



*Committee on Energy Resources & the Environment*

# Can You Call on Your Capacity in a Crisis?

This session will begin at 1:45PM

# WELCOME

**Hon. Charlotte A. Mitchell**

Chair

North Carolina Utilities Commission



# PANELISTS

**Tim Burdis**

Senior Manager  
State Policy Solutions  
PJM

**Gabe Murtaugh**

Storage Sector Manager  
CAISO

**Libby Kirby**

Transmission Operations Electrical  
Engineer  
Bonneville Power Administration

**Lynn Hecker**

Senior Manager – Resource Adequacy  
Policy  
MISO





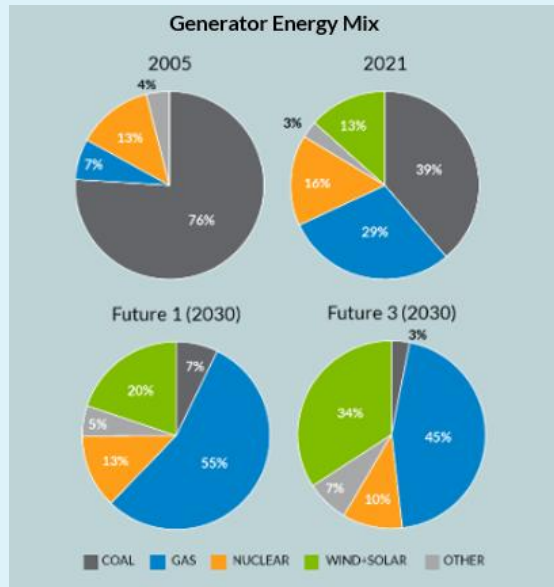
# MISO Non-thermal Resource Accreditation Overview

**2022 NARUC Summer Policy Summit**

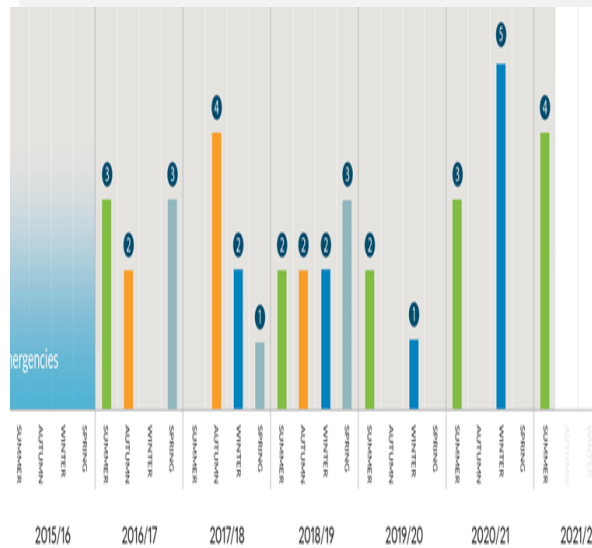
July 19, 2022

# Changing resource portfolio with rapid growth of intermittent resources drives continued risk profile shifts and an increased need for resource accreditation reforms to address reliability imperative

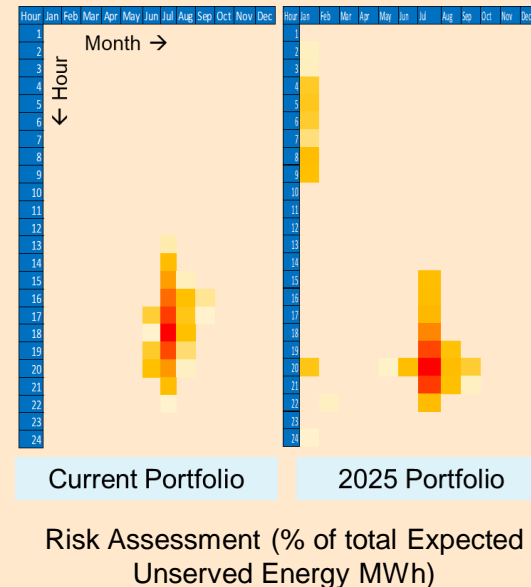
Resource Portfolio continues to evolve with increasing growth of renewables



