



February 2021 Texas Power Outages

Key Findings and Regulatory Lessons

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Energy Regulators Regional Association (ERRA) Meeting

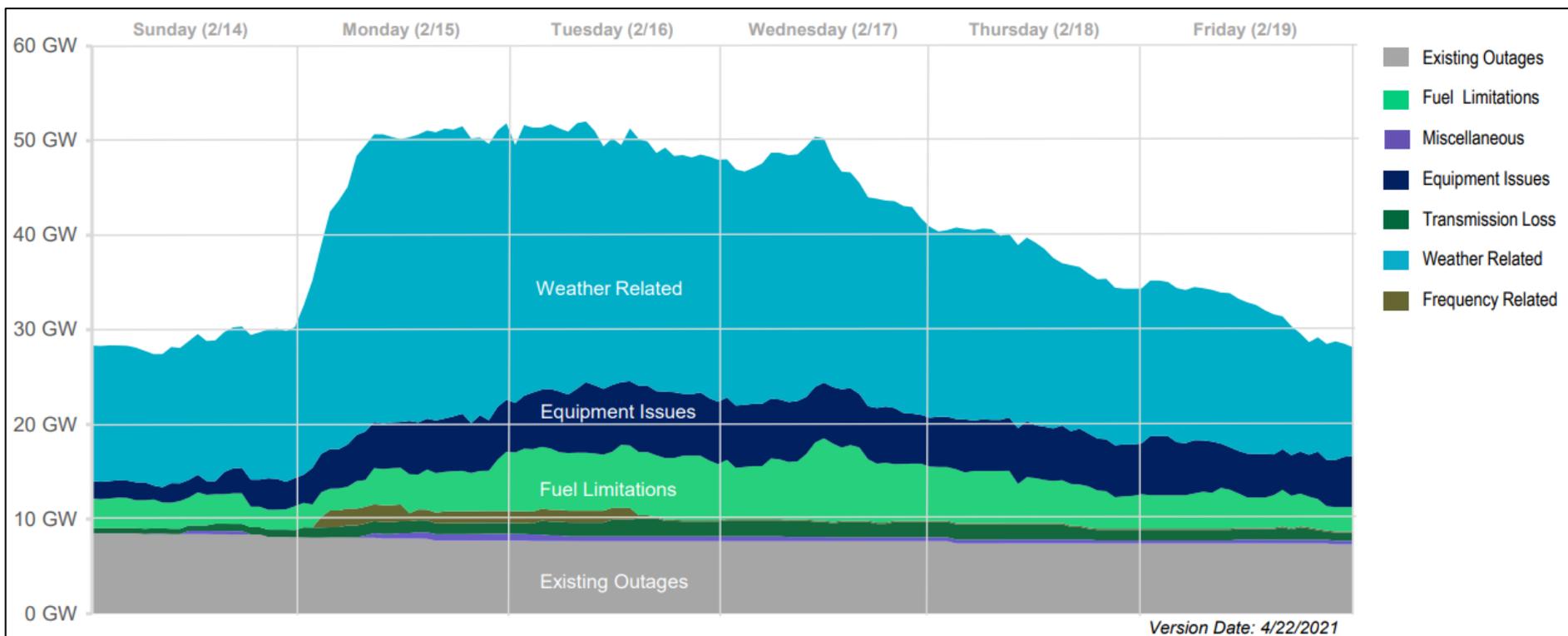
May 19, 2021

- Recap of February Events in ERCOT
- Key Findings
 - Winterization
 - Market Design
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- Regulatory Response of the Texas Commission
- Next Steps
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Recap of February Events in ERCOT



