



# Texas Winter Outage

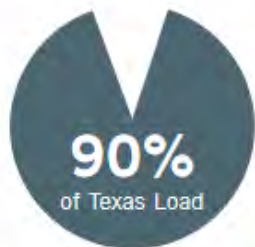


## Quick Facts

The Texas Legislature restructured the Texas electric market in 1999 by unbundling the investor-owned utilities and creating retail customer choice in those areas, and assigned ERCOT four primary responsibilities:

- System reliability – planning and operations
- Wholesale market settlement for electricity production and delivery
- Retail switching process for customer choice
- Open access to transmission

## ERCOT Region



75% of load is competitive-choice customers — nearly 8 million electric-service IDs (premises)

650+  
generating units,  
excluding PUNs

1,800+

active market participants that generate, move, buy, sell or use wholesale electricity.

More than 25 million consumers in the ERCOT region

78,000+

megawatts (MW) of capacity for peak demand as of December 2018

Transmission projects energized in 2019 total \$1.3 billion

46,500+

circuit miles of high-voltage transmission

74,820 MW

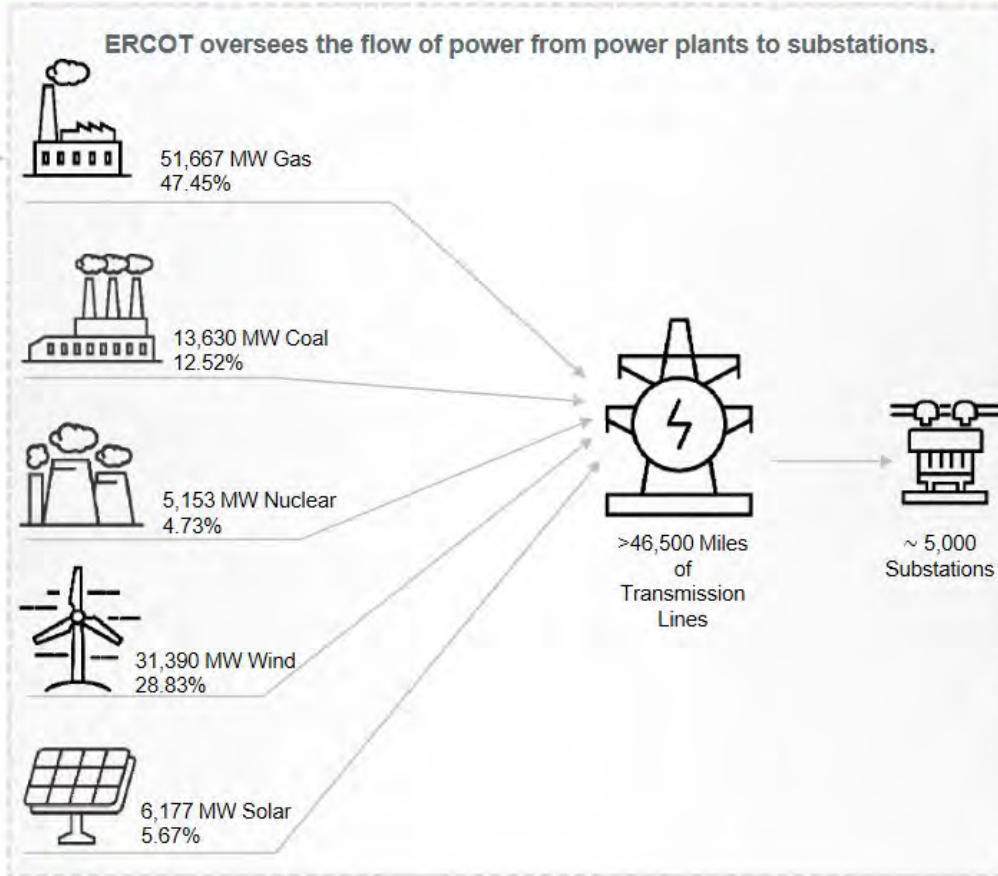
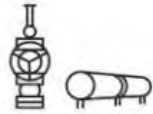
Record peak demand (August 12, 2019)

71,930 MW

Weekend peak demand record (August 11, 2019)