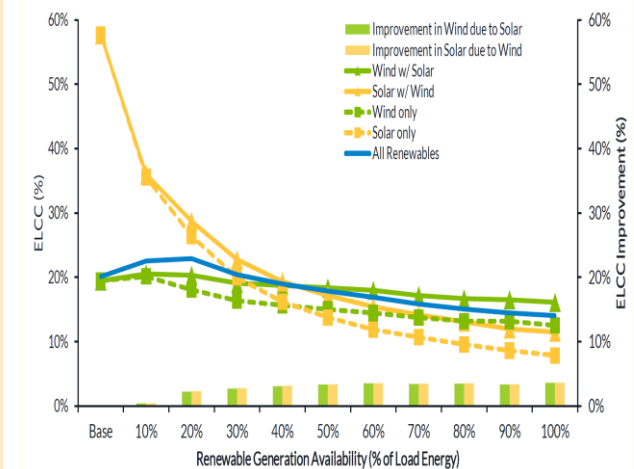
Historical Emergency Declarations increase across the year



Future portfolio indicates continued shift of reliability risks across the year



Renewable reliability contributions vary by penetration and portfolio mix



Change in resource capacity calculation with technology diversity and penetration

# MISO is pursuing continued accreditation enhancements for non-thermal resources

Resource Type	Current Annual Accreditation	Seasonal Accreditation proposed in MISO's 2021 RA reform filing	Further Enhancements currently underway
Wind	Annual ELCC and then allocate to individual wind resources based on performance over 8 peak summer days per year	Seasonal ELCC and then allocate to individual wind resources based on performance over 8 peak days per season	Evaluate availability-based accreditation approaches, including probabilistic, deterministic, and blended
Solar	Three-year, historical availability-based hours 15,16,17 EST from June to August	Three-year, historical availability-based hours 15,16,17 EST for spring, summer and fall. Hours 8, 9, 19, 20 EST for winter	
Demand Response	Lead time $> 6 \leq 12$ hour credited 50% until 2023 Annual calls $\geq 5 < 10$ credited 80% and calls $\geq 10$ credited 100%	Summer/ Winter: Lead time $\leq 6$ hours and calls $\geq 5$ credited 100% Spring/ Fall: Lead time $\leq 6$ hours and calls $\geq 3$ credited 100%	Evaluate notification time and availability during times of need
Storage	Accredited based on outage rates	Seasonal outage rates	Evaluate availability during times of need