Net Generator Outages and Derates by Cause (MW) February 14 – 19, 2021



Version Date: 4/22/2021

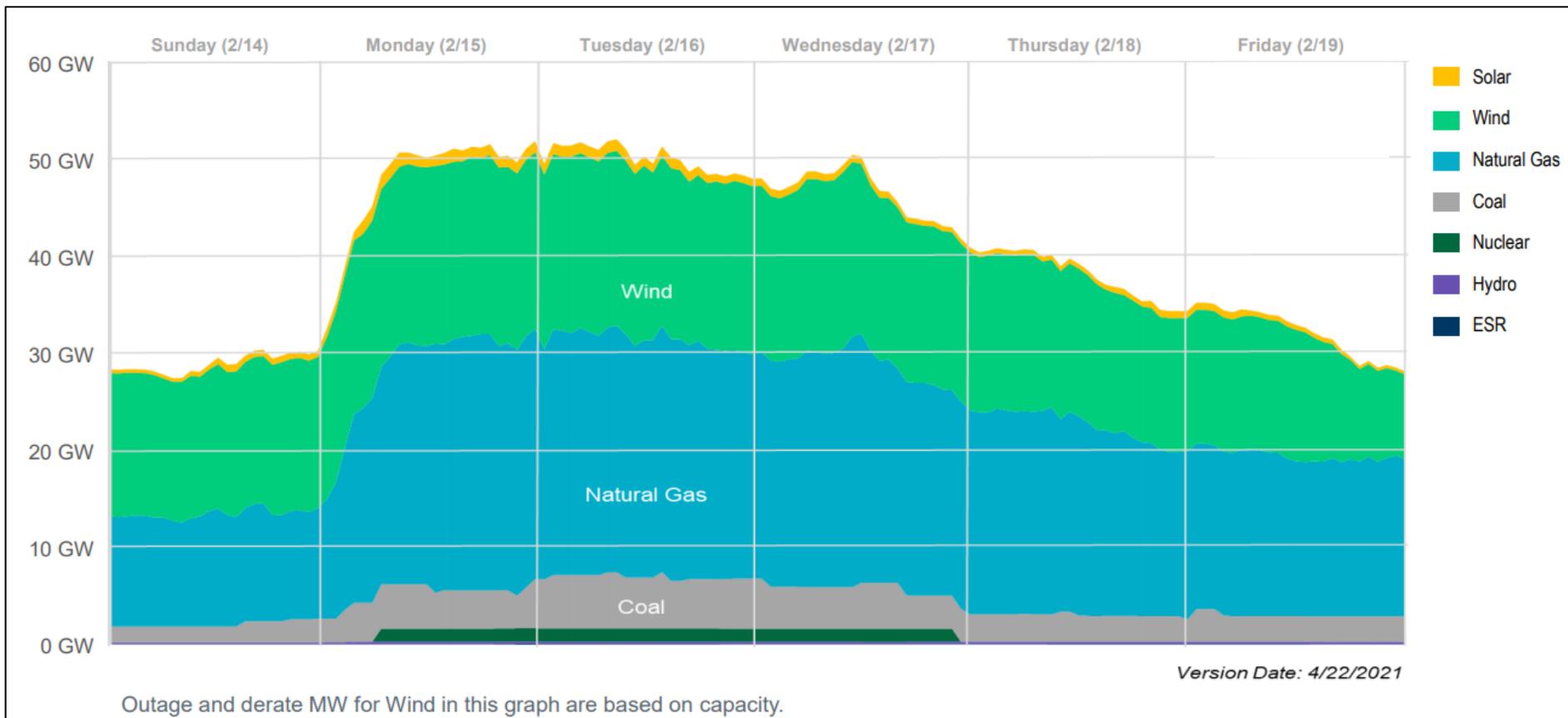
Net generator outages at the beginning of each hour on February 14-19, 2021, by cause category.

