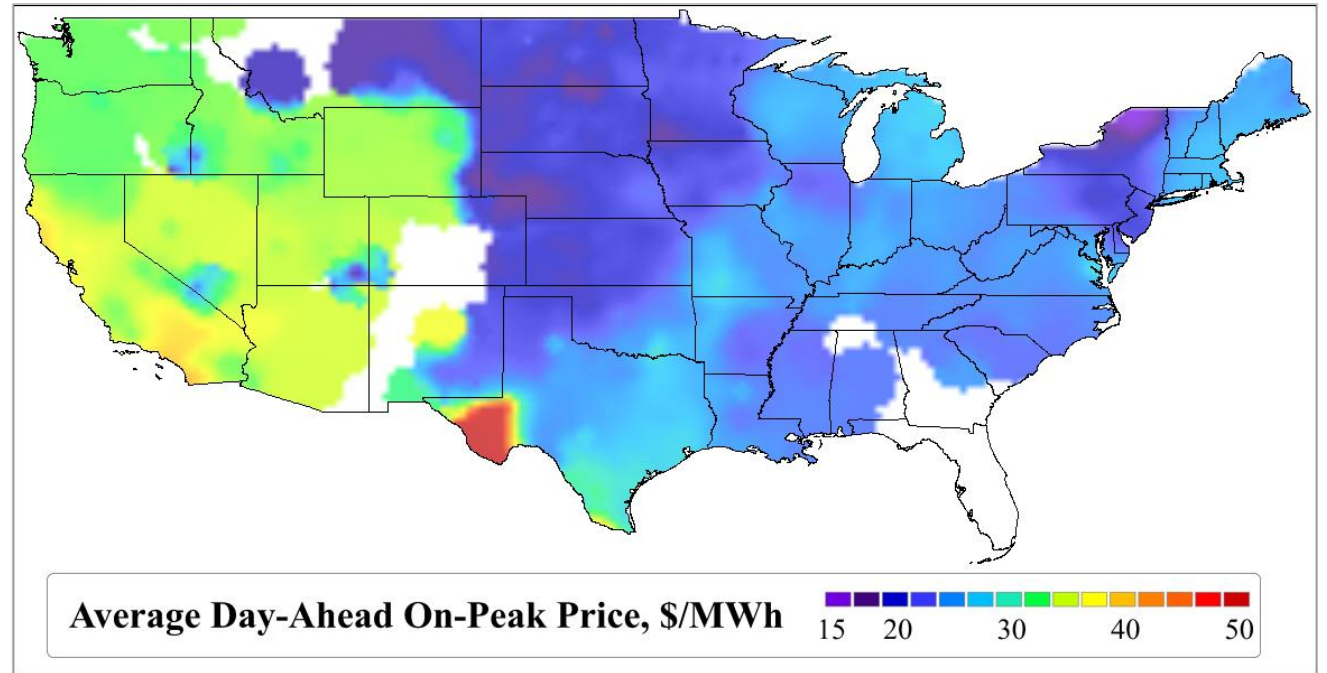
Low Electricity Prices

Fig. 1 - Change in Annual Average Day-Ahead On-Peak Price from 2019 for Select Hubs



Source: S&P Global Market Intelligence

Fig. 2 - Annual Average Day-Ahead On-Peak Price at ISO and Non-ISO Pricing Nodes in 2020