1 MW of electricity can power about 200 Texas homes during periods of peak demand.

# Electric Generation, Transmission & Distribution Overview



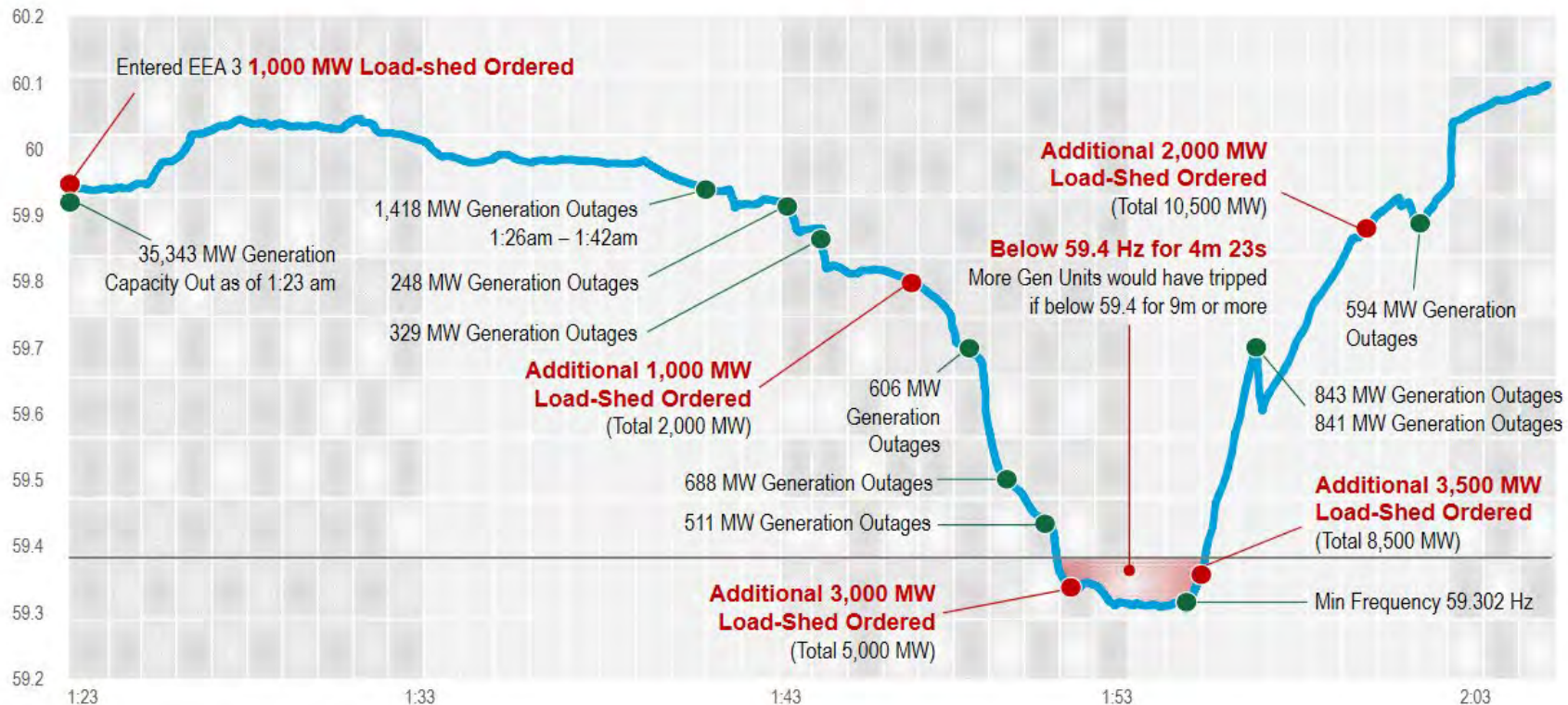
MW represent installed capacity