Source: ERCOT

Recap of February Events in ERCOT

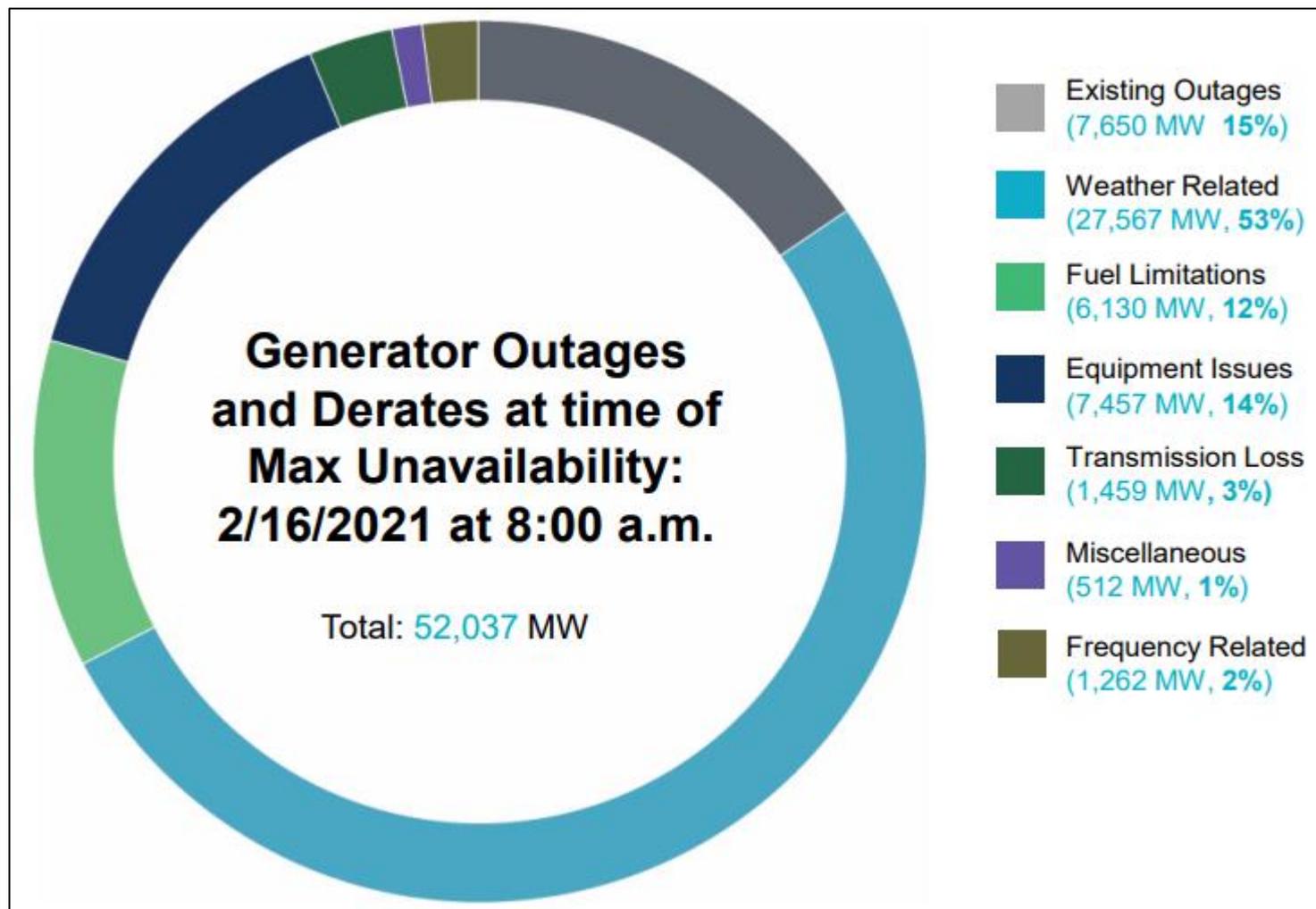


Net Generator Outages and Derates by Fuel Type (MW)



Source: ERCOT

Recap of February Events in ERCOT



Source: ERCOT

■ Winterization

- Generators (nearly all types) were not adequately winterized
- Insufficient preparation for identified natural gas supply uncertainties during extreme events
- Failed coordination and load shedding protocols resulted in outages at pipeline compressor stations

■ Market Design

- No obligation to perform for generators
- ERCOT prioritizes efficiency (slim reserve margins) over reliability
- Resource investments reliant on short-term markets; is scarcity pricing enough to incentivize adequate investment?

■ Regulatory Structure

- Unique relationship between PUCT, ERCOT, and TRE
- Direct and indirect impacts of deregulation in Texas

Key Findings – Winterization (Generation)

Texas Plant

Colorado Plant



Exposed Boilers / Scaffolding Only

Protected Boilers

Key Findings – Winterization (Fuel)

