

Electricity - Natural Gas Intersection

ESIG 2021 Meteorology & Market Design Workshop

Closing Plenary Session, Energy Adequacy and Market Design – The Texas
Event Part 2

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Beth Garza

R Street Institute

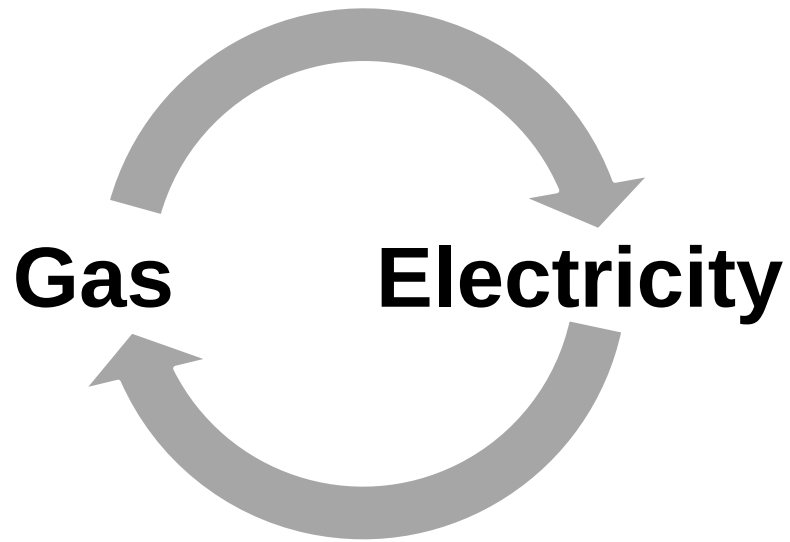


Free markets. Real solutions.

Simple Explanations

- Winter preparation was insufficient
 - Electricity, natural gas, water, roads, individuals
- Increased co-dependence of electricity and natural gas systems
- Inability for distribution utilities to rotate electricity outages, forcing curtailment burden to not be broadly shared
- Unbridled reliance on market forces during emergency conditions
 - Natural gas prices at never before seen levels
 - Extended duration of \$9000 electricity prices
 - Unlimited ancillary services prices