## Contact Information

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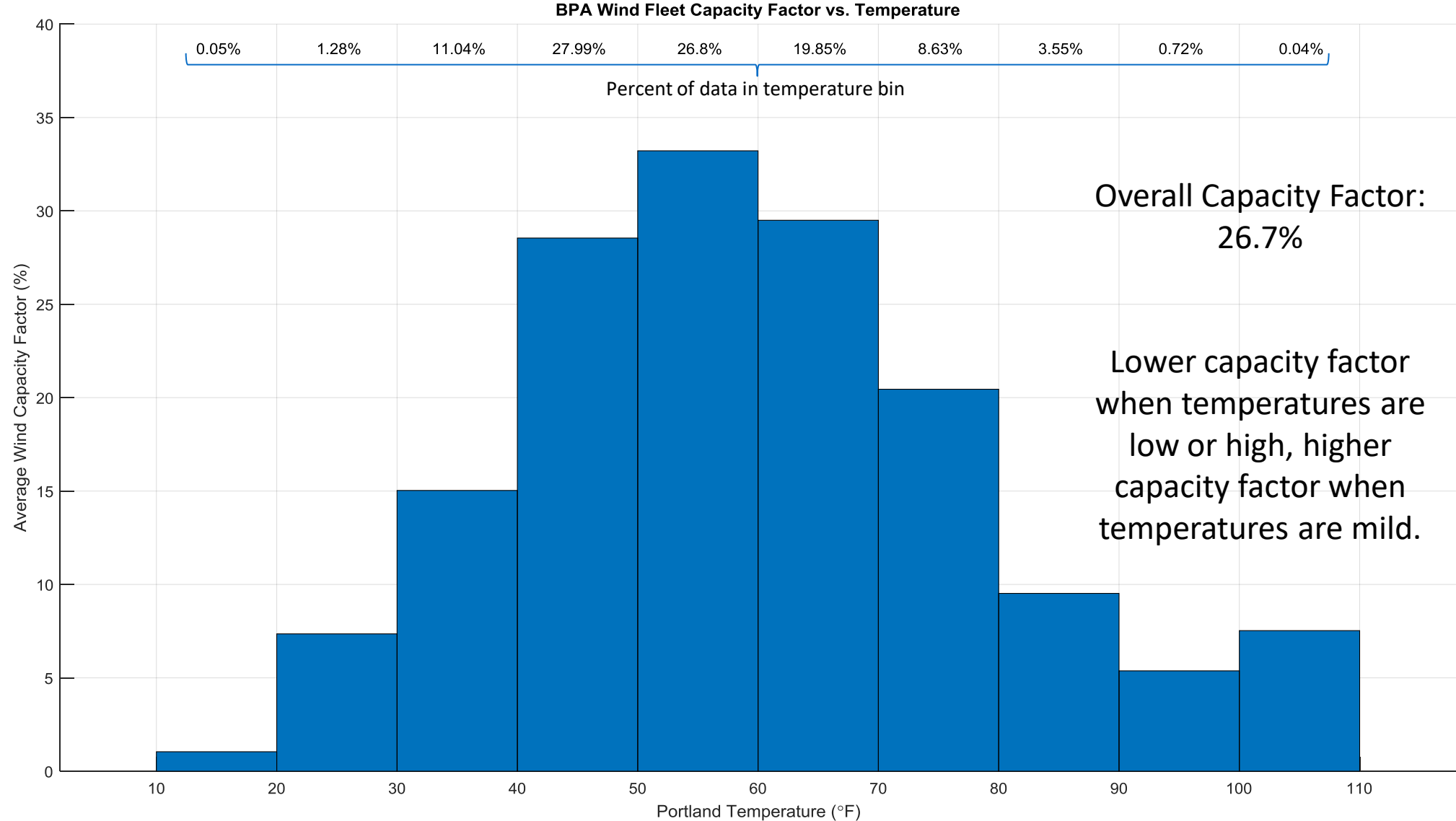