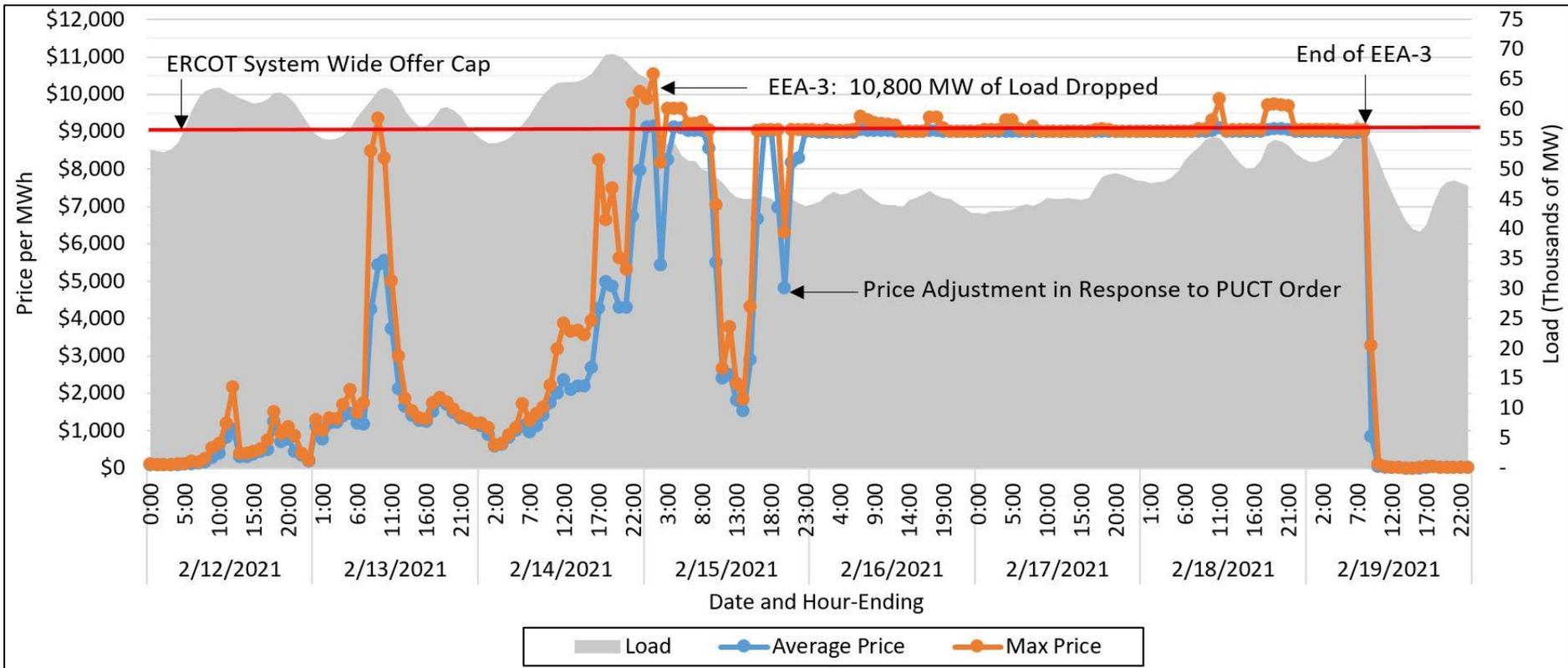
Frozen Natural Gas Supply Infrastructure