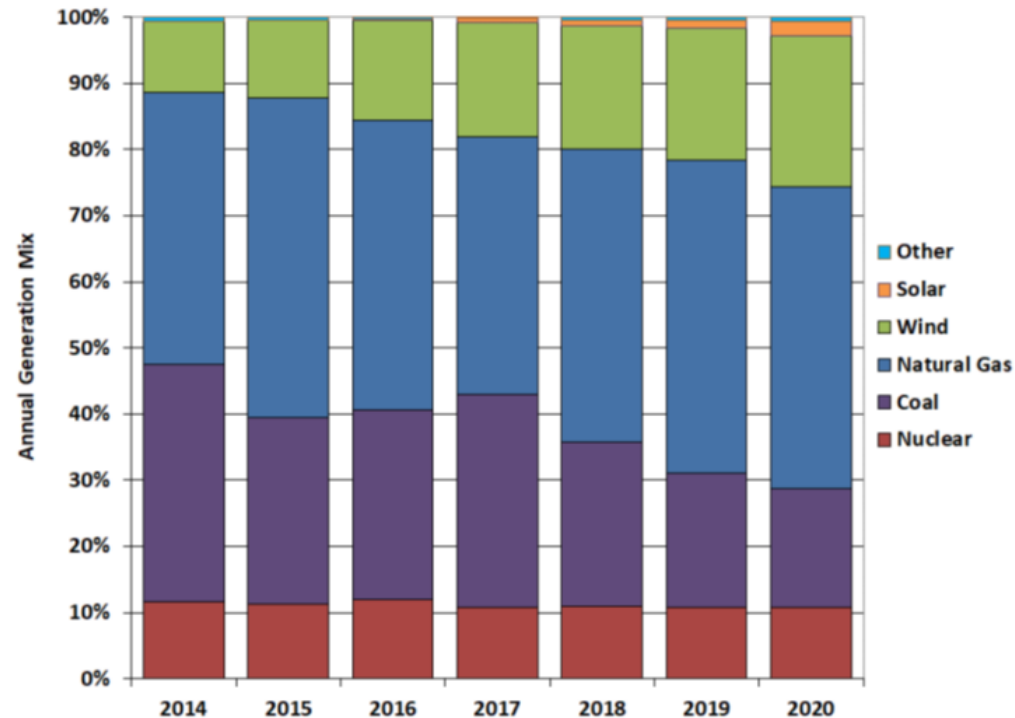
Interdependence



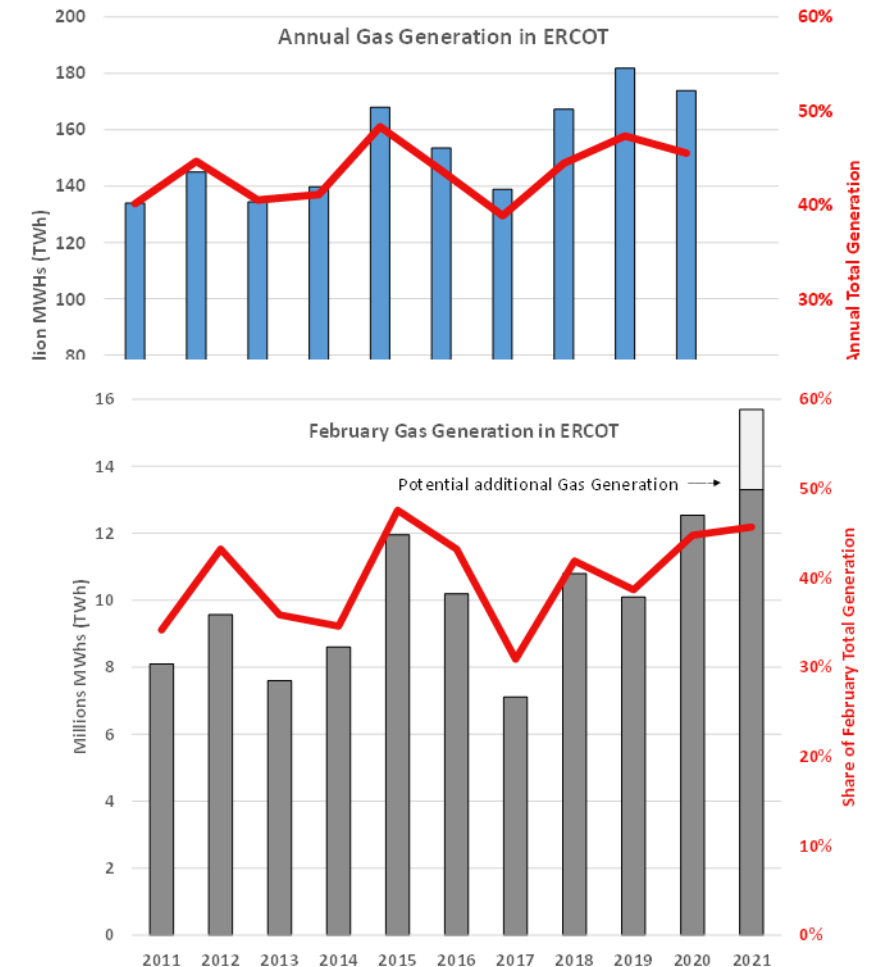
- Electricity relies on Gas to provide the largest share generation fuel
- How big a share of Gas revenue is from Electricity?
- Both markets provide financial opportunities for the other
 - Forward procurement
 - Sell back at real time prices
 - Declare force majeure
 - Emergency Reserve Service
- Gas relies on electricity for systems winterization