# Available Generation and Estimated Load Without Load Shed

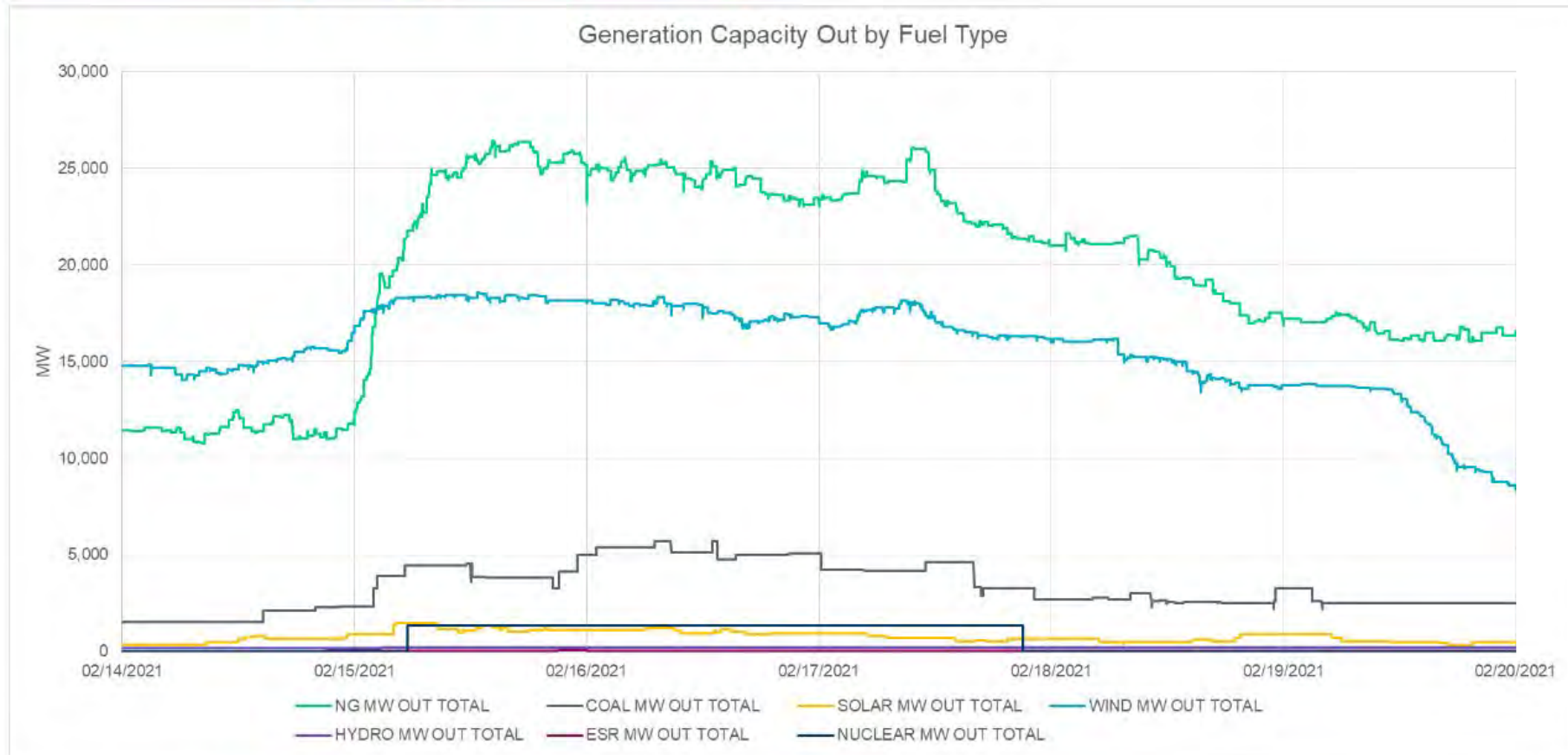


Available Generation shown is the total HSL of Online Resources, including Quick Starts in OFFQS. The total uses the current MW for Resources in Start-up, Shut-Down, and ONTEST.