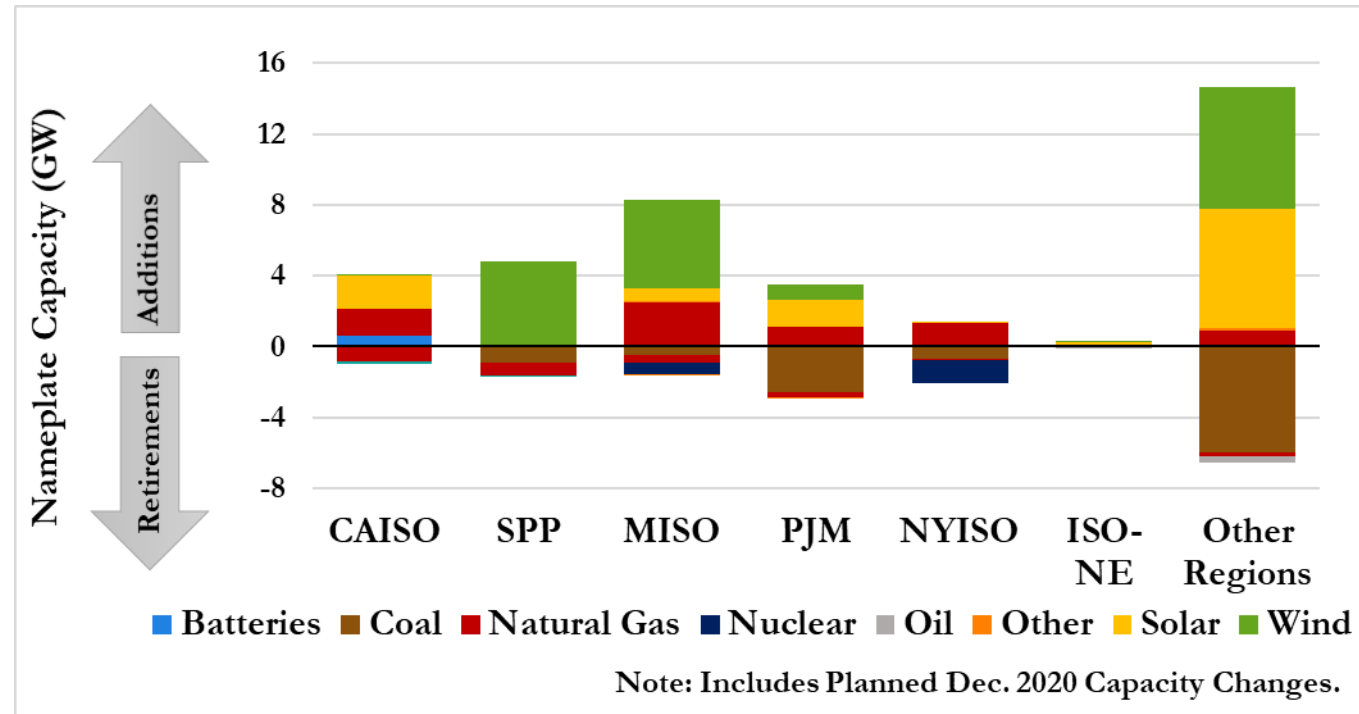


Source: Hitachi Powergrids Velocity Suite



Changes in Installed Generation Capacity

Fig. 3 - Capacity Additions and Retirements, 2020

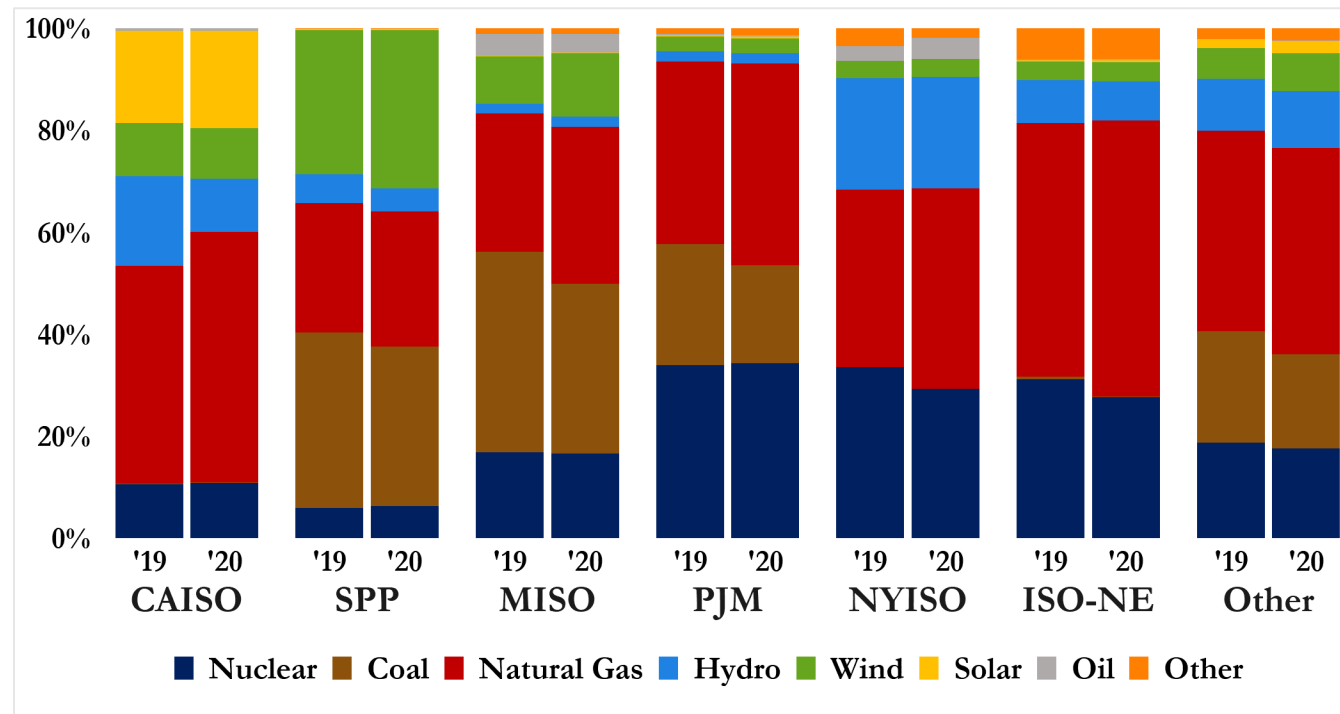