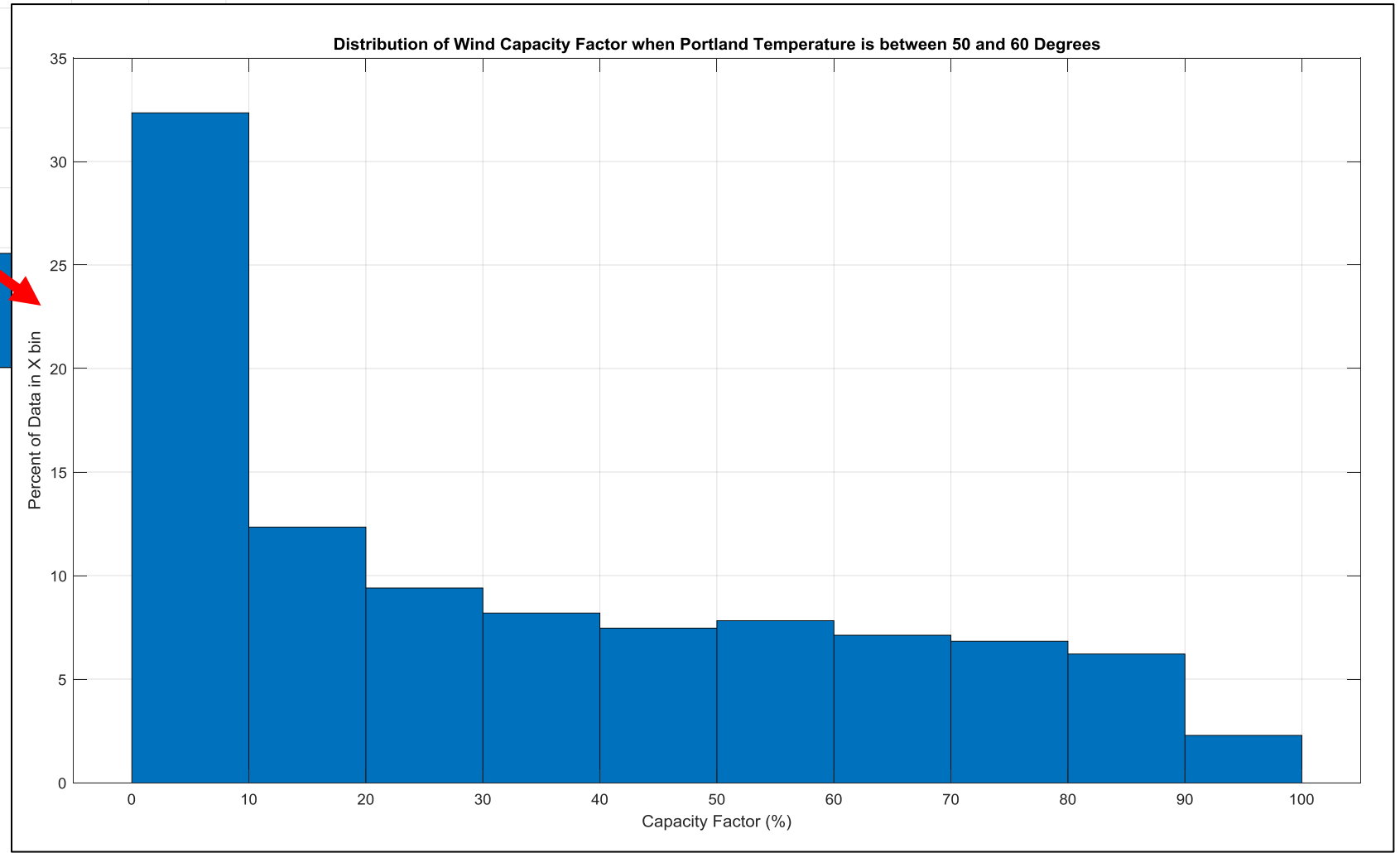
