

The Texas Grid Failure

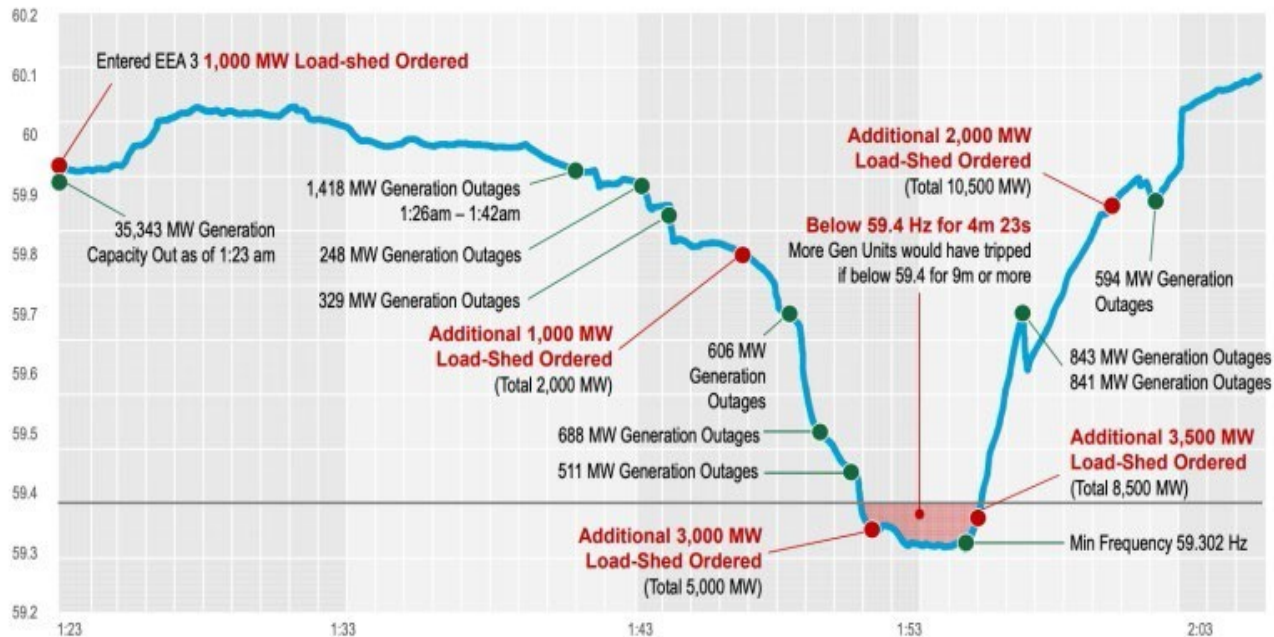
International Association of Energy Economists

July 14, 2021

Ed Hirs

What happened in ERCOT?

Rapid Decrease in Generation Causes Frequency Drop



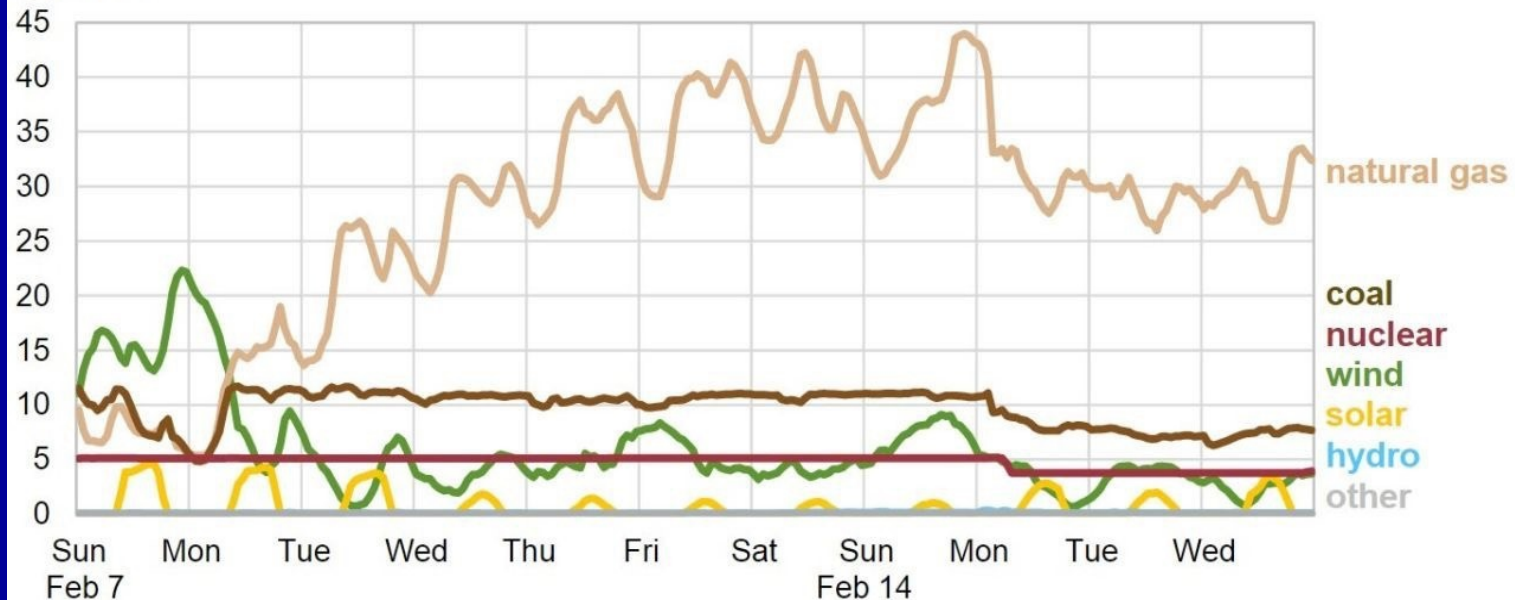
What happened in ERCOT?