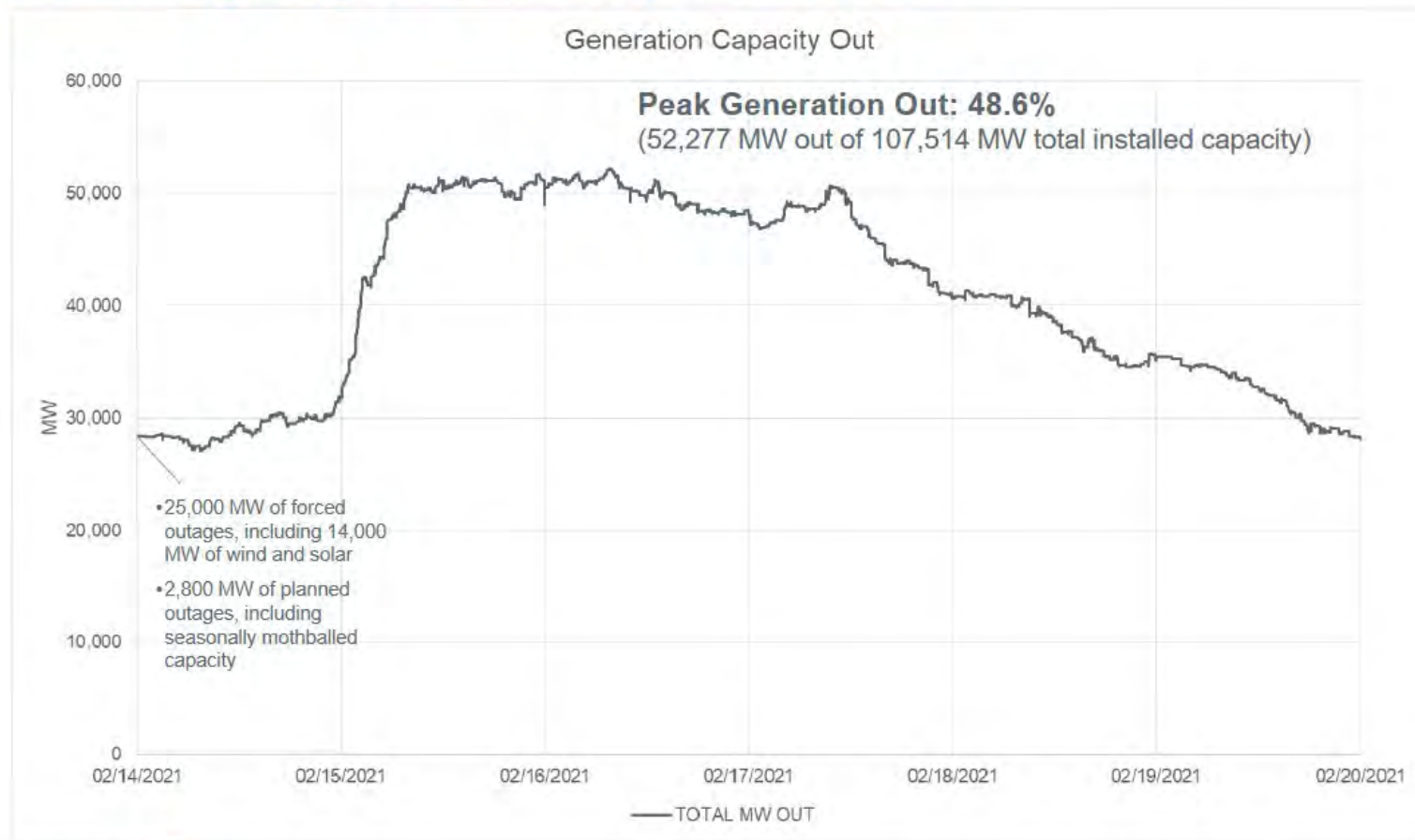
# Rapid Decrease in Generation Causes Frequency Drop