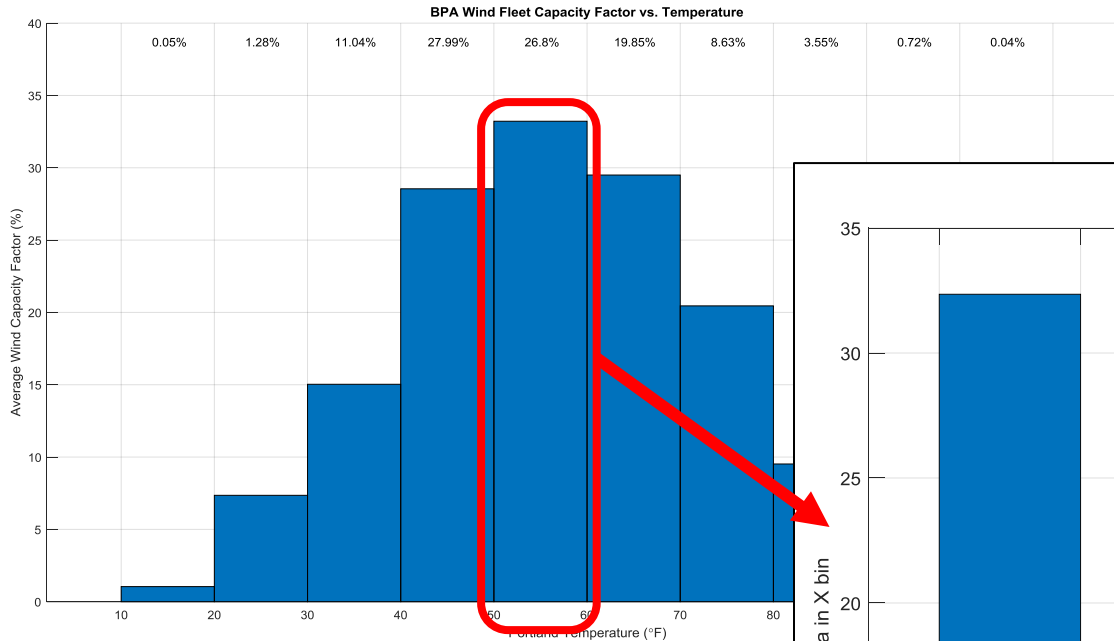
# NARUC Capacity Slides