Hourly net generation by energy source (Feb 7–Feb 17, 2021)

Electric Reliability Council of Texas, Inc (ERCOT)

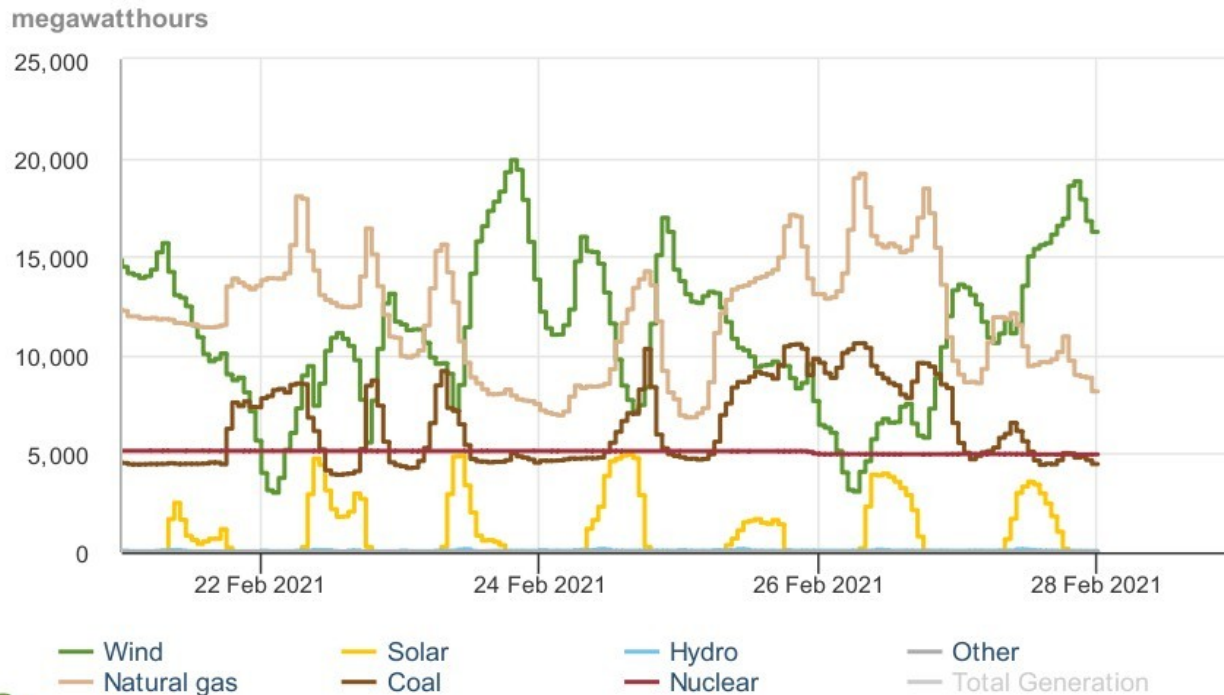


gigawatts



A week later

Texas (TEX) region electricity generation by energy source 2/21/2021 – 2/28/2021, Central Time



Source: U.S. Energy Information Administration

2011 and 2021

- 2011 analysis—just change the date
- Estimated cost of preparation: \$600 million
- Losses
 - 154 to 700-plus deaths
 - \$50 billion in the ERCOT physical market
 - \$90 to \$200 billion in property losses

Future costs to Texas?