# Generation Capacity Out by Fuel Type

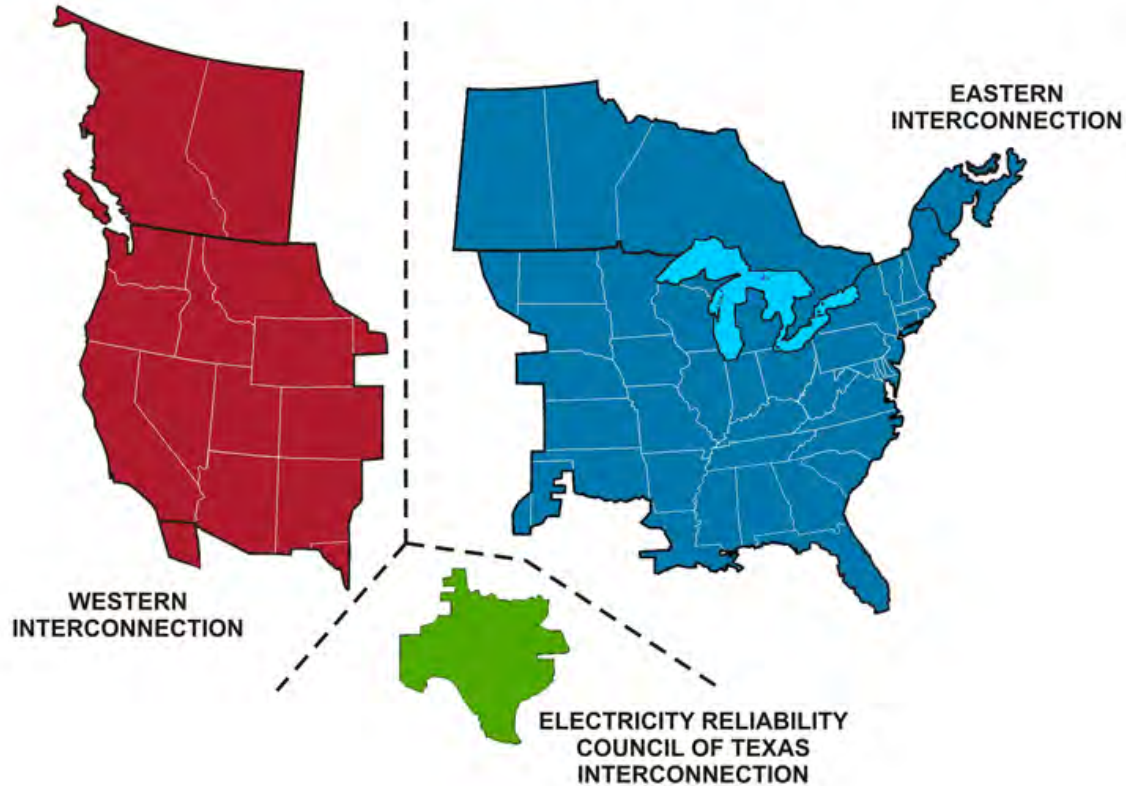


# Generation Capacity Out February 14 – 19, 2021



# Isolation

## North American Electric Reliability Corporation Interconnections







43 San Diego Gas & Electric Company	52 Tulelake Irrigation District
44 Interoceanic Columbia Hydro and Power Authority	53 Western Virginia Electric
45 Futility	54 Sacramento Electric Light & Power
46 NorthWestern Electric	55 Lone Cay Electric Corporation
47 Idaho Power Company	56 City of Salem
48 Western Area Power Administration - Lower Great Plains Region	57 Utah Municipal Power Agency
49 Western Area Power Administration - Rocky Mountain Region	58 ATCO Electric Ltd.
50 Southern California Edison Company	59 City and County of San Francisco - West Electric Works and Power
51 Western Area Power Administration - Desert Southwest Region	60 Utah Metals Ltd.
61 Arizona Public Service Company	61 Greater Wichita Cooperative Inc.
62 Snake River Project	62 Western Interstate Transmission Project

Note: Not all substations are geographically accurate. To improve readability of map, not all transmission lines are annotated with line operators.