Libby Kirby

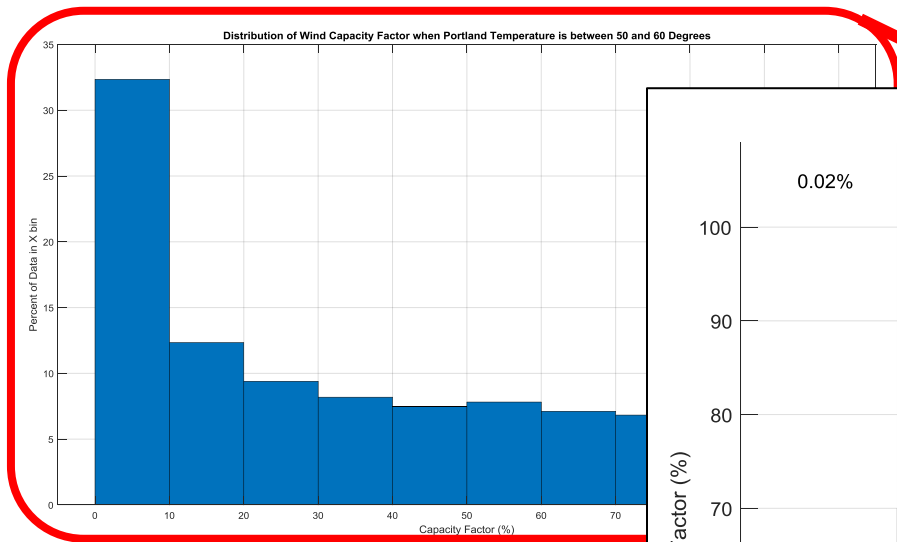




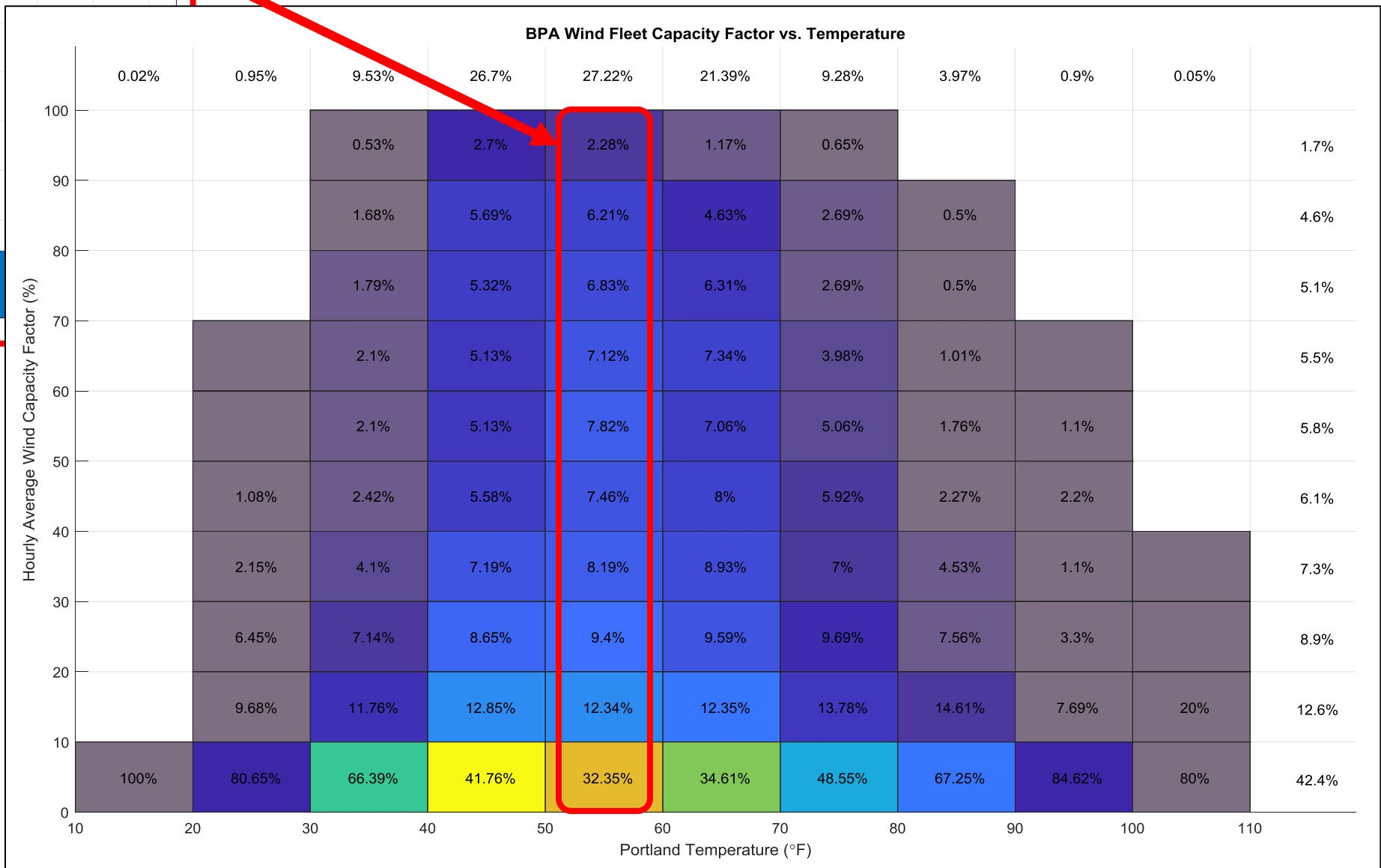




While the average capacity factor is 33% when the temperature is between 50 and 60 degrees, there is still significant variation on hourly output



We can see similar variation in temperature bins with higher average capacity factors





