



# BALANCING THE CLEAN GRID: RELIABILITY AND RENEWABLE ENERGY

NARUC CENTER FOR PARTNERSHIPS &  
INNOVATION WEBINAR SERIES

JUNE 17, 2021

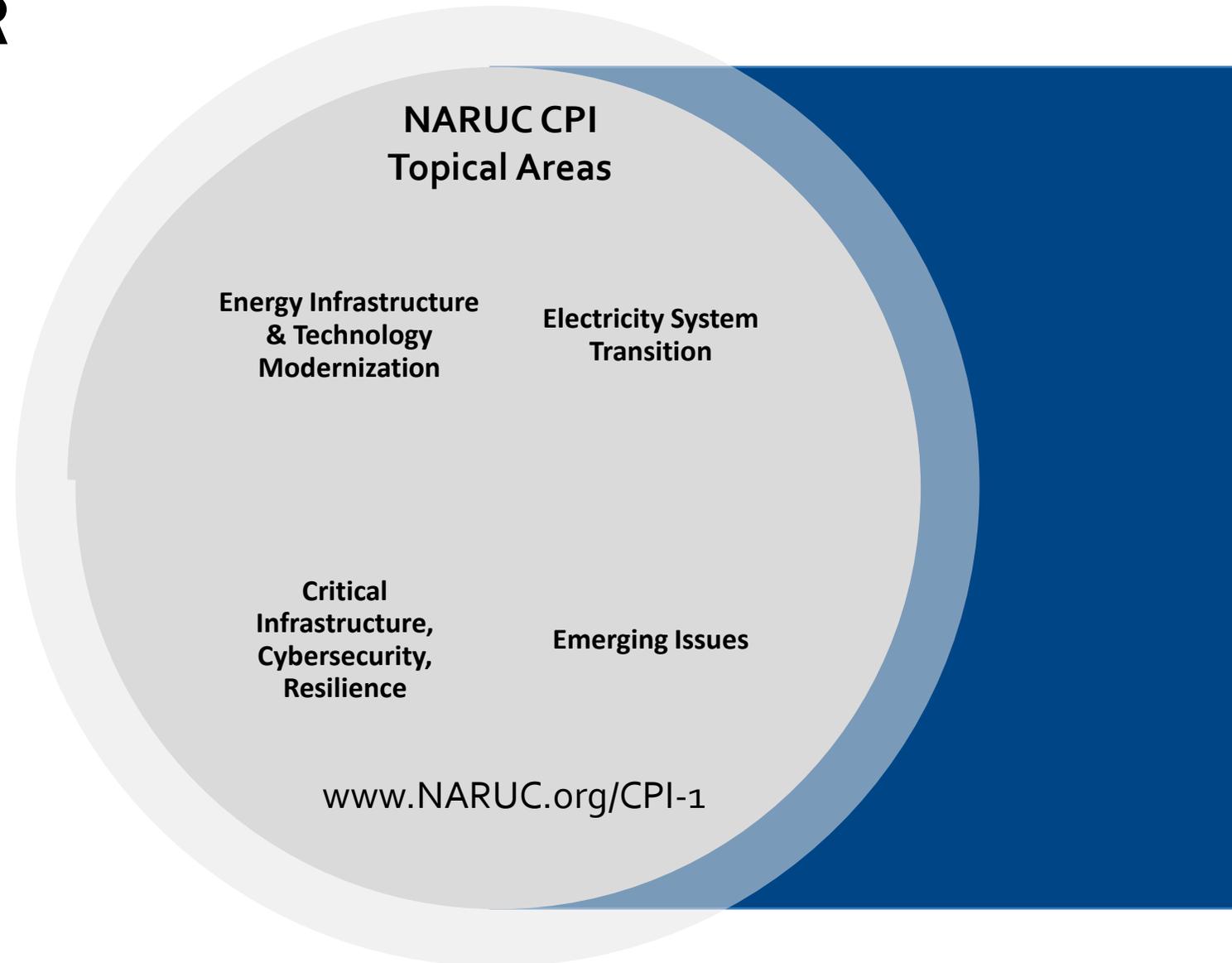
# WHAT IS NARUC

- The National Association of Regulatory Utility Commissioners (NARUC) is a non-profit organization founded in 1889.
- Our Members are the state regulatory Commissioners in all 50 states & the territories. FERC & FCC Commissioners are also members. NARUC has Associate Members in over 20 other countries.
- NARUC member agencies regulate electricity, natural gas, telecommunications, and water utilities.



# WHAT IS NARUC'S CENTER FOR PARTNERSHIPS AND INNOVATION?

- Grant-funded team dedicated to providing technical assistance to members.
- CPI identifies emerging challenges and connects state commissions with expertise and strategies.
- CPI builds relationships, develops resources, and delivers trainings.





# MODERATOR

COMMISSIONER KIM O'GUINN, ARKANSAS PUBLIC  
SERVICE COMMISSION

# PANELISTS

MARK AHLSTROM, VP, RENEWABLE ENERGY POLICY, NEXTERA  
ENERGY RESOURCES & NEXTERA ANALYTICS, INC. AND  
PRESIDENT, ENERGY SYSTEMS INTEGRATION GROUP

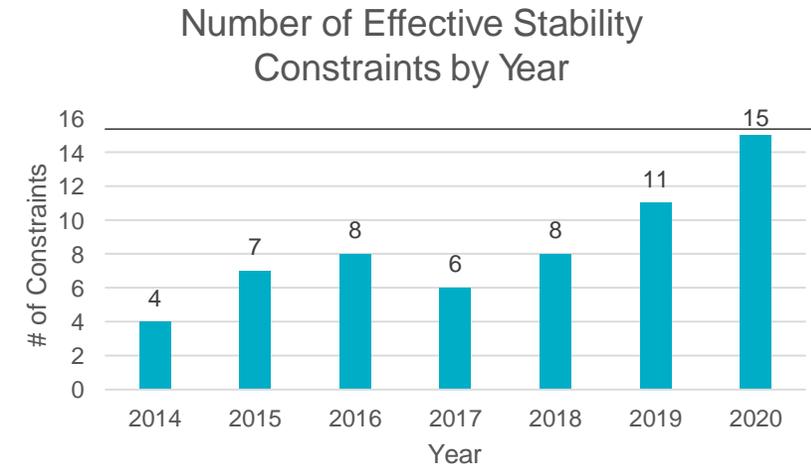
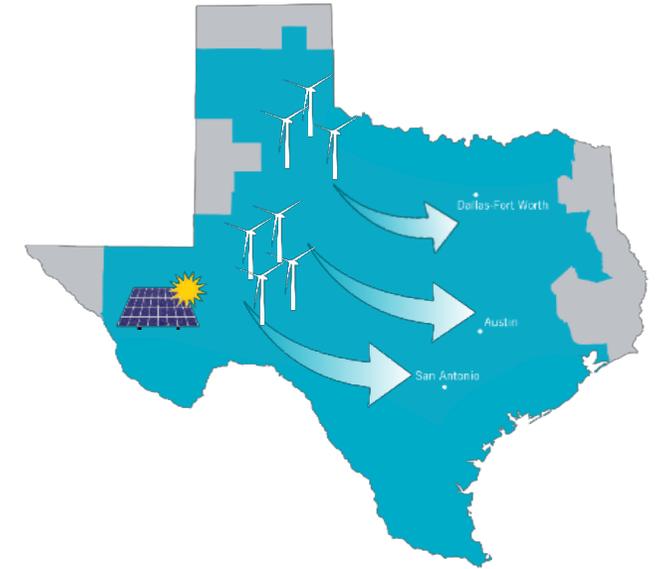
JULIA MATEVOSYAN, LEAD PLANNING ENGINEER, RESOURCE  
ADEQUACY, ELECTRIC RELIABILITY COUNCIL OF TEXAS

DRAKE BARTLETT, SENIOR MARKET OPERATIONS ANALYST,  
XCEL ENERGY

SHEILA TANDON MANZ, PHD, DIRECTOR, DECARBONIZATION  
PLANNING, GE ENERGY CONSULTING

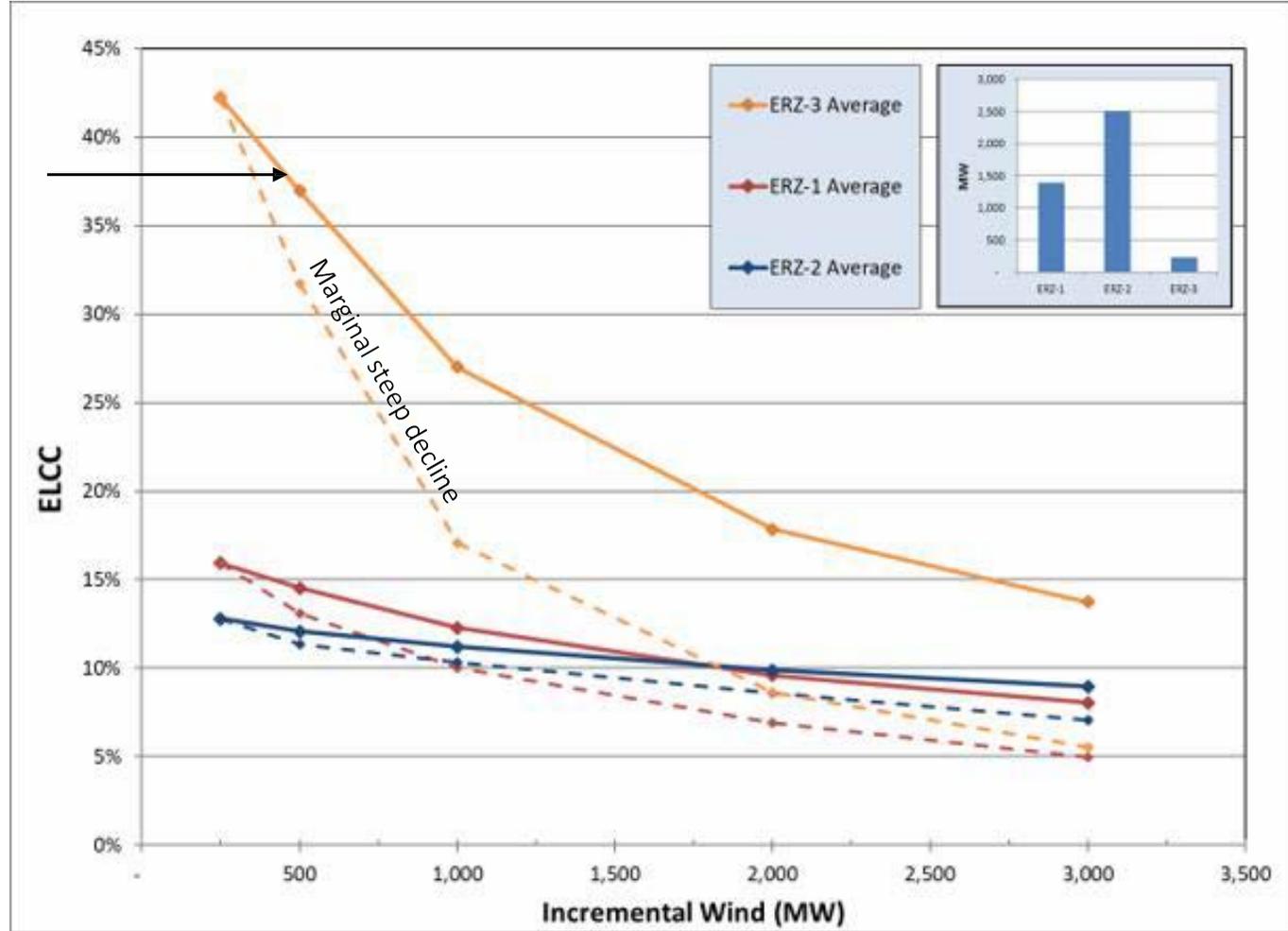
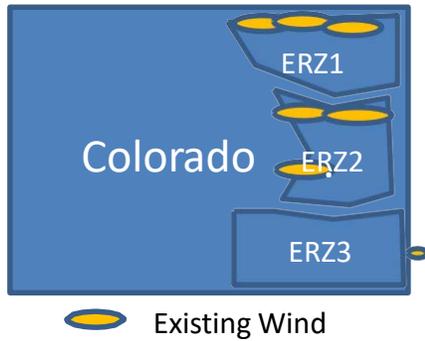
# Challenges Integrating Wind, Solar and Storage

- New products and services to address changing system needs.
- Services can be delivered by IBRs
- Harmonized policies and standards are preferable.
- Economic incentives are needed



# Incremental Wind