4. SAN FRANCISCO AREA DETAIL

5. PORTLAND AREA DETAIL



6. LOS ANGELES AREA DETAIL

7. LAS VEGAS AREA DETAIL

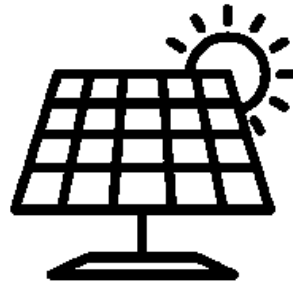


9. DENVER AREA DETAIL

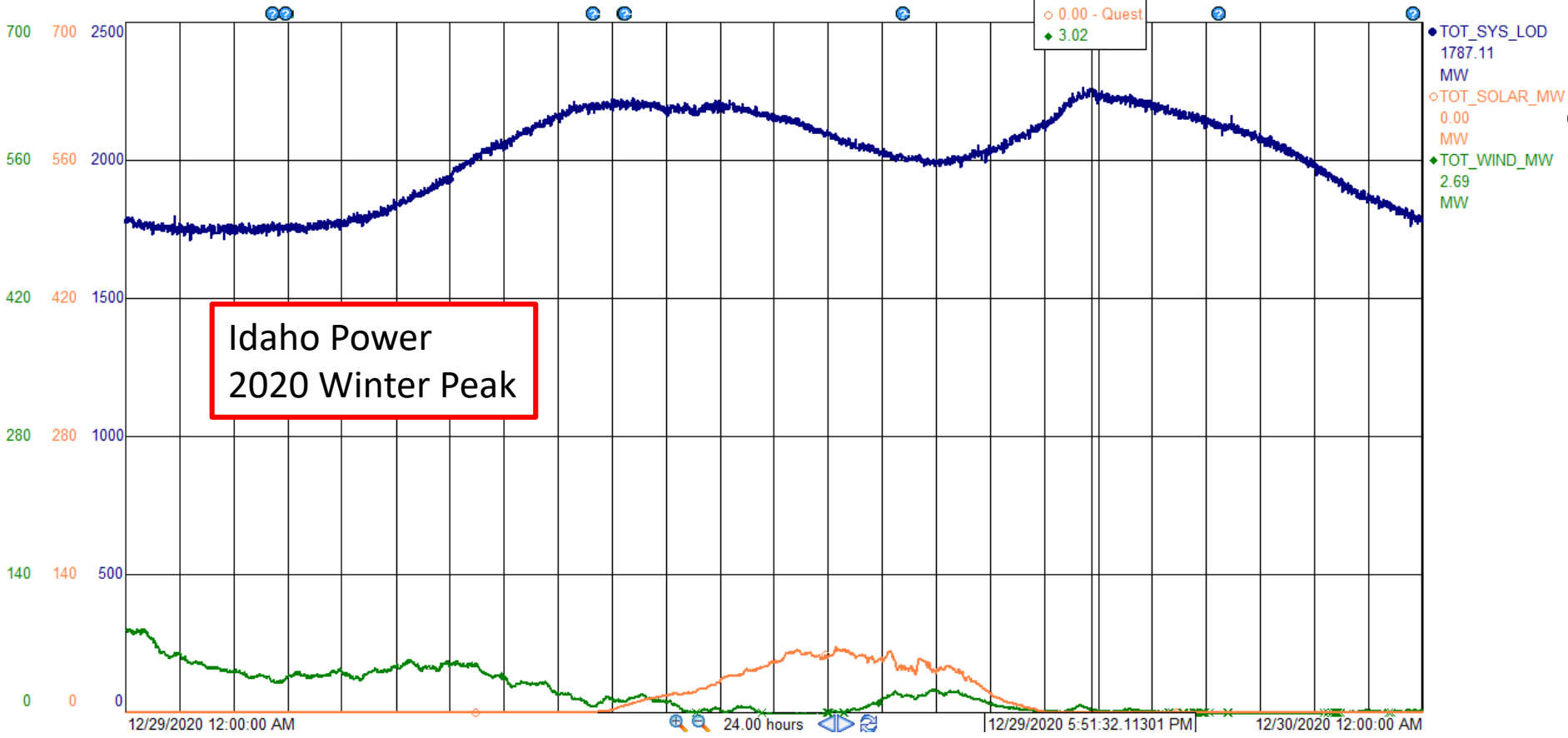


MEXICO

# Idaho Power's Resources



Plot-0

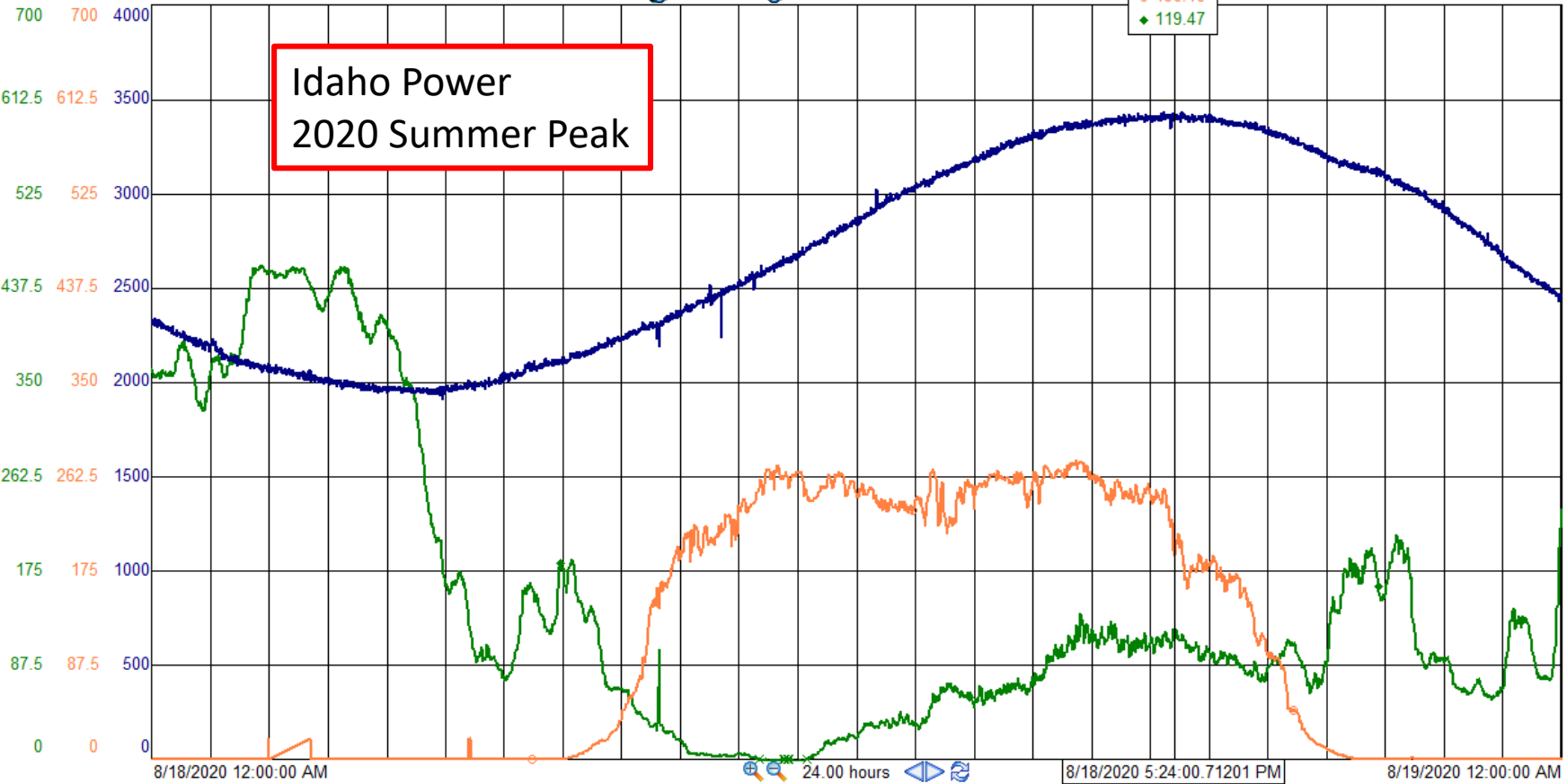


Plot-0

Idaho Power  
2020 Summer Peak

● 3428.31  
○ 196.16  
◆ 119.47

● TOT\_SYS\_LOD  
2461.06  
MW  
○ TOT\_SOLAR\_MW  
0.00  
MW  
◆ TOT\_WIND\_MW  
232.24  
MW



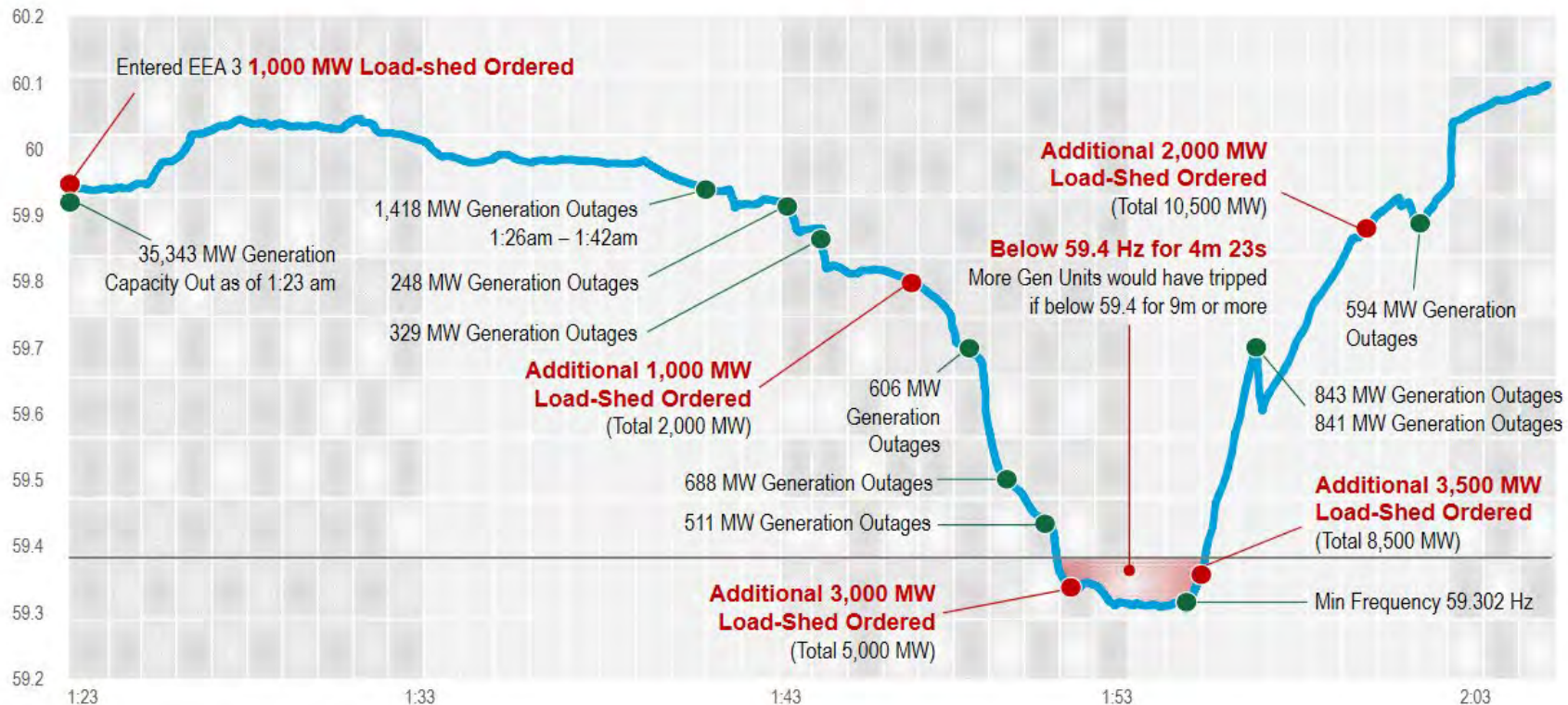
8/18/2020 12:00:00 AM

24.00 hours

8/18/2020 5:24:00.71201 PM

8/19/2020 12:00:00 AM

# Rapid Decrease in Generation Causes Frequency Drop





# Idaho Power

## Emergency Preparation

- Energy Emergency Alerts (EEA1, EEA2, EEA3)
- WECC under frequency protections
- Rotating outage preparation

# Market Design & Deregulation



- Texas energy market design
  - Who are the winners?
  - Who are the losers?
- Who oversees grid reliability?

# Clean and Reliable



WE KEEP THE LIGHTS ON

**99.96%**

OF THE TIME



# Clean and Affordable

OUR PRICES ARE MORE THAN  
**20% BELOW**  
THE NATIONAL AVERAGE



Clean today. **Cleaner tomorrow.**<sup>®</sup>



We are continuing our path  
away from coal.



The proposed Boardman to  
Hemingway transmission line  
should help move clean energy.



We're investing in solar power.