Source: EIA-860M



Generation Fuel Mix

Fig. 4 – Generation Fuel Mix of U.S. Balancing Authorities, 2020



Source: EIA-930 and CAISO



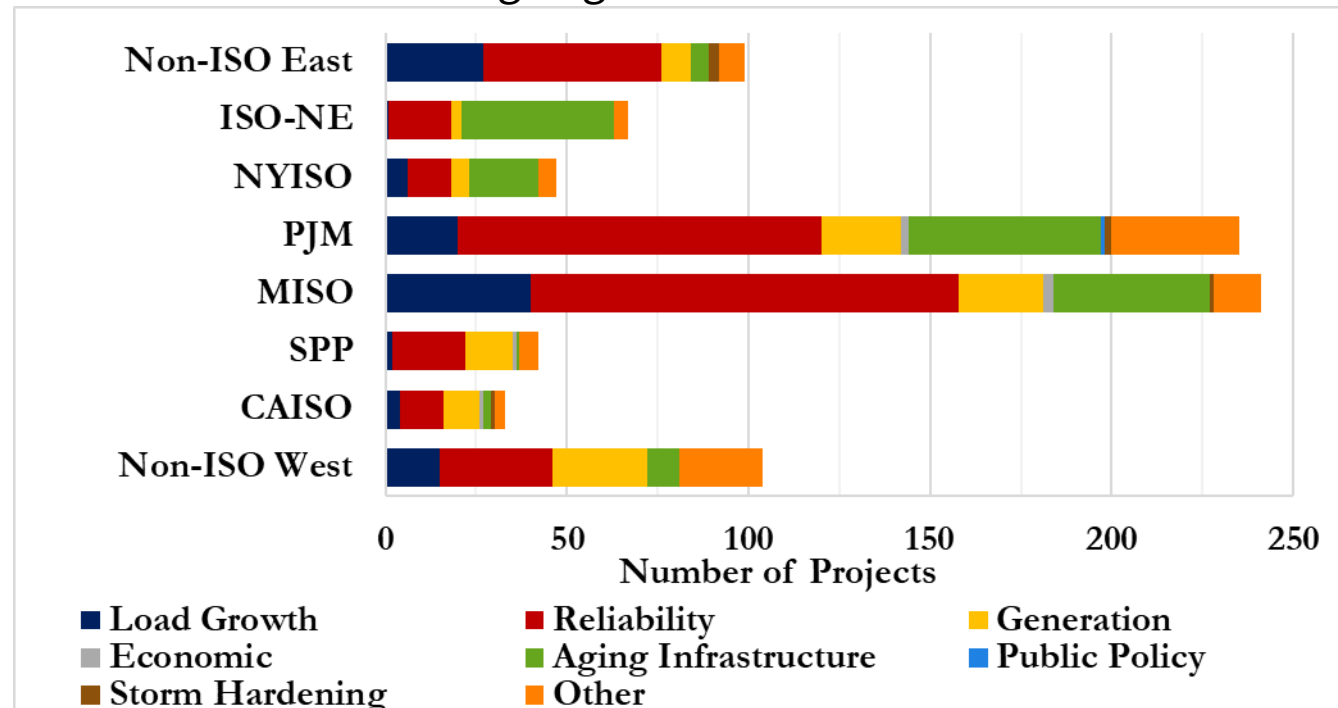
Expansion and Refinement of Electricity Markets

