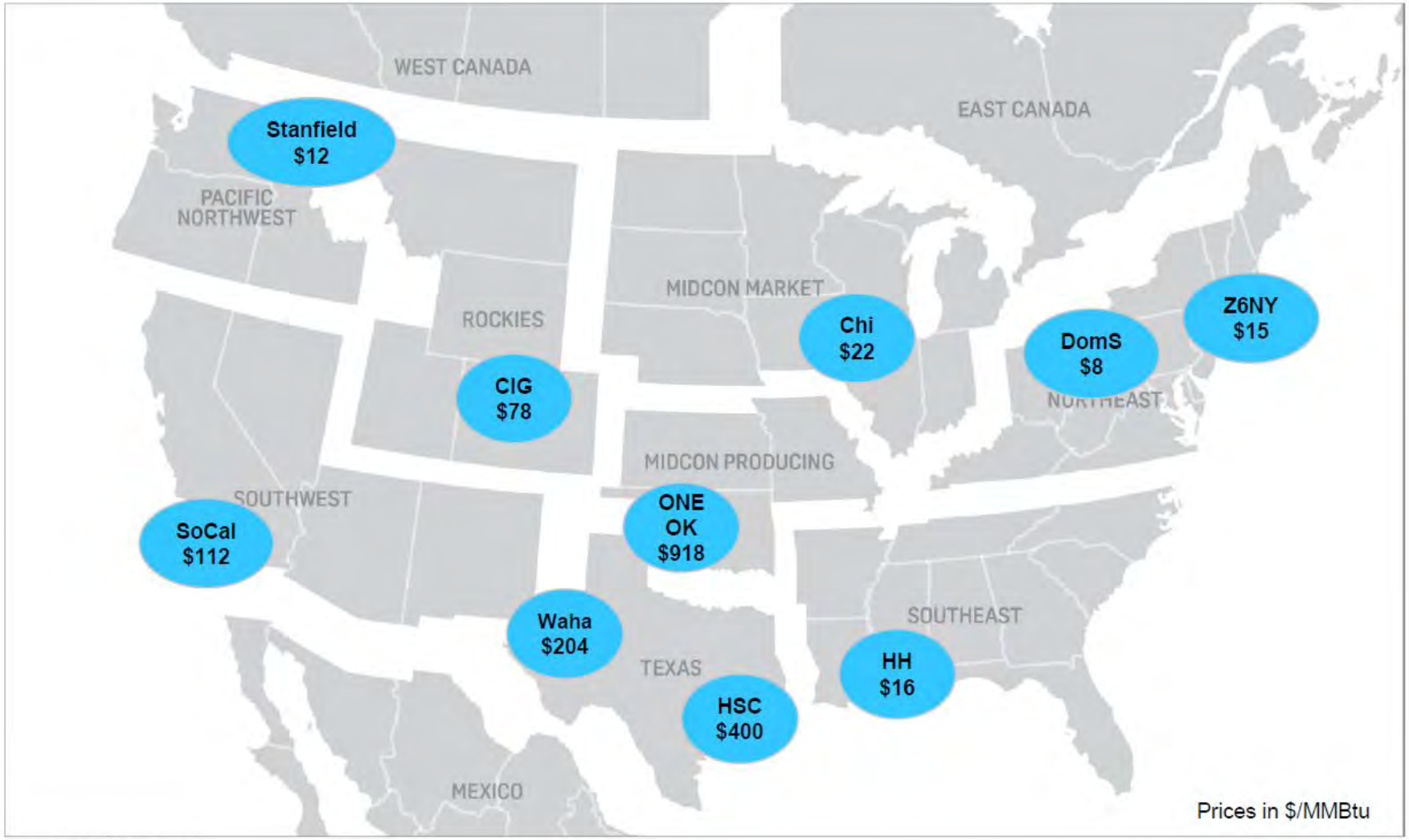
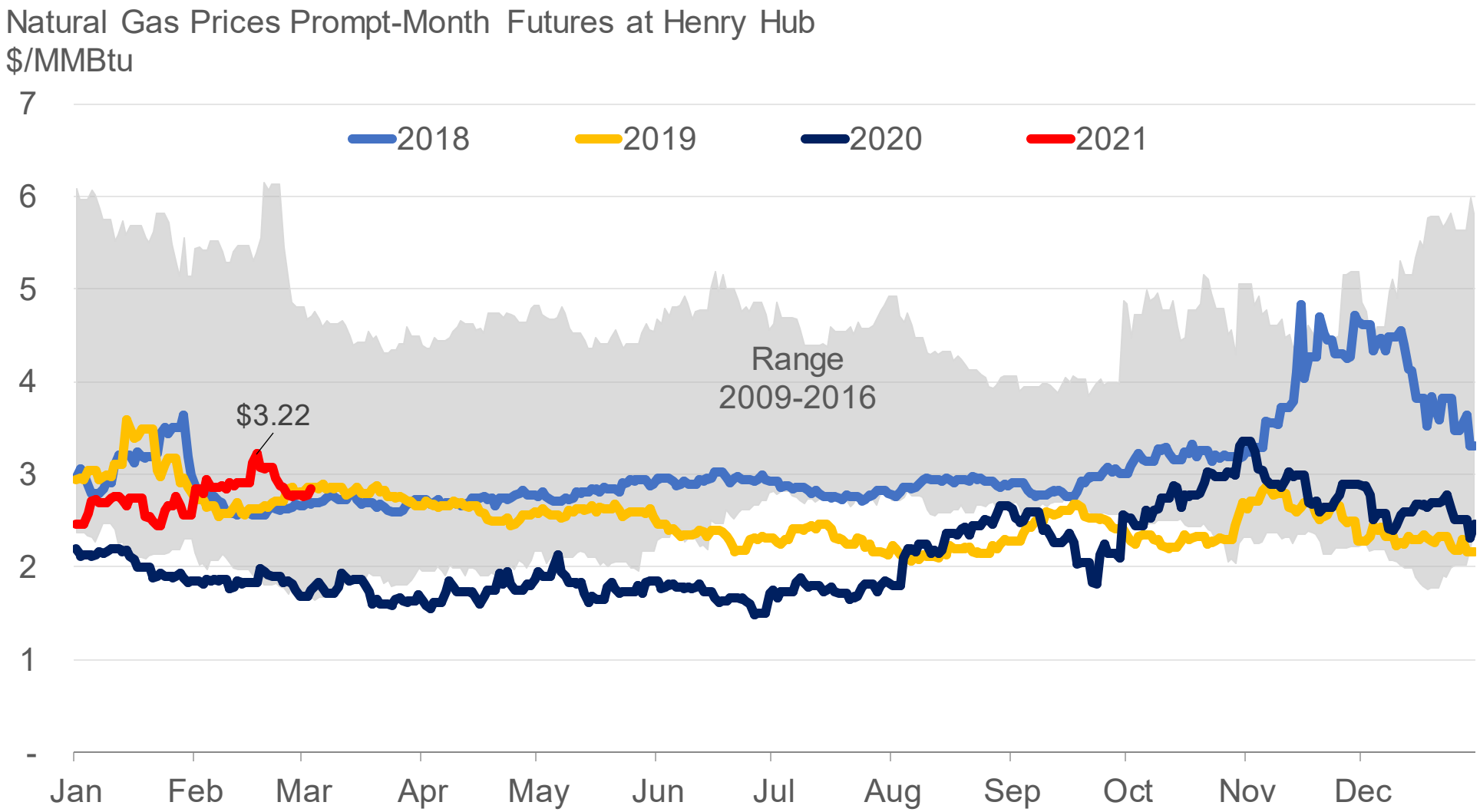
US natural gas prices surged due to supply constraints and record demand



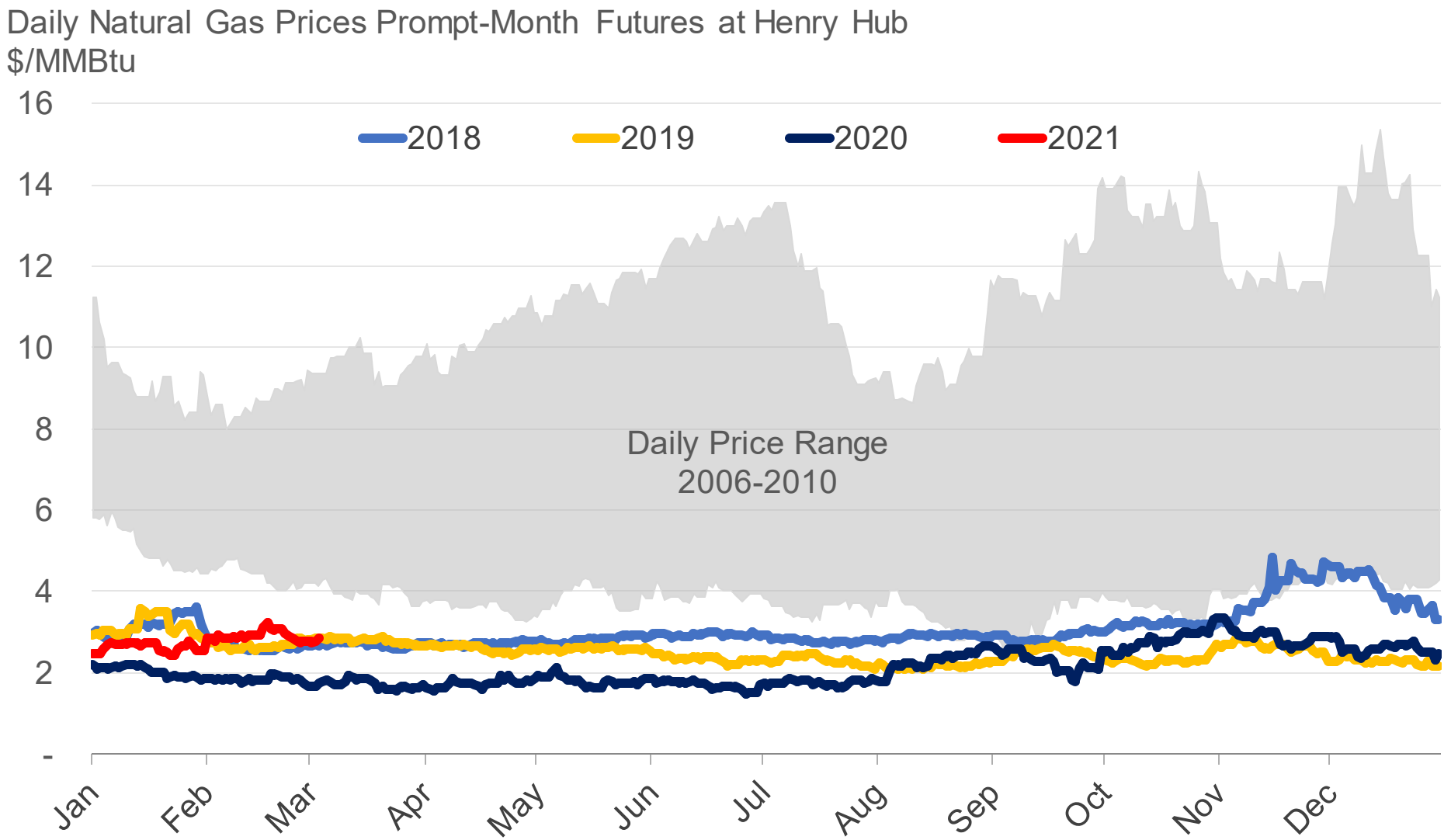
Source: S&P Global Platts Analytics

Despite the sharp increases in daily cash prices, futures contracts faced moderate pressure.



Data: Energy Information Administration

Natural gas prices remain the lowest in decades.



Data: Energy Information Administration

Early Lessons from the 2021 Cold Event

- Natural gas utility operations were largely uninterrupted during the cold event.
- Energy diversity of supply and end-uses is vital.
- Energy systems with heavy dependence on electricity for space heating will be challenged by exceptionally cold temperatures.
- Energy system resilience will be achieved through a diverse set of integrated assets.

Gas Utility Responses to Winter Storm Uri

- Ensuring safe and reliable operations across the life of the storm
- Making sure the financial impact to customers is as minimal as possible
  - Accessing capital to cover the extraordinary costs of gas experienced during the storm
  - Filings for the establishment of regulatory assets

State Regulatory Commission Responses to Winter Storm Uri

Commission ordered investigations into the impacts of Winter Storm Uri on customers and utilities

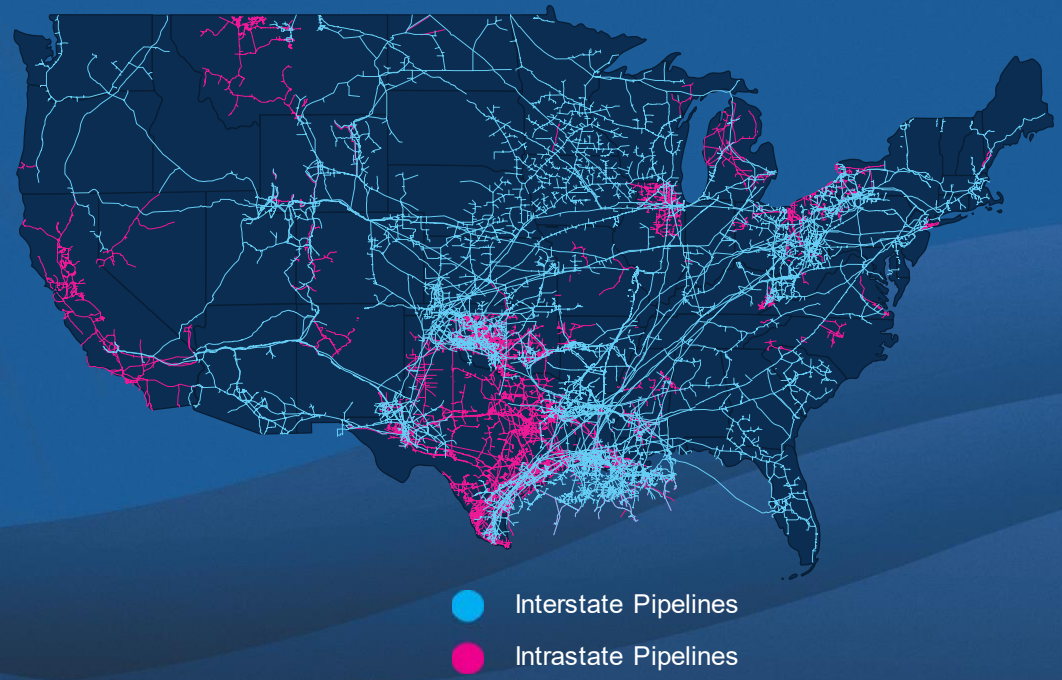
9 state regulatory commissions responded to the event with an ordered investigation

4 state regulatory commissions ordered some form of deferred cost treatment for costs relating to Winter Storm Uri

What were lessons learned from the interactions between state regulators and gas utilities?

- How can gas utilities better serve customers during these extraordinary events?
- The importance of gas supply and capital planning
- Effective strategies to minimalize extraordinary impacts on utility customers

Natural gas is delivered to customers through a 2.6-million-mile underground pipeline system. This includes approximately 2.3 million miles of local utility distribution pipelines and 300,000 miles of transmission pipelines that stretch across the country.



TrueBlueNaturalGas.org

AGA_naturalgas

naturalgas

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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 76 million residential, commercial and industrial natural gas customers in the U.S., of which 95 percent — more than 72 million customers — receive their gas from AGA members. Today, natural gas meets more than 30 percent of the United States' energy needs.

www.aga.org

SPP Southwest Power Pool

MARKET MONITORING UNIT

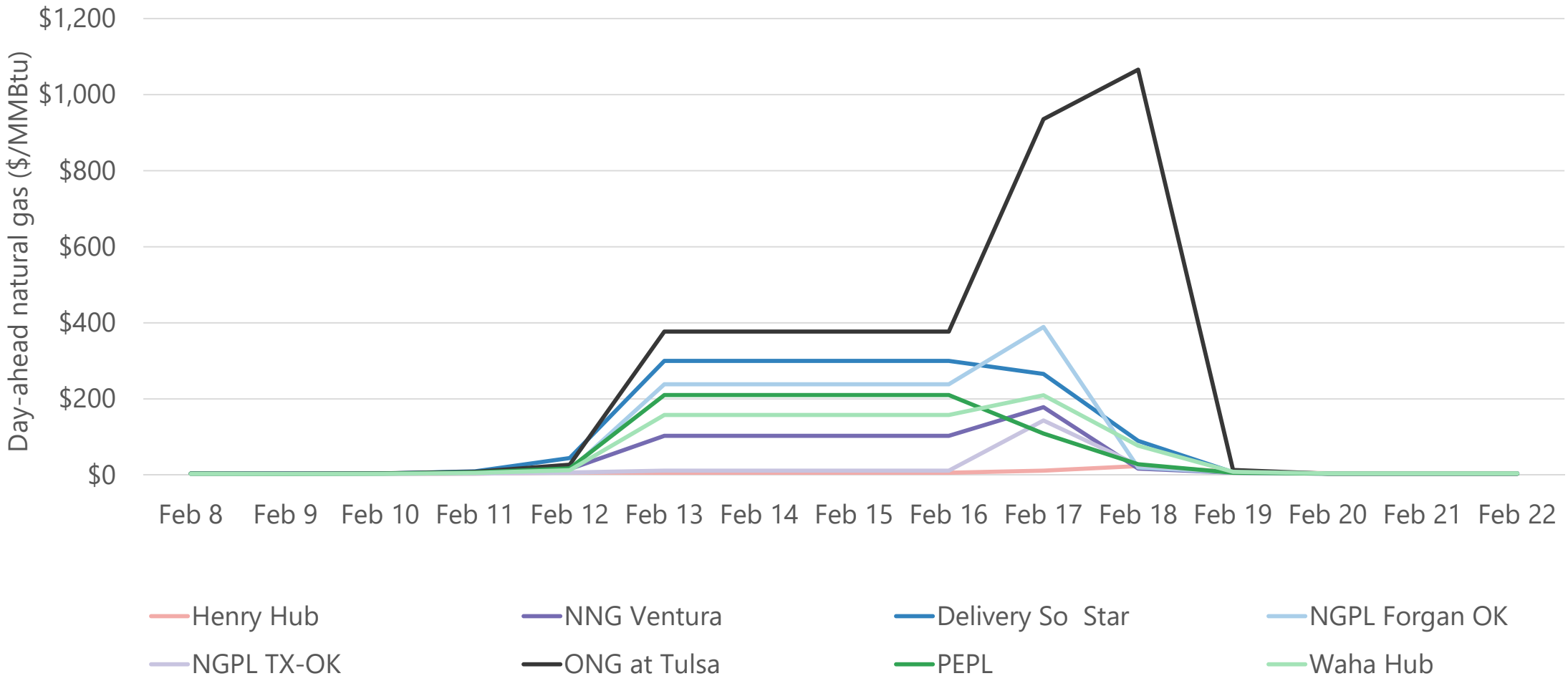
MMU MARKET REVIEW OF WINTER EVENT

KEITH COLLINS

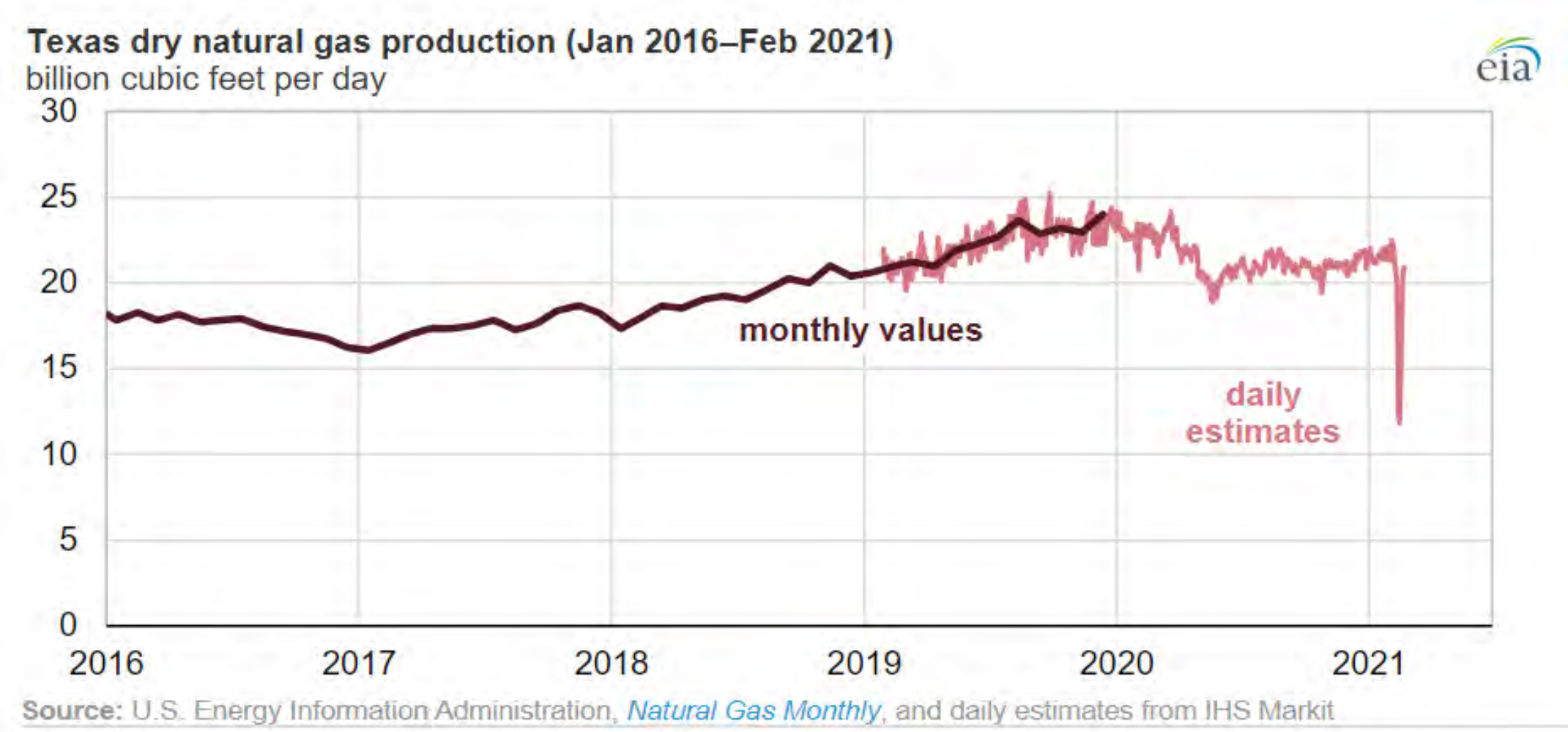
REGIONAL STATE COMMITTEE

APRIL 26, 2021

NATURAL GAS HUB PRICES

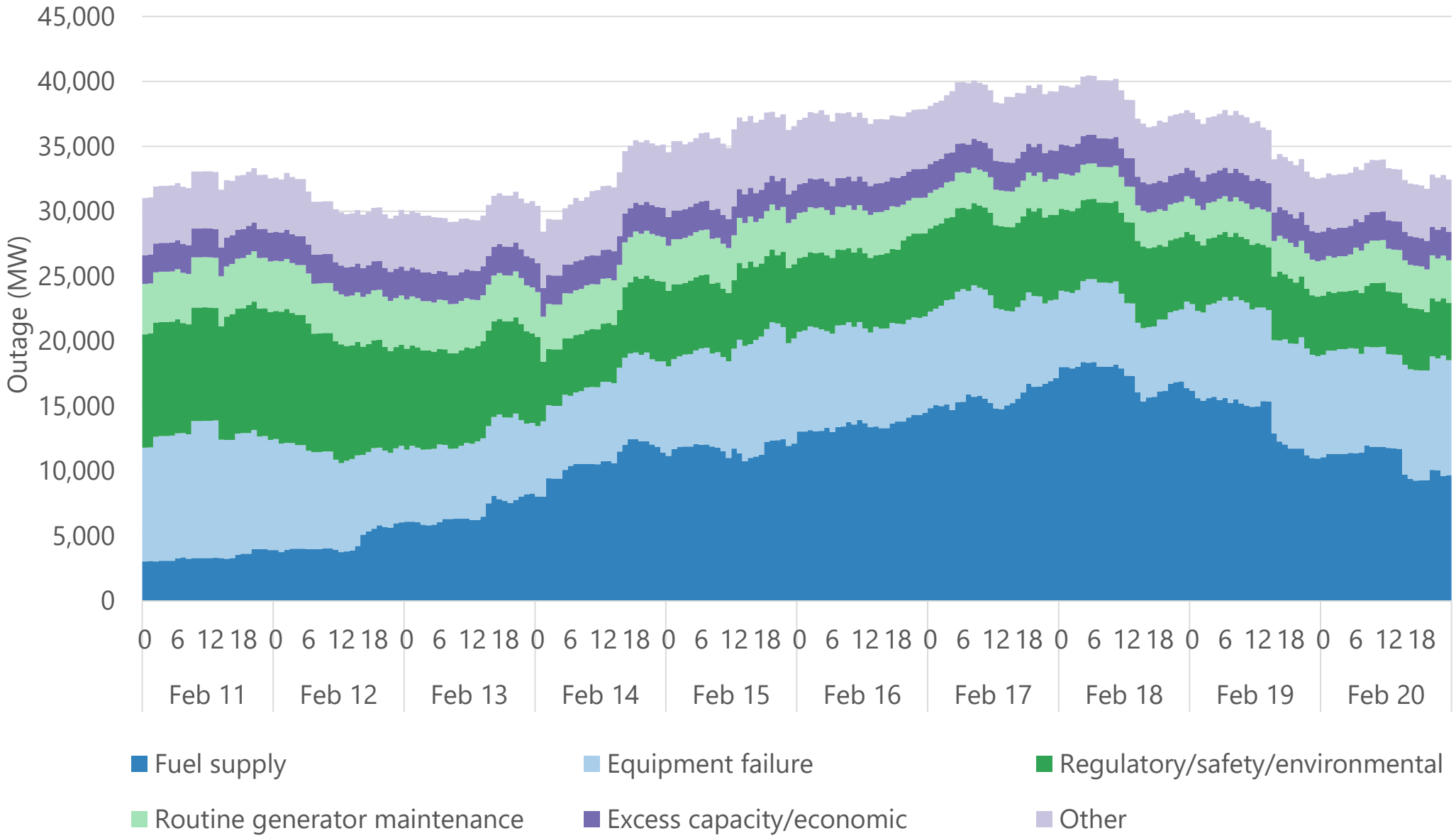


NATURAL GAS SUPPLY DROPPED SIGNIFICANTLY

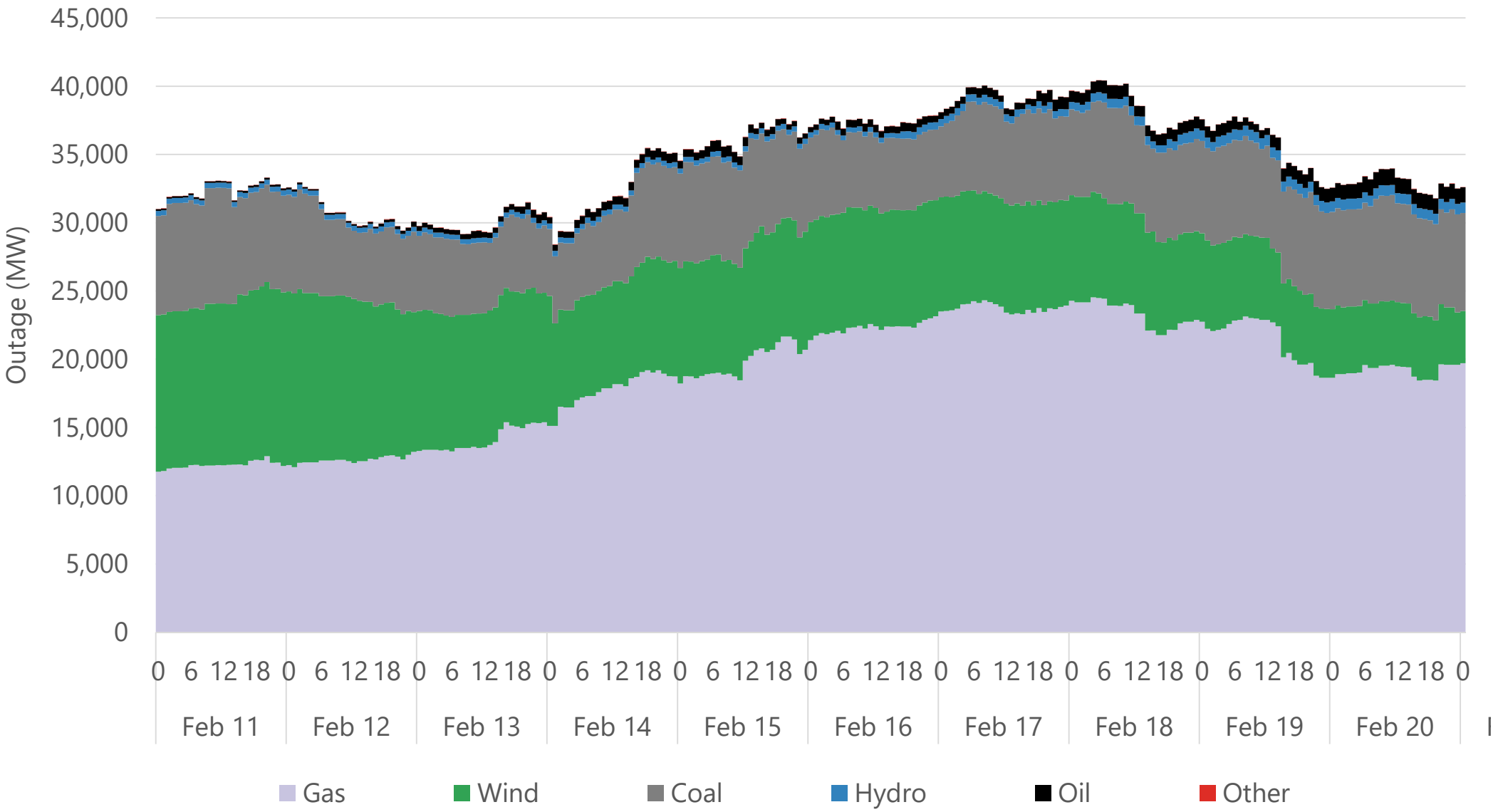


https://www.eia.gov/todayinenergy/detail.php?id=46896

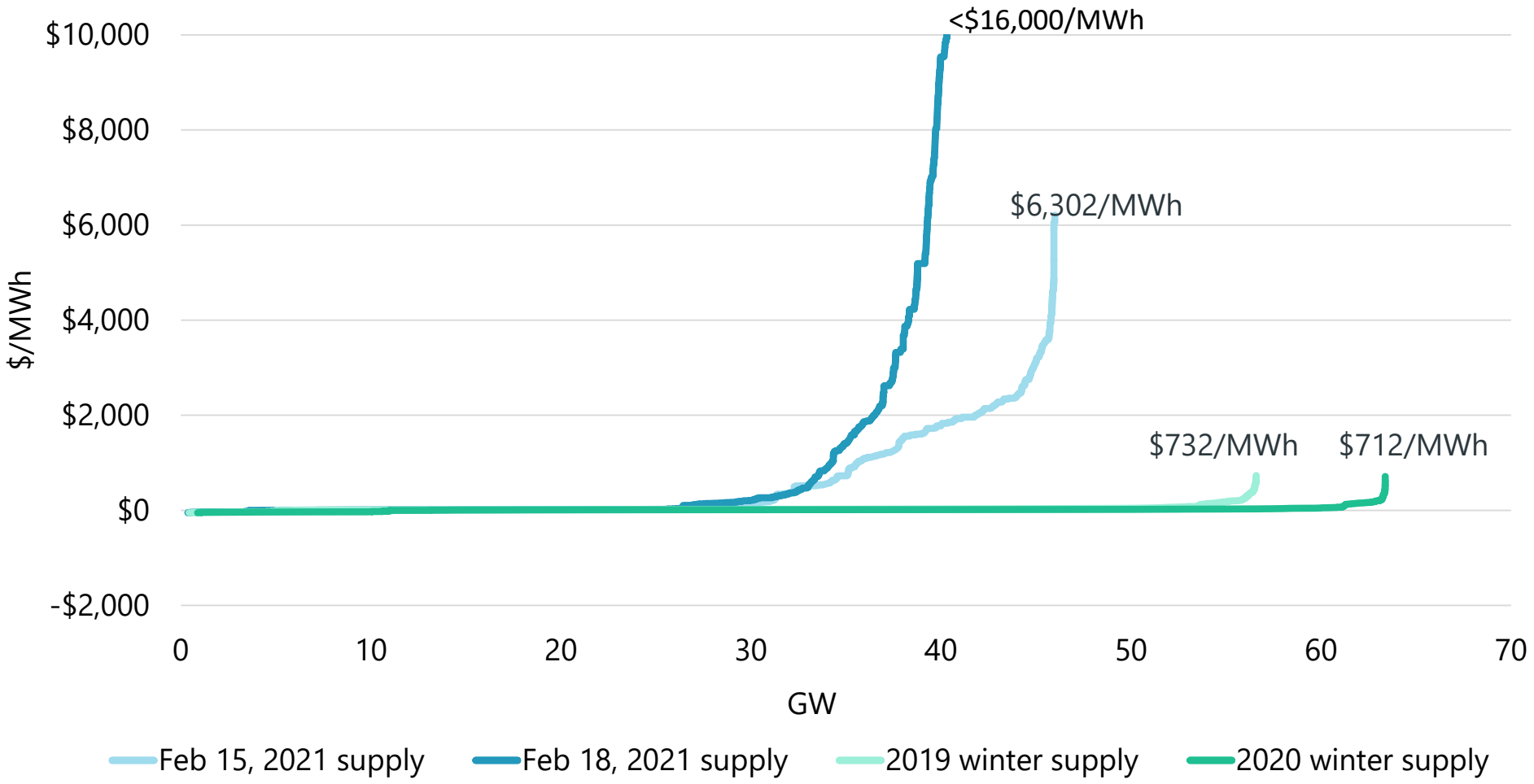
GENERATION OUTAGES BY REASON



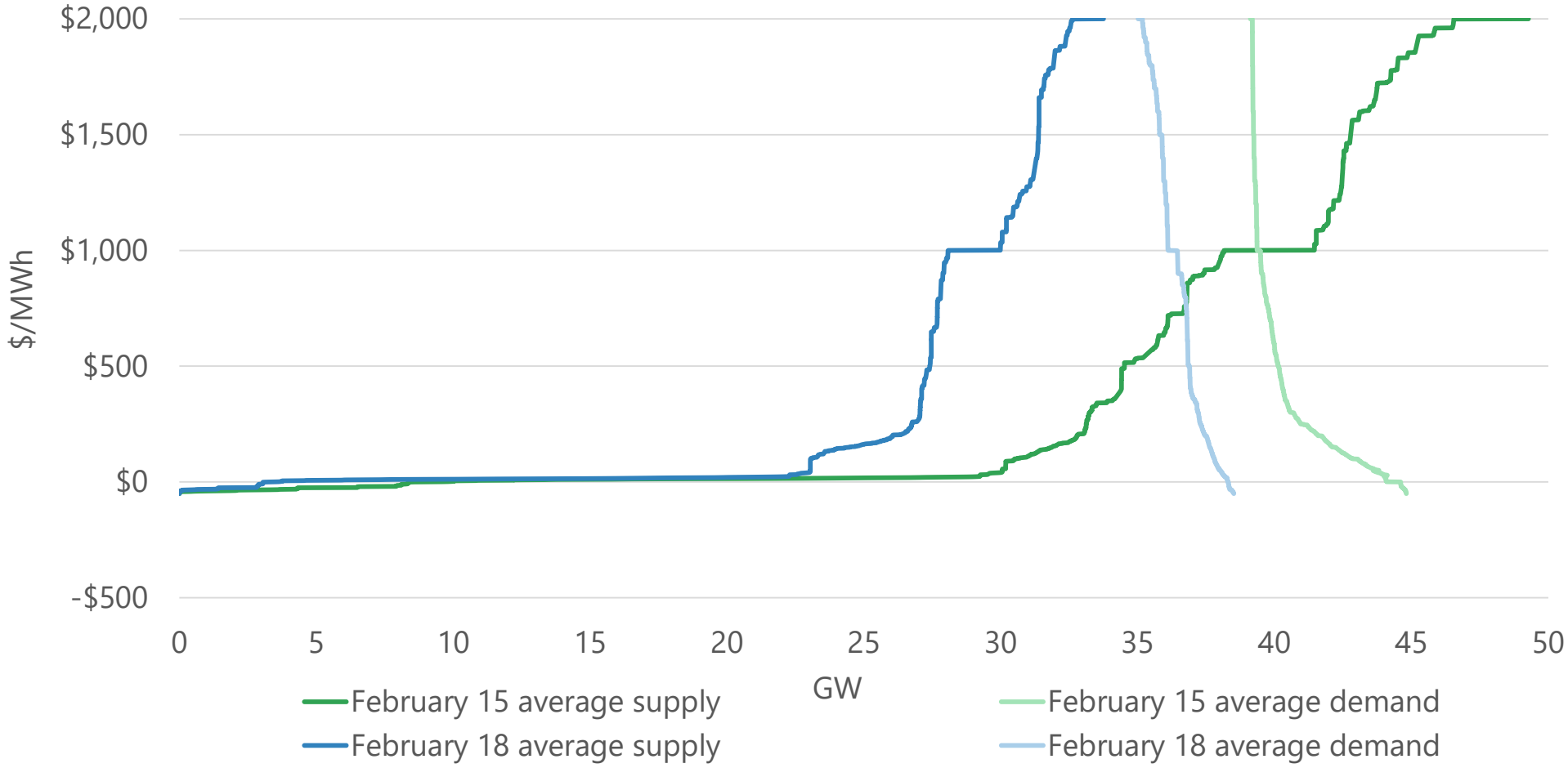
GENERATION OUTAGES BY FUEL TYPE



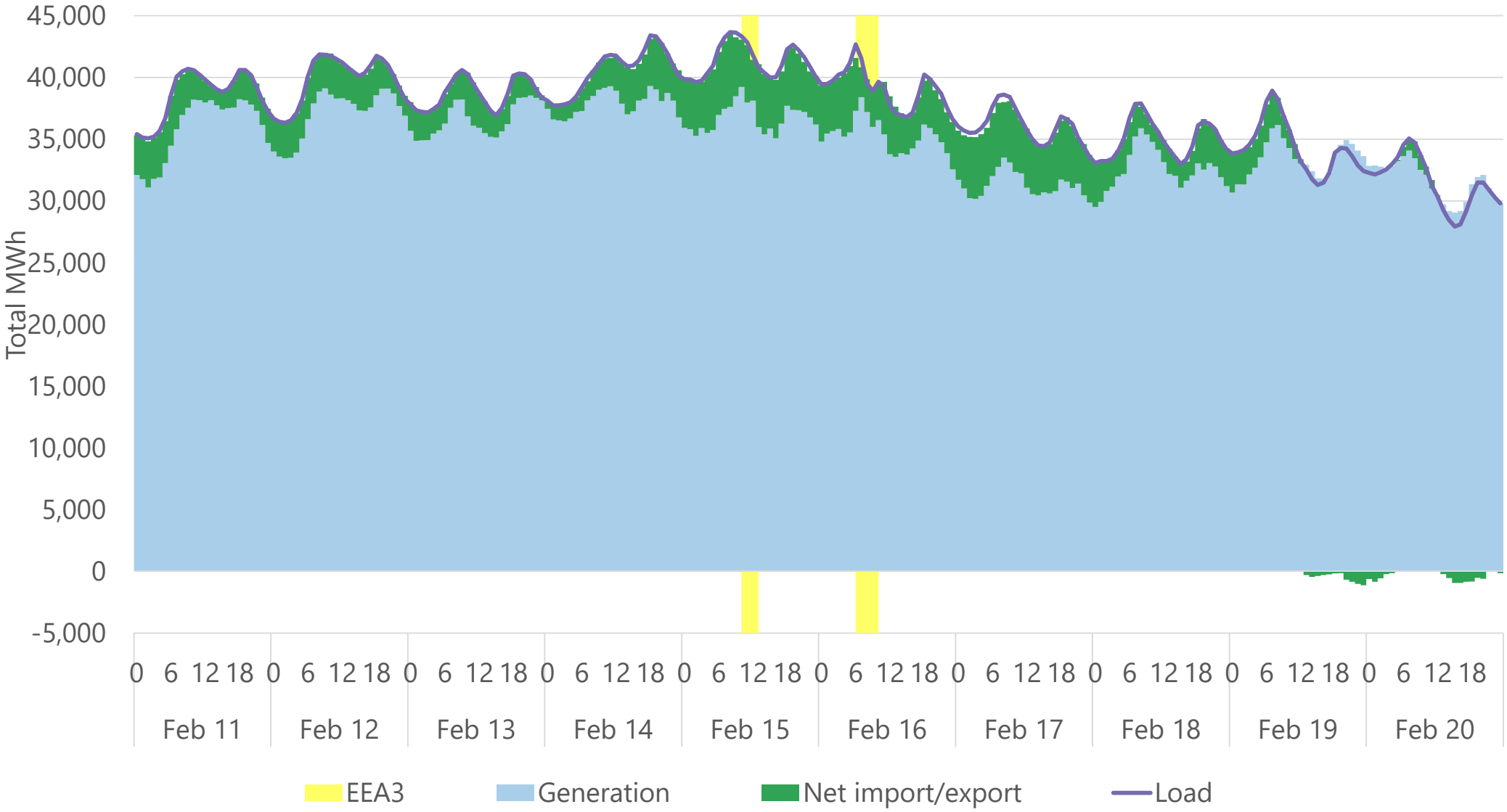
SUPPLY CURVE – UNCAPPED OFFERS



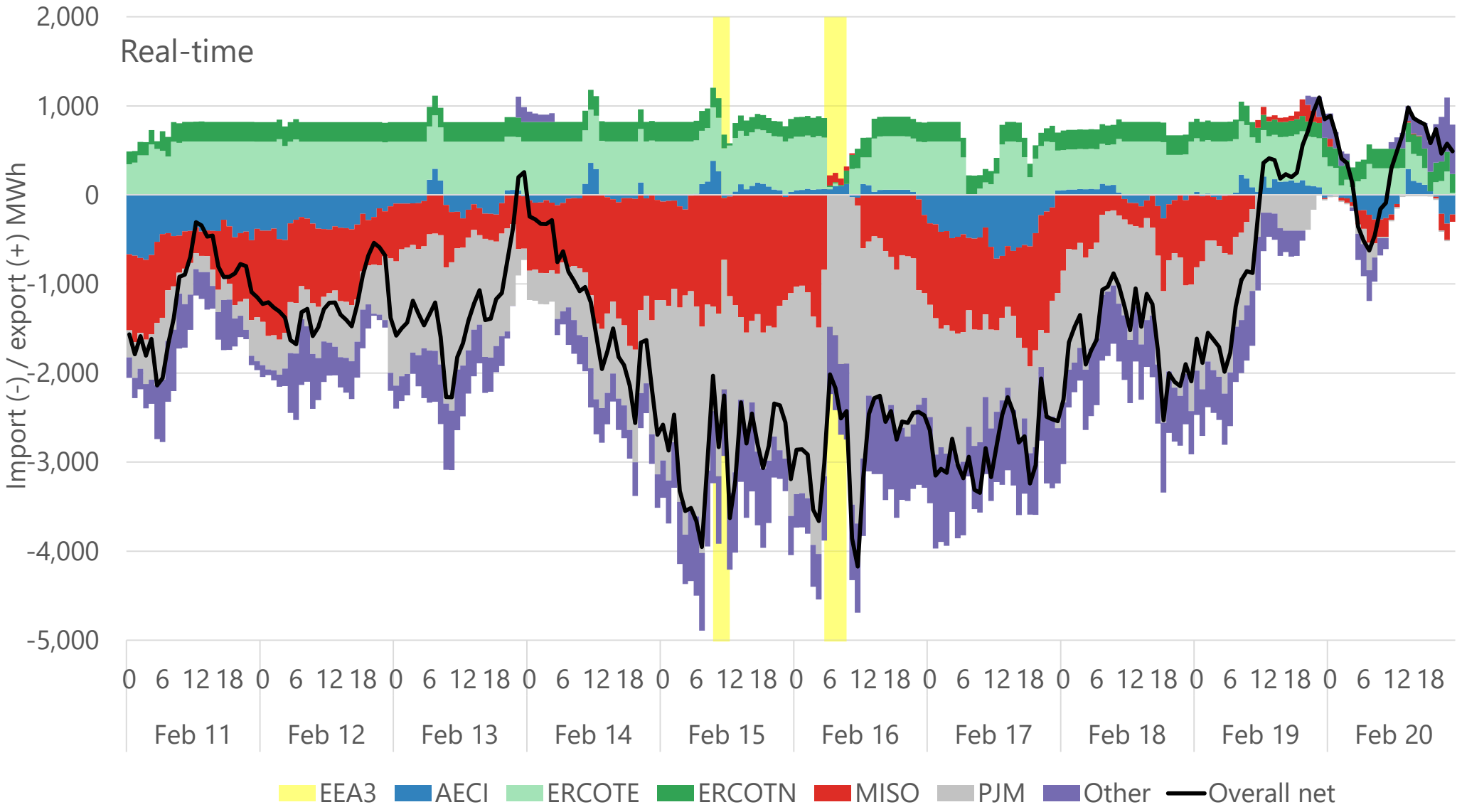
DAY-AHEAD SUPPLY CURVE – CAPPED OFFERS



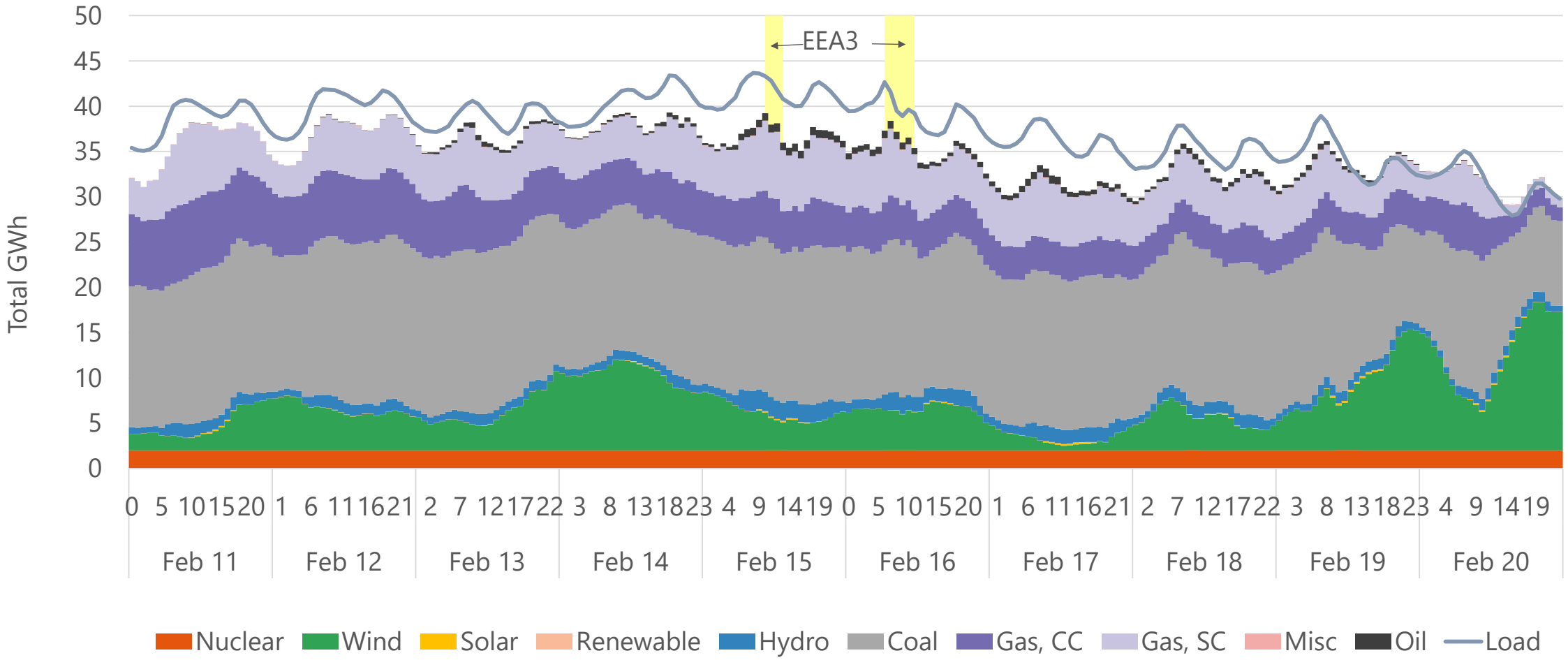
GENERATION AND NET IMPORTS/EXPORTS COMPARED TO LOAD



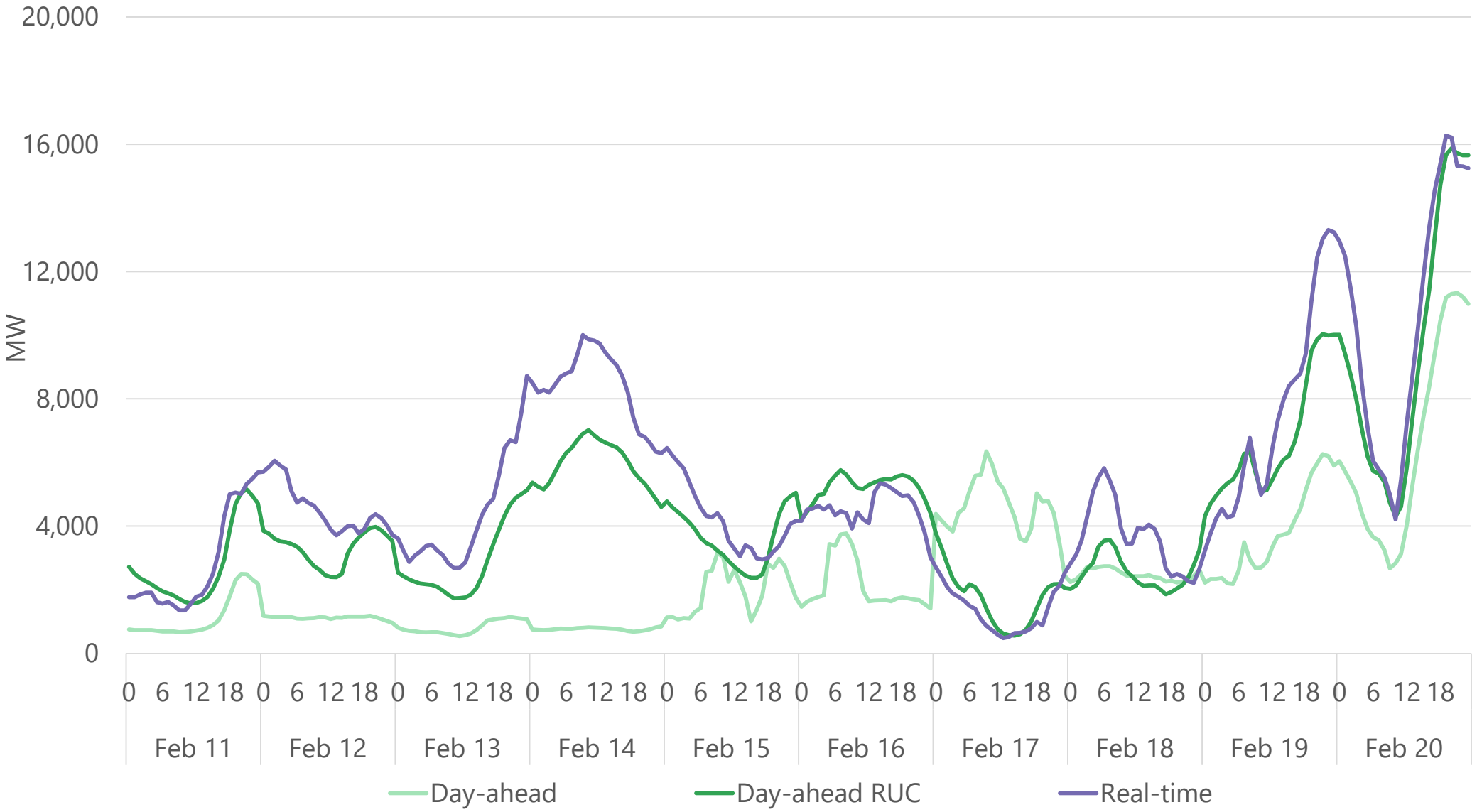
IMPORTS AND EXPORTS



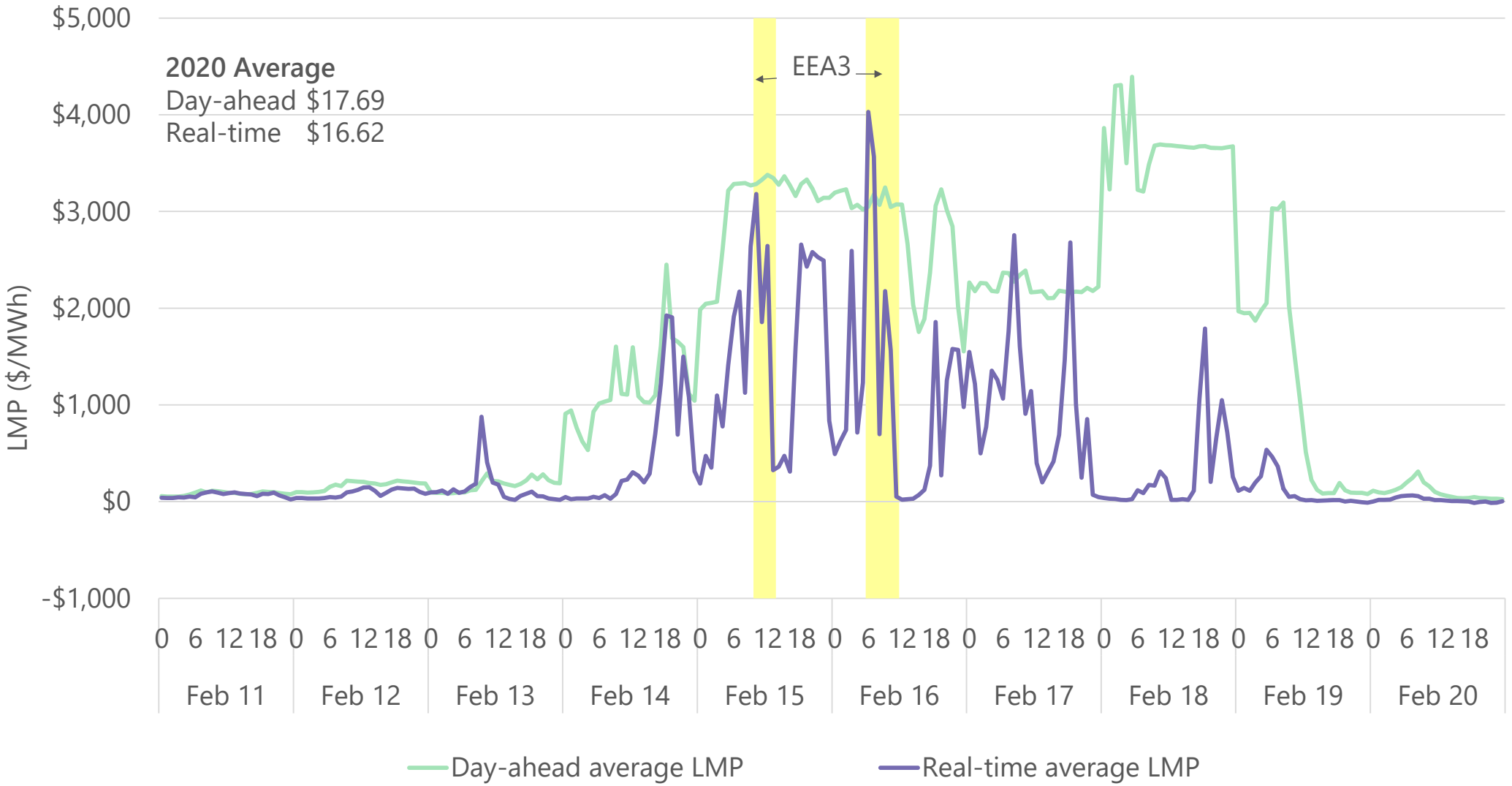
GENERATION BY FUEL TYPE



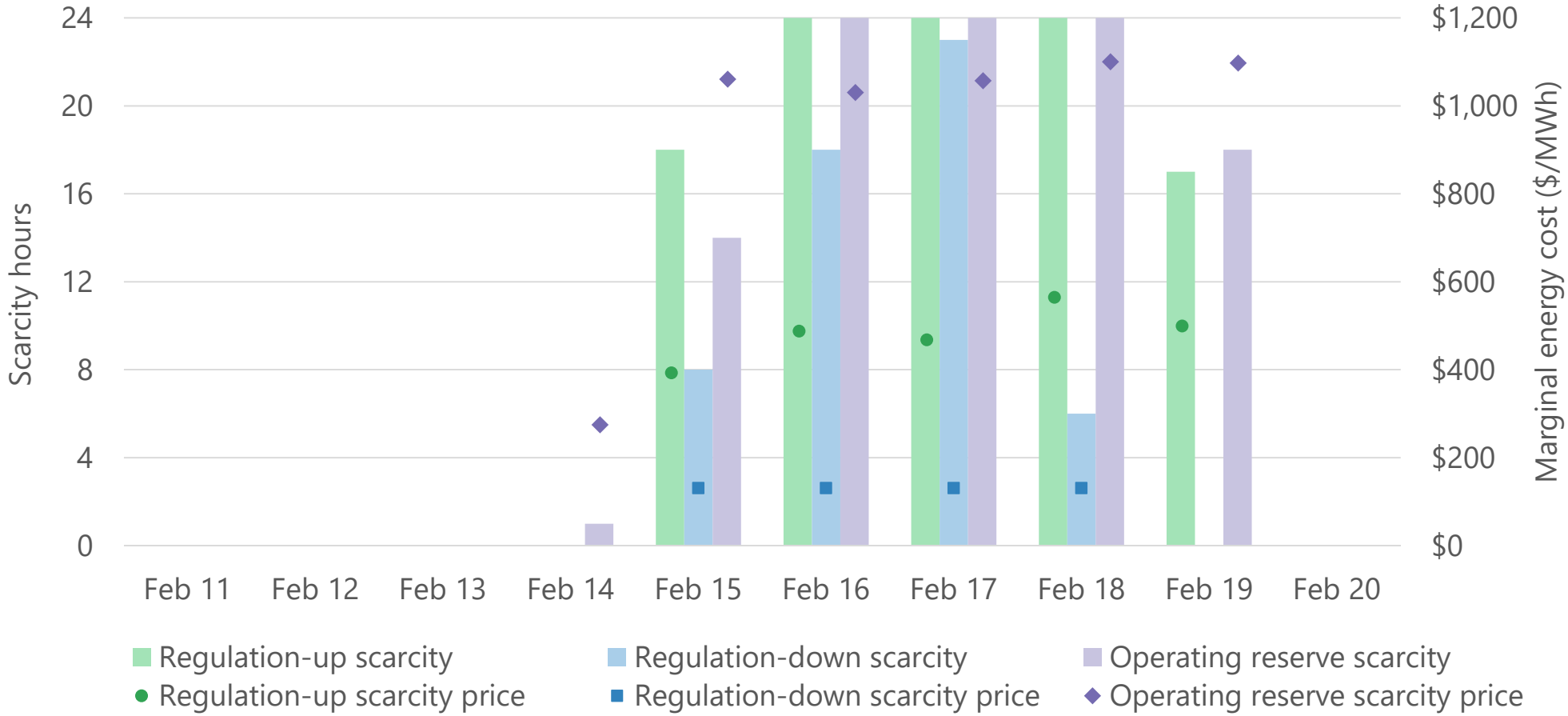
WIND GENERATION



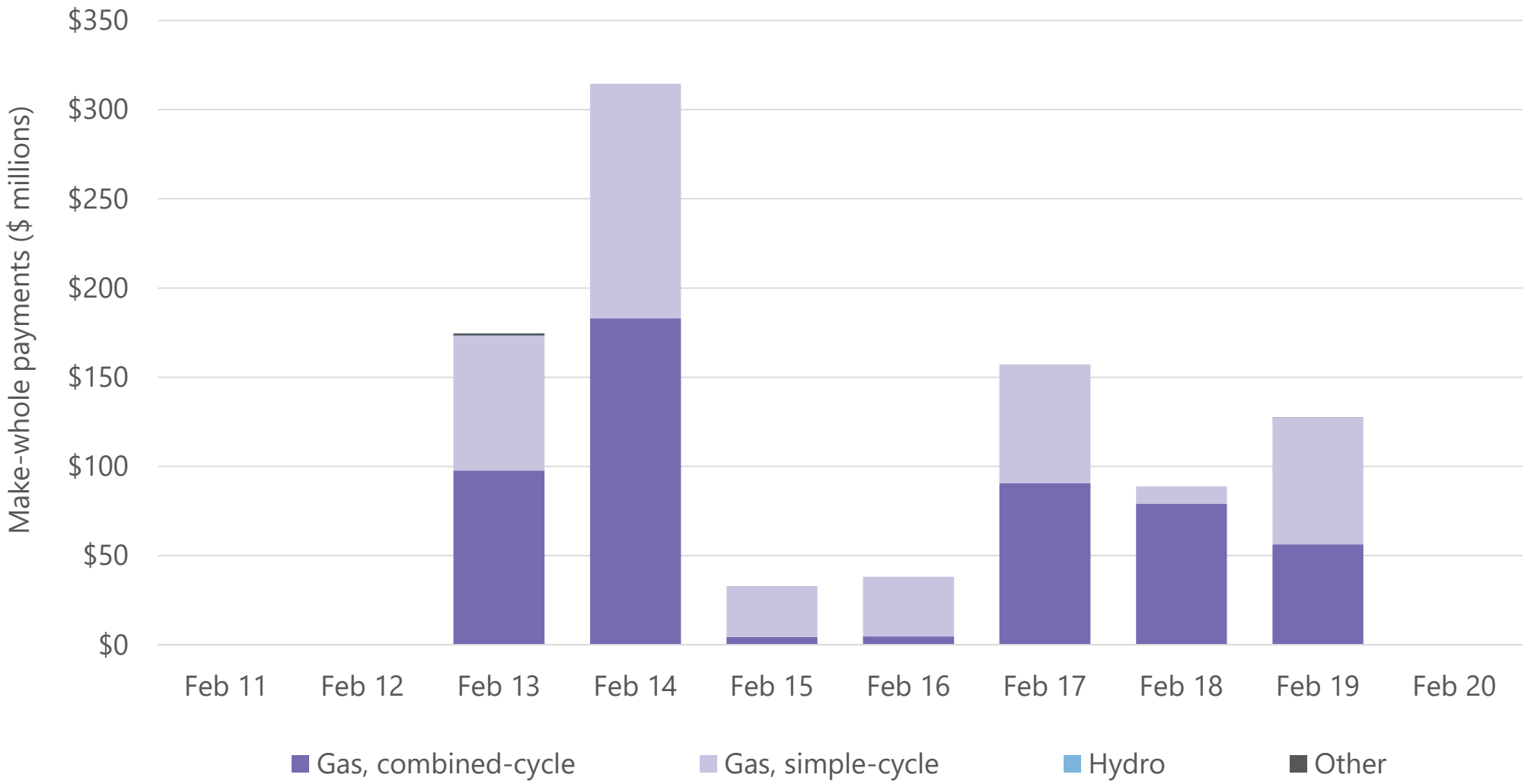
HOURLY ENERGY PRICES



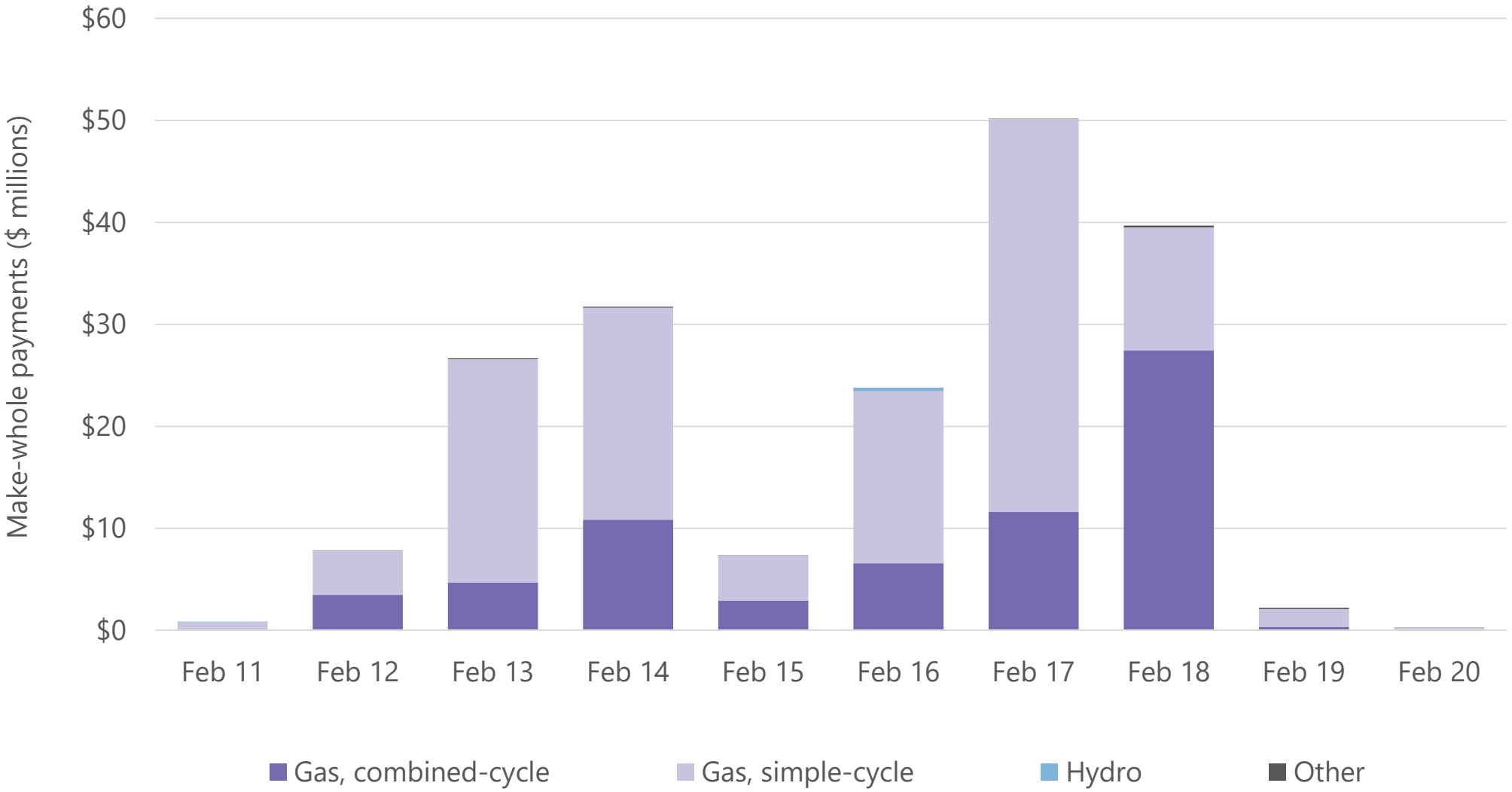
DAY-AHEAD SCARCITY



DAY-AHEAD MAKE-WHOLE PAYMENTS



REAL-TIME MAKE-WHOLE PAYMENTS



KEY TAKEAWAYS

- Overall, electric markets worked
  - High prices in SPP signaled imports from other regions
  - Imports addressed capacity shortfalls in SPP
- Fuel supply issues, primarily natural gas, were a primary cause of outages and resource scarcity
- Exorbitant prices for natural gas drove electric prices and costs

KEY QUESTIONS

- Should there be seasonal or monthly capacity requirements?
- Can natural gas resources be considered firm supply in winter?
- Should there be performance incentives/disincentives?
- How can gas/electric coordination be improved?
- What visibility should the RTO/market have with regards to resources behind the meter?
- How should economic outages be treated during emergencies?
- Could availability payments help manage outages?

QUESTIONS?