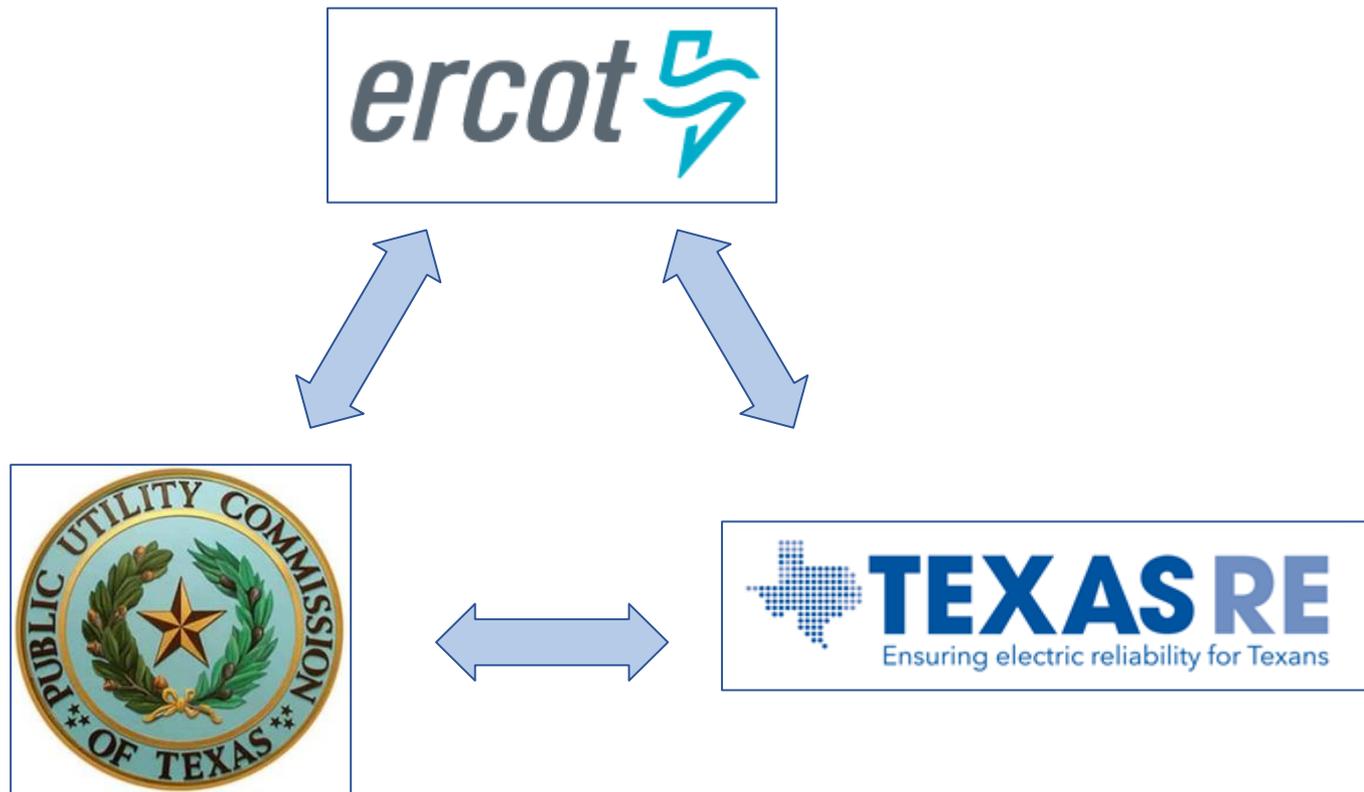
Source: Austin American Statesman / Getty Images