Natural Gas provides the largest share of ERCOT electricity

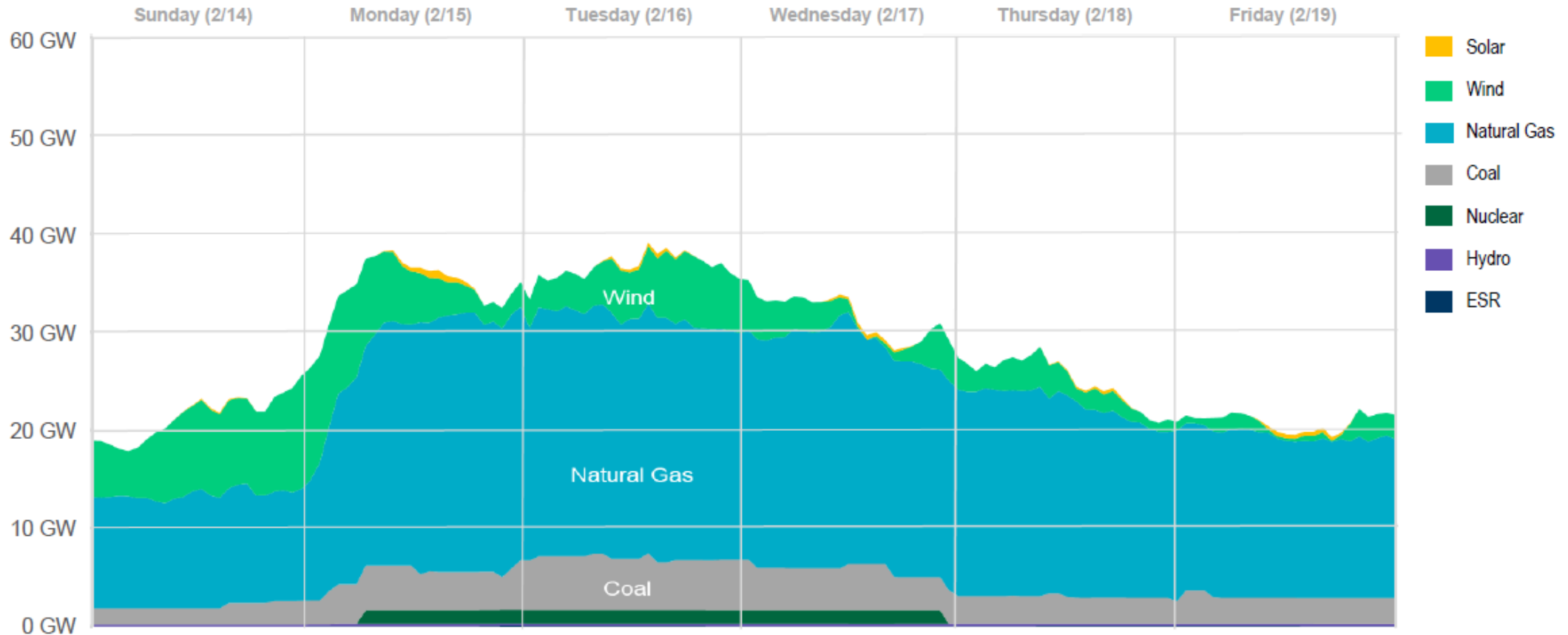
Figure 16: Annual Generation Mix in ERCOT



[2020 State of the Market Report](#)



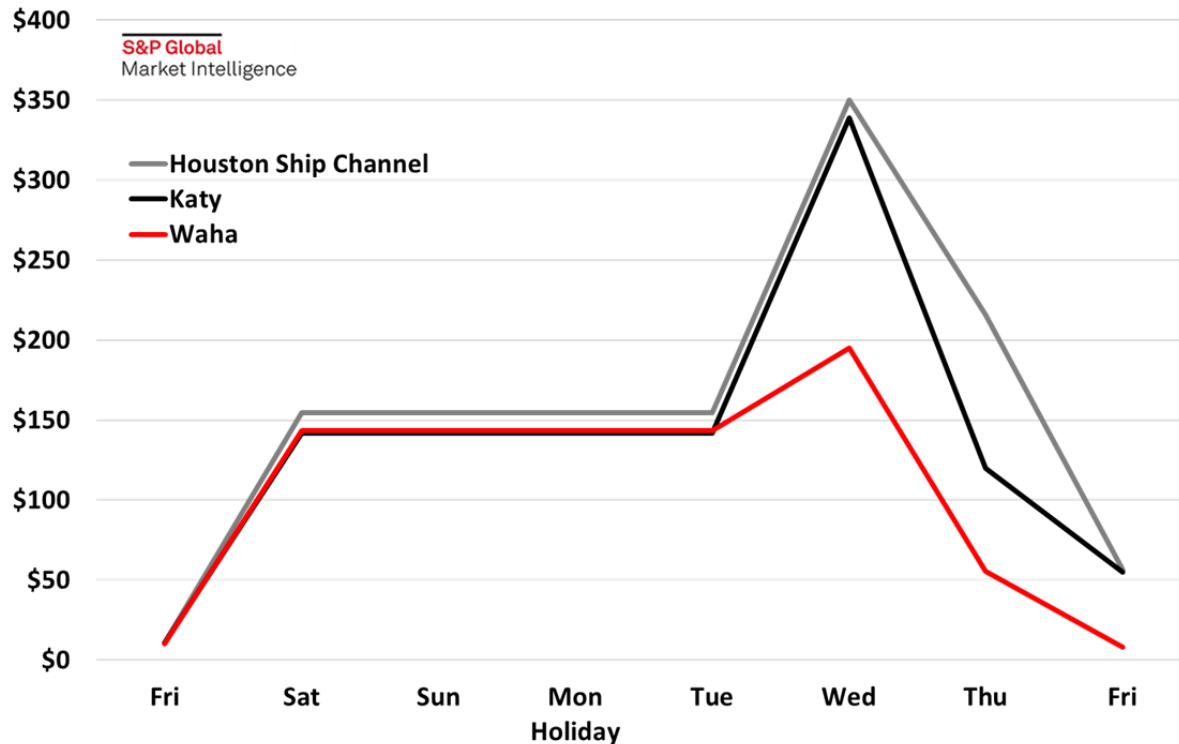
Net Generator Outages and Derates by Fuel Type (MW)



Version Date: 4/22/2021

Wind and solar MW values based on estimated lost output due to outages and derates from slides 15 and 16.