- National security vulnerability
- Competitive disadvantage

Electricity markets

Regulatory policies were designed to prevent the exercise of monopoly pricing by vertically integrated electric utilities

Electricity began “Deregulation” late 1970s

Generation, Transmission and Distribution were unbundled—creating “markets”

The ERCOT “Market”



The ERCOT “Market”

OPINION // OUTLOOK

Texas suffers from Soviet-style electricity distribution system

Edward A. Hirs III and Paul W. MacAvoy

Feb. 22, 2013 | Updated: Feb. 22, 2013 7:45 p.m.

Is the Electricity Reliability Council of Texas repeating the central planning failures of the late Soviet Union?

The critical analysis

Tjalling Koopmans

Paul MacAvoy & Paul Joskow

John Nash & Martin Shubik

Stephen Ross

ERCOT market characteristics

- For 8 of the past 10 years, for the generators, $P < ATC$
- WSJ: Texans paid \$28 billion more than they would have in old-style regulated electric utility market

ERCOT market characteristics

Electricity Only

ERCOT market characteristics

- Restricted entry
- Restricted information
- Pricing controlled by fiat
- Monopsonist facing generators
- Monopolist facing consumers
- Characterized by price manipulation
- No accountability

The ERCOT “Market”

The ERCOT market is and has been fully regulated—1,876 pages of rules & regs

Why are Texans afraid of complete deregulation?

The Solution

Breakup ERCOT

Partial deregulation NE

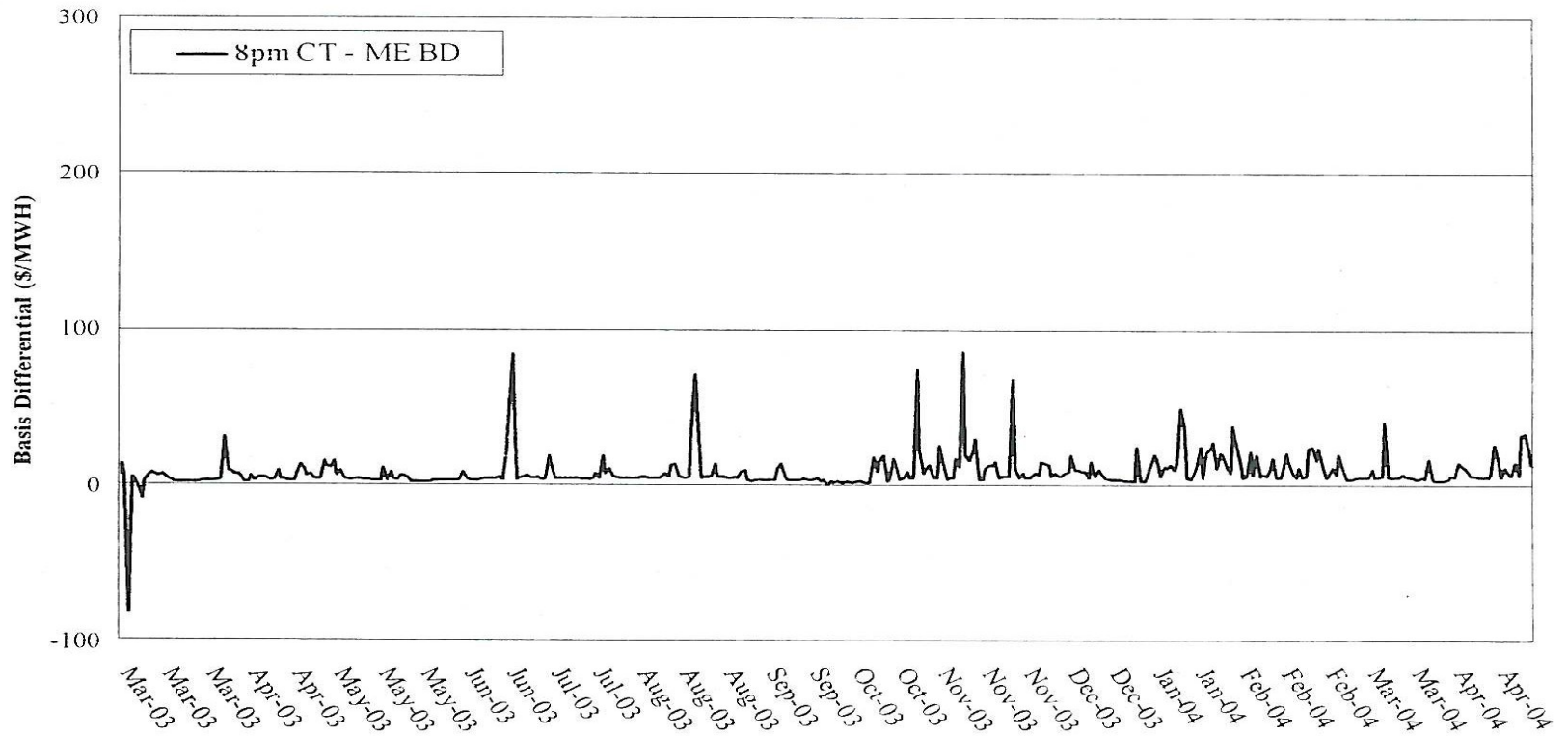


Figure 14. 8:00 p.m. basis differential between Connecticut and Maine (base) (Source: ISO web sites.)