# Developing Storage and Strategic Vision for a Carbon Neutral Grid

July 19, 2022

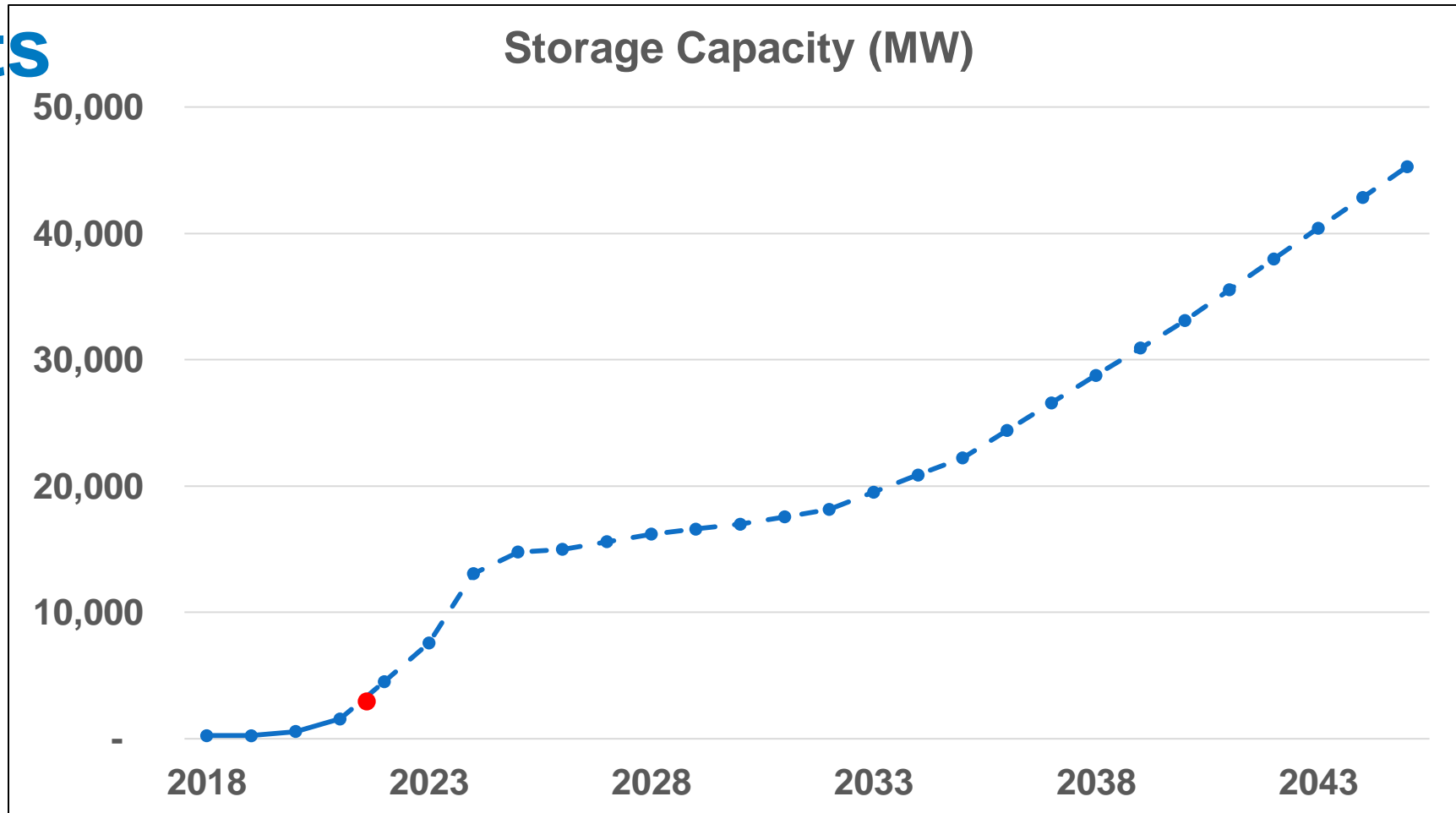
NARUC Summer Policy Summit  
Gabe Murtaugh, Storage Sector Manager



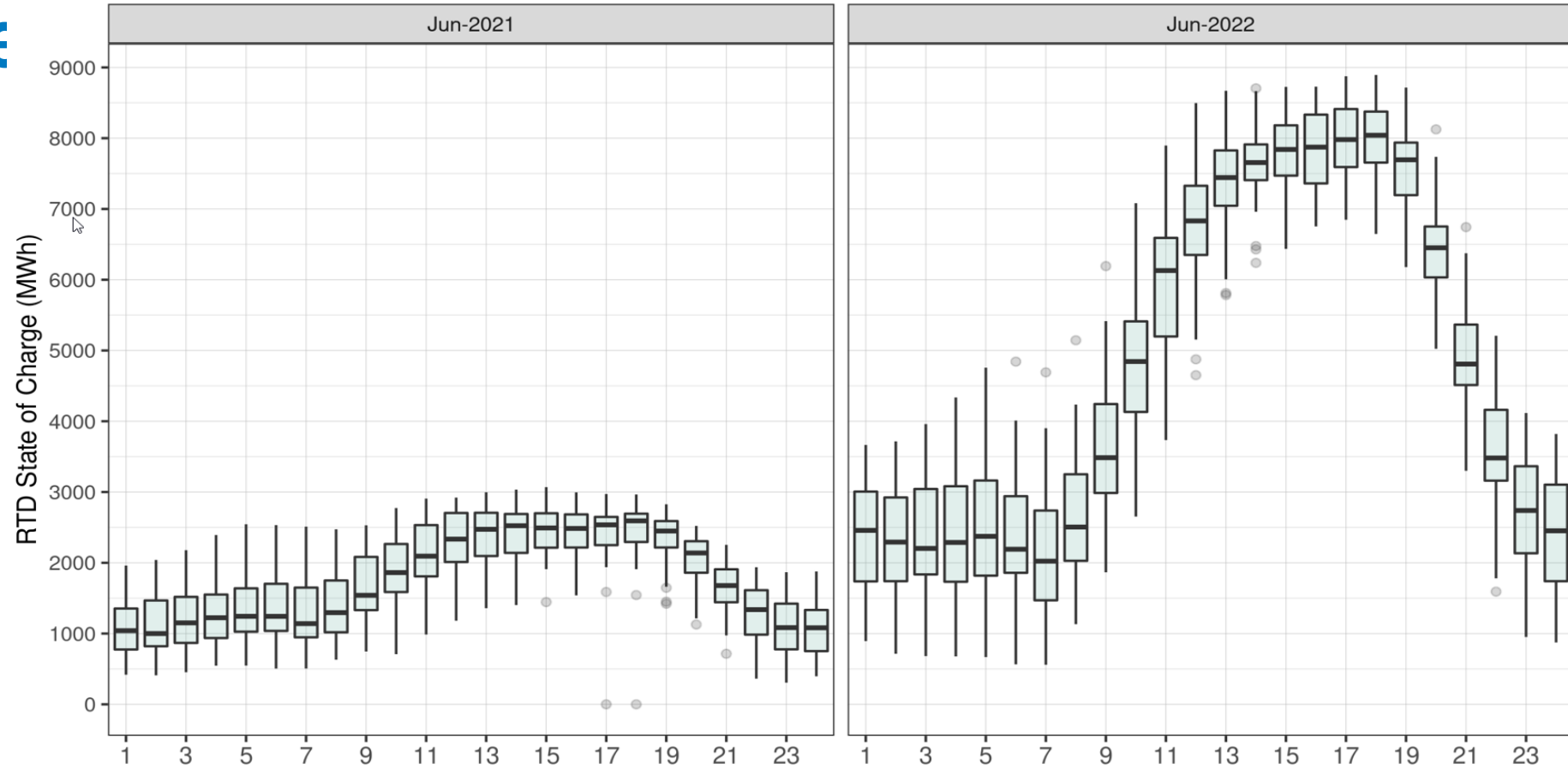
# Developers are building large amounts of new energy storage on the CAISO grid

- California has a goal to generate electricity in a 100% greenhouse gas free manner by 2045
  - Energy will come from renewables
  - Storage is required to save energy for consumption when generation is less than loads
- Storage is rapidly growing, because of state procurement mandates
- CAISO currently has 3,500 MW of installed storage
  - Most new storage is lithium-ion and most is 4-hour duration

# The CAISO expects a massive buildout of storage to meet California's 2045 GHG reduction targets



# Storage primarily provides 'energy shifting' services, and overall actual performance is incre



# COMMENTS OR QUESTIONS

Gabe Murtaugh

Storage Sector Manager, California ISO

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Thanks for attending.  
We look forward to seeing you here at  
3:15 PM for the next ERE session.