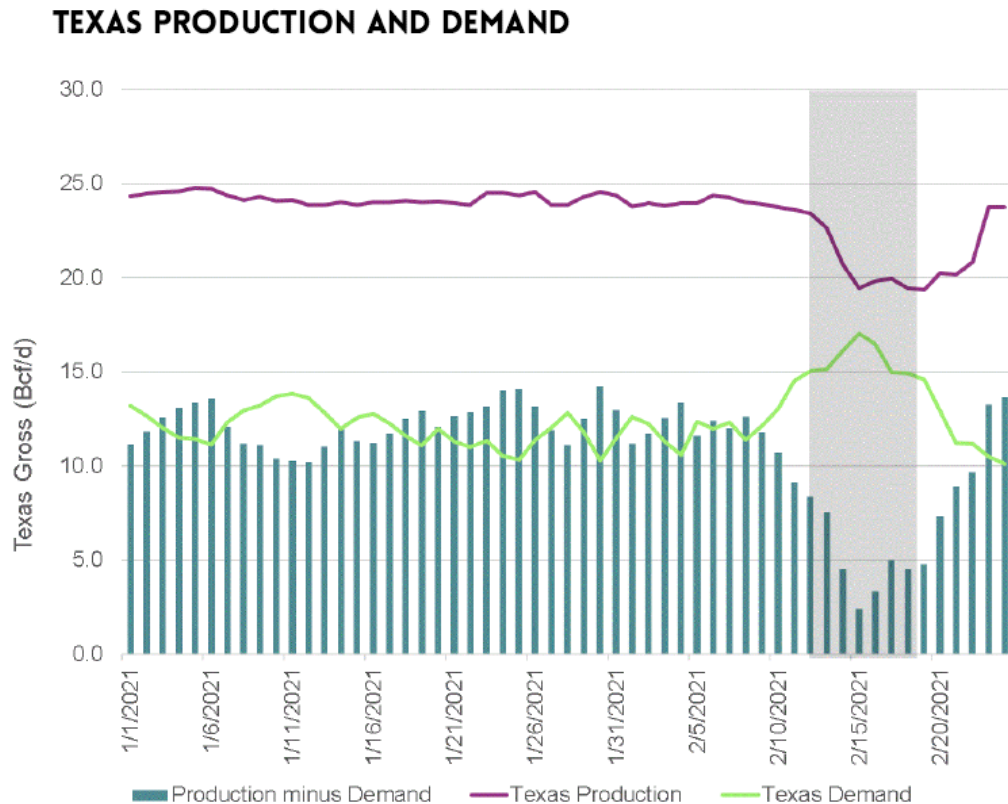
Natural Gas prices reached never before seen levels



- These index prices do not reflect delivered price to a power plant.
- Delivered prices were much higher, indicating scarcity of supply and transport.

Gas industry words don't seem to match the data

- “The issues started at power generation units due to extreme cold weather.”
- “Even with these challenges, Texas natural gas production exceeded Texas demand during the storm, yet matching supply with demand proved challenging.”
- [Winter Storm Uri – Natural Gas Analysis, Performed by Enverus for TXOGA](#)



Oversight of TX Gas Industry

Interstate - FERC

- Transportation rates and practices
 - Open access
 - Code of conduct between affiliated suppliers & pipelines
 - Transparency of available capacity

Intrastate – Railroad Commission

- Permitting and inspecting pipelines
- Oil & gas exploration and production
- Rate setting for LDCs

Railroad Commission Chairman Christi Craddick



“Some media outlets would have you believe that natural gas producers and frozen transmission lines caused the power shortages across the state,”

said Christi Craddick, who chairs a three-member commission overseeing the industry, during a Texas House of Representatives hearing Feb. 26.

“But ... these operators were not the problem. The oil and gas industry was the solution.”

[The Texas Tribune › 2021/03/19](#)

Similar testimony to [US House Committee on Energy & Commerce](#) on March 21, 2021



Enacted Legislative Changes in SB3

- Formalized Texas Energy Reliability Council (State Agencies, ERCOT, electricity and natural gas industry)
 - “Foster communication and coordination between energy and electric industries”
 - Produce a report in even years recommending methods to improve electricity supply chain
- PUCT, RRC, and ERCOT produce a map of electricity supply chain facilities
- PUCT and RRC collaborate to determine “critical” natural gas facilities
- PUCT develop winterization requirements for electric generation and transmission
- RRC develop winterization requirements for “critical” natural gas facilities

Thank you!

Beth Garza
bgarza@rstreet.org

www.rstreet.org