Partial deregulation CAISO

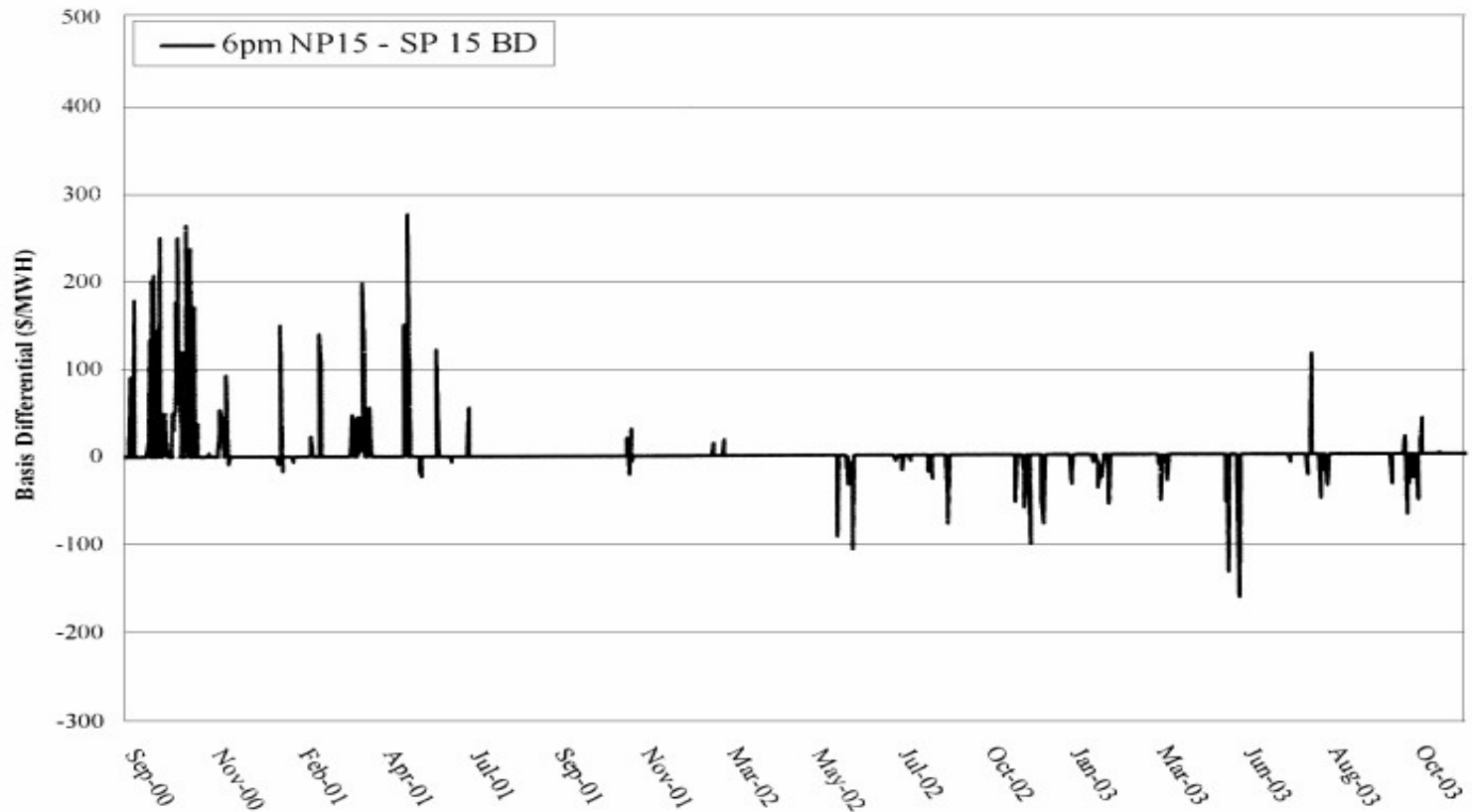


Figure 13. 6:00 p.m. basis differential between CAISO zones NP15 and SP15 (base) (Source: CAISO data available online.)

ERCOT market characteristics

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Resources

<https://edhirs.com/grid-economics>

Paul W. MacAvoy, *The Unsustainable Costs of Partial Deregulation*, Yale University Press, 2007, and at

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1090826

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