Key Findings – Market Design

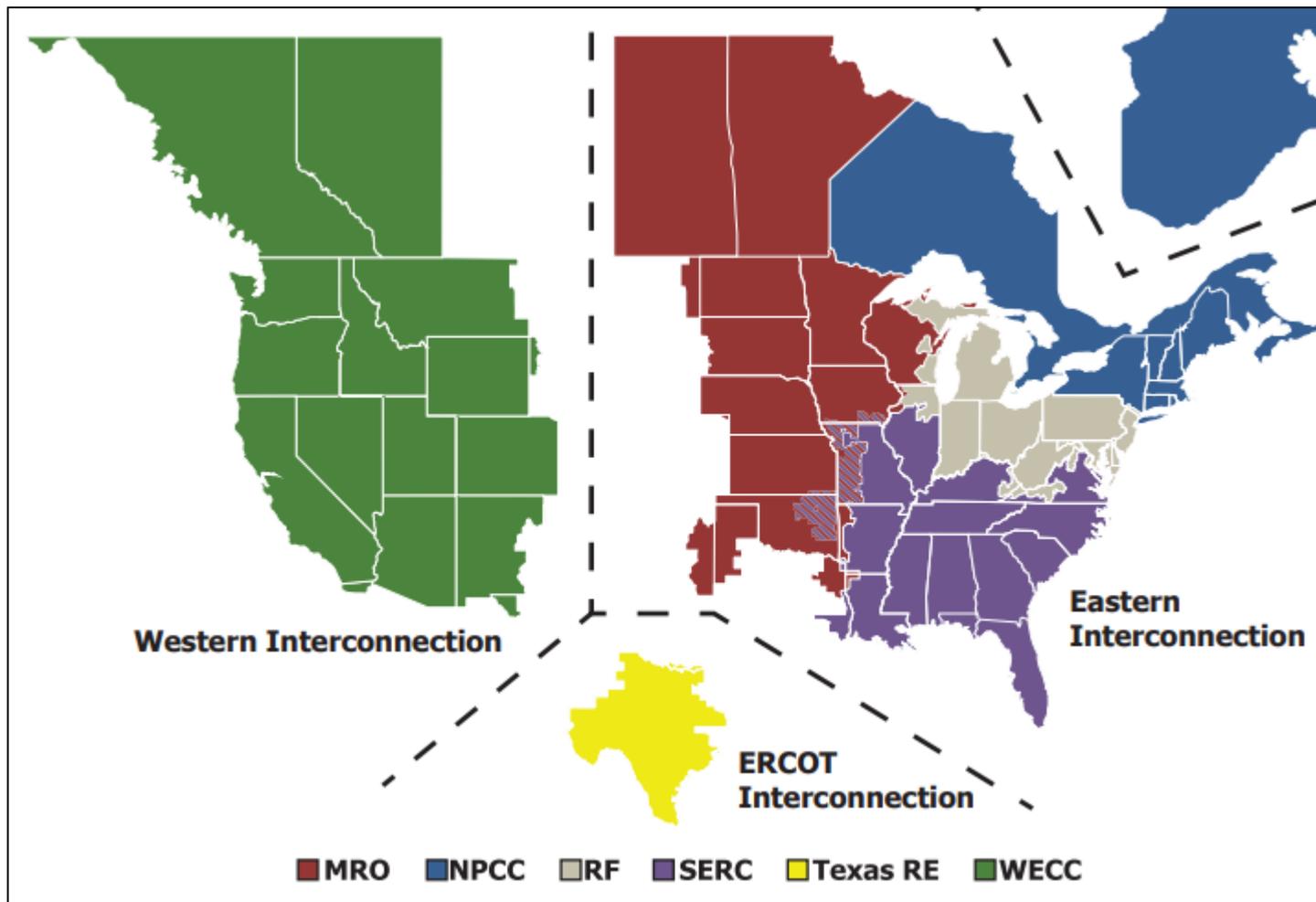
ERCOT Energy Prices: February 12-19



Key Findings – Regulatory Oversight



Key Findings – Regulatory Oversight



Regulatory Response by the Texas Commission



Prior to Event	During Event	After Event
The Public Utility Commission of Texas failed to produce annual reports on electric power winter readiness, as required in a law passed following the February 2011 outages*	Feb 15, Commission ordered ERCOT to ensure load shed events reflect scarcity pricing signals in the market, effectively setting prices at or near the cap of \$9,000/MWh	The Commission voted against repricing the period of “longer-than-necessary” scarcity pricing that held the region at or near the market cap for 32 hours
ERCOT’s market monitor did not examine potential risks of extreme cold weather events	The Commission also suspended the LCAP to protect consumers from extremely high gas prices	Approved a claw-back of ancillary services that were not actually delivered during the event
Feb 11: Commission warned consumers of high demand on February 15. due to the lowest temperatures in decades	Feb 18: Commission ordered utilities to limit rotating outages to 12 hours	Feb 21-24: Commission ordered suspension of disconnections due to non-payment; required REPs to offer deferred payment plans

*Giberson, M. Moore, A. [Texas Power Failures: What Happened in February 2021 and What Can Be Done](#). P. 34

- Federal Energy Regulatory Commission (FERC) and the North American Electric Reliability Corporation (NERC) are collaborating on analysis and recommendations
- Compliance (or failure to comply) with recommendations from the 2011 FERC/NERC report will likely be examined
- NERC Reliability Standard under development since July 2019:
 - The Southwest Power Pool, Inc. (SPP) submitted a standard authorization request (SAR) proposing a new standard development project to enhance the reliability of the BES during cold weather events by ensuring Generator Owners, Generator Operators, Reliability Coordinators, and Balancing Authorities are adequately prepared.

- The Texas Legislature has held hearings and introduced bills to explore:
 - Challenging policy questions around potential winterization requirements for generators:
 - Benefit-cost analysis
 - Examination of plant failures in 2011 and 2021
 - Future requirements could be locational (north vs. southern; coastal vs. non-coastal)
 - Tailored requirements by resource type
 - Which natural gas plants failed due to lack of fuel?
 - Requirements for pipelines? Compressor stations?

- Capacity market or other mechanism needed to prioritize adequate planning reserves
- Improved resource adequacy assessments with more advanced modeling and extreme weather scenarios
- Any changes to the ERCOT market should be informed by...
 - What went right vs. what went wrong before making drastic changes to the market structure
 - The massive shift in money during the event



Questions?

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