- Expansion of Electricity Markets in the West
 - Two utilities joined CAISO-run Western Energy Imbalance Market
 - Commission approved SPP-administered Western Energy Imbalance Service
- Expansion and Refinement of Electricity Market Products
 - New ramping product in SPP
 - Fast-start pricing in PJM and SPP
 - Reserve markets in PJM and MISO



New Line-Related Transmission Projects

Fig. 5 – Transmission Projects With 2020 in Service Dates Within Order No. 1000 Planning Regions

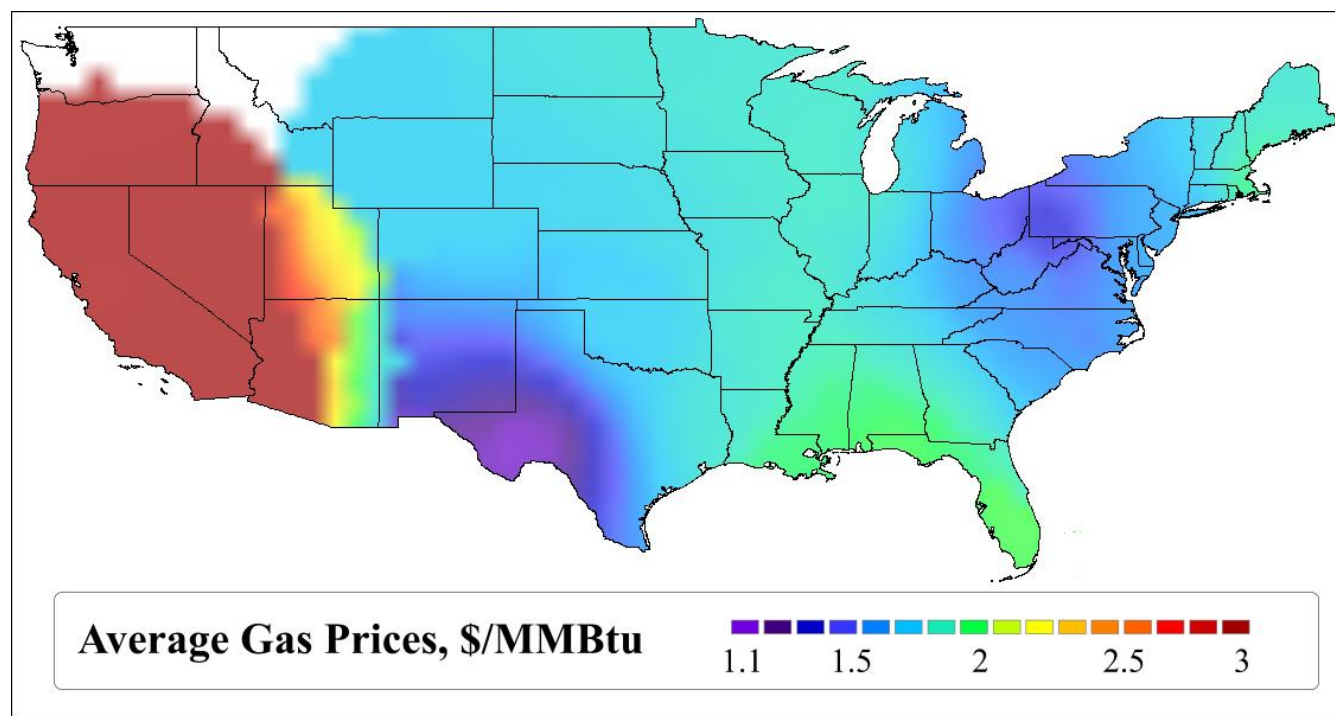


Source: The Three C Group, LLC



Lower Natural Gas Prices Across the U.S.

Fig. 6 – Average 2020 Platts Gas Daily Index Prices at Major Hubs

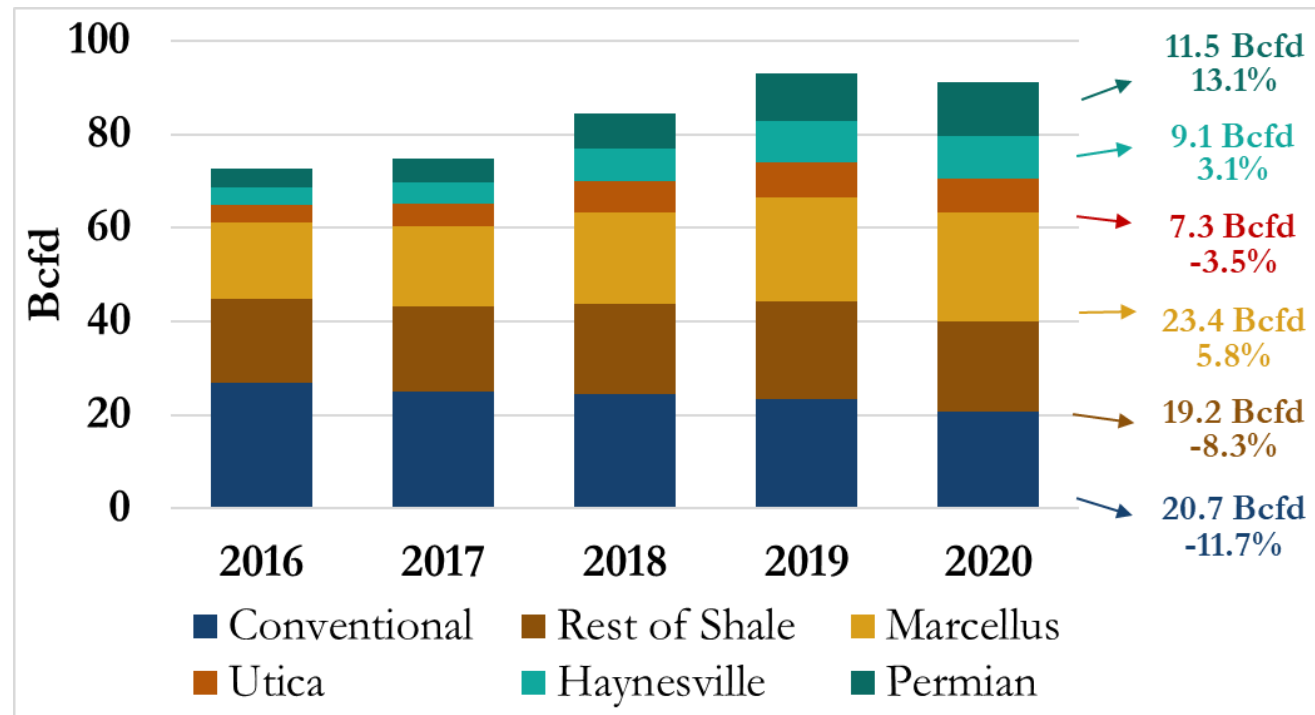


Note: Region color is based on average price at nearest Staff-selected major hubs and may not exactly represent local delivered prices. Source: S&P Platts Gas Daily; Hitachi Powergrids Velocity Suite



Resilient Production Despite Lower Drilling Rig Count

Fig. 7 – U.S. Dry Natural Gas Production

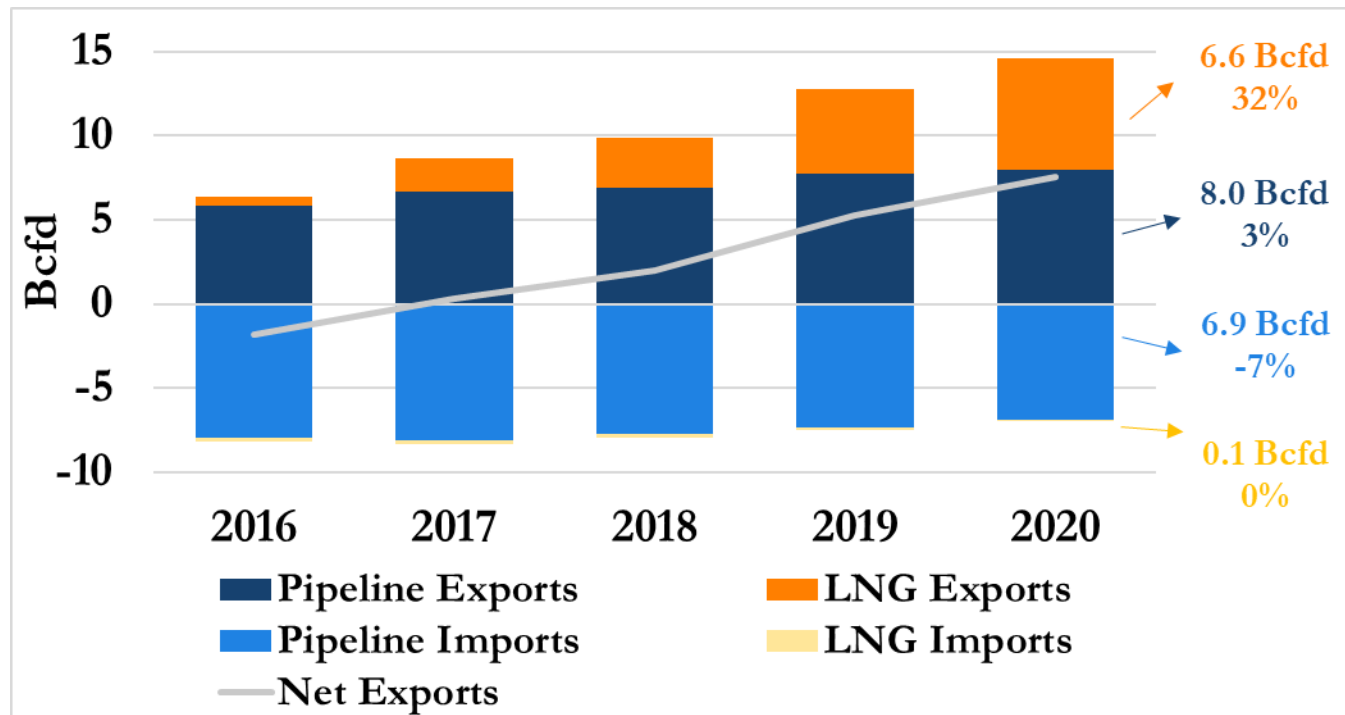


Source: Energy Information Administration



Record Net Exports on LNG Growth

Fig. 8 – U.S. Natural Gas Trade and Net Exports



Source: Energy Information Administration



Other Topics Discussed in the Report

- Severe Weather Events
 - Heatwaves and Wildfires in the West
 - Hurricanes in the Gulf of Mexico
- Natural Gas Fundamentals
 - Demand and Power Burn
 - Storage Inventories
- Electricity Fundamentals
 - Electricity Demand
 - Capacity Markets





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