NATURAL GAS PERFORMANCE DURING WINTER STORM URI

An analysis, commissioned by the Texas Oil and Gas Association (TXOGA), reveals that power outages, which originated at power generation units, were the principal factor for natural gas production and transportation reductions or shutdowns during Winter Storm Uri.

The analysis, prepared by Enverus, examined the performance of the upstream and midstream sectors of the Texas natural gas industry during the recent winter storm and factors contributing to performance issues and is based on data from ERCOT and the U.S. Energy Information Administration and surveys of upstream and midstream operators.

ENVERUS

Winter Storm Uri – Natural Gas Analysis

Prepared for: Texas Oil and Gas Association (TXOGA)

Key Takeaways

- The issues started at power generation units due to extreme cold weather.
- Once power outages began, natural gas production was impacted because surface facilities and infrastructure relies heavily on electricity for operations, which then exacerbated the ability for power generators to receive natural gas supplies.
- Even with these challenges, Texas natural gas production exceeded Texas demand during the storm, yet matching supply with demand proved challenging.
- Natural gas storage withdrawals increased, however, some facilities faced power outages and were not able to operate at maximum levels.
- Natural gas deliveries to LNG terminals, exports to Mexico, and exports to other neighboring regions were decreased and a significant amount of the natural gas available was used to meet demand within Texas.
- The common denominator that caused most disruptions to both upstream and midstream sectors was the loss of power and electricity.
- Upstream survey responses focused on loss of power (65%), wellhead and equipment freeze-offs (13%) and not being able to get production out due to issues with third-party facilities (8.7%) as the main causes that influenced operations.
- Midstream survey responses focused on loss of power and lack of production from upstream as the main causes of downtime for infrastructure.

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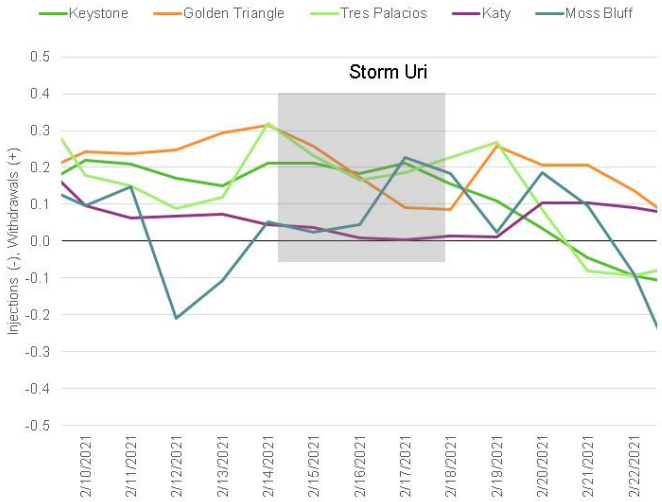
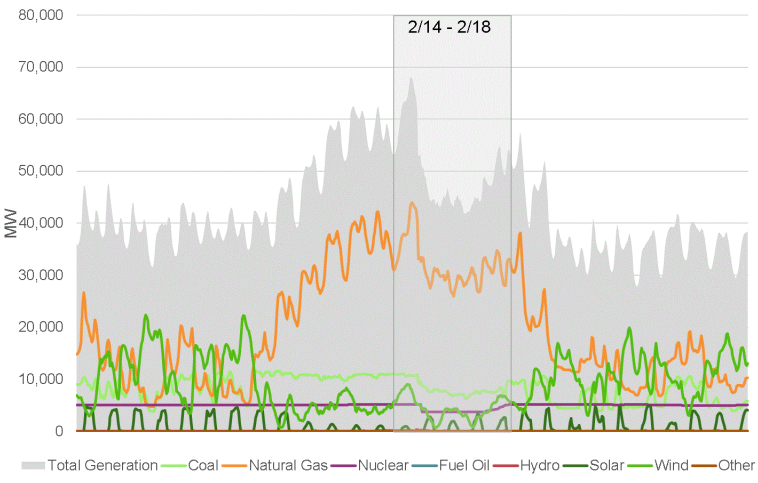
Texas lost significant natural gas production while local demand increased. Even with these challenges, Texas natural gas production exceeded Texas demand during the storm, yet matching supply with demand proved challenging. Additionally, natural gas storage withdrawals increased, however, some facilities faced power outages and were not able to operate at maximum levels.

TEXAS GAS STORAGE FACILITIES - NET STORAGE WITHDRAWALS

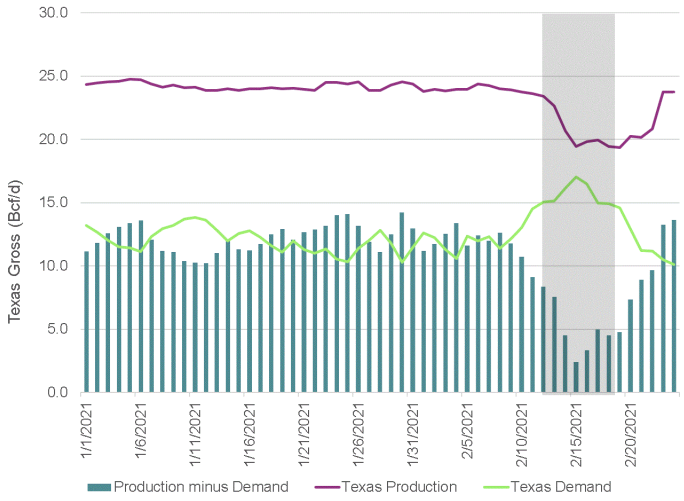


Independently, a preliminary report by ERCOT confirms the causes for lost power generation during the February blackouts, listing power plants freezing up as the primary cause, with fuel limitations - which includes loss of natural gas production - representing a very small portion, and ranking fourth in causation.

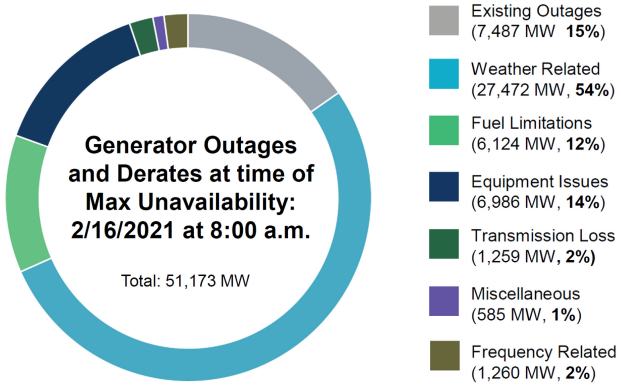
FEBRUARY ERCOT HOURLY GENERATION BY FUEL TYPE



TEXAS PRODUCTION AND DEMAND



Further, natural gas deliveries to LNG terminals, exports to Mexico, and exports to other neighboring regions decreased and a significant amount of the natural gas available was used to meet demand within Texas. Ultimately, the entire energy infrastructure chain was under significant stress during the storm creating infrastructure challenges which limited the ability of the available natural gas supply to match with demand.



During this event, natural gas provided the majority of generation. Natural gas supplied more than 60% of electricity generation every single day during the storm. At the height of the extreme cold weather event, natural gas was providing 67% of all power generation in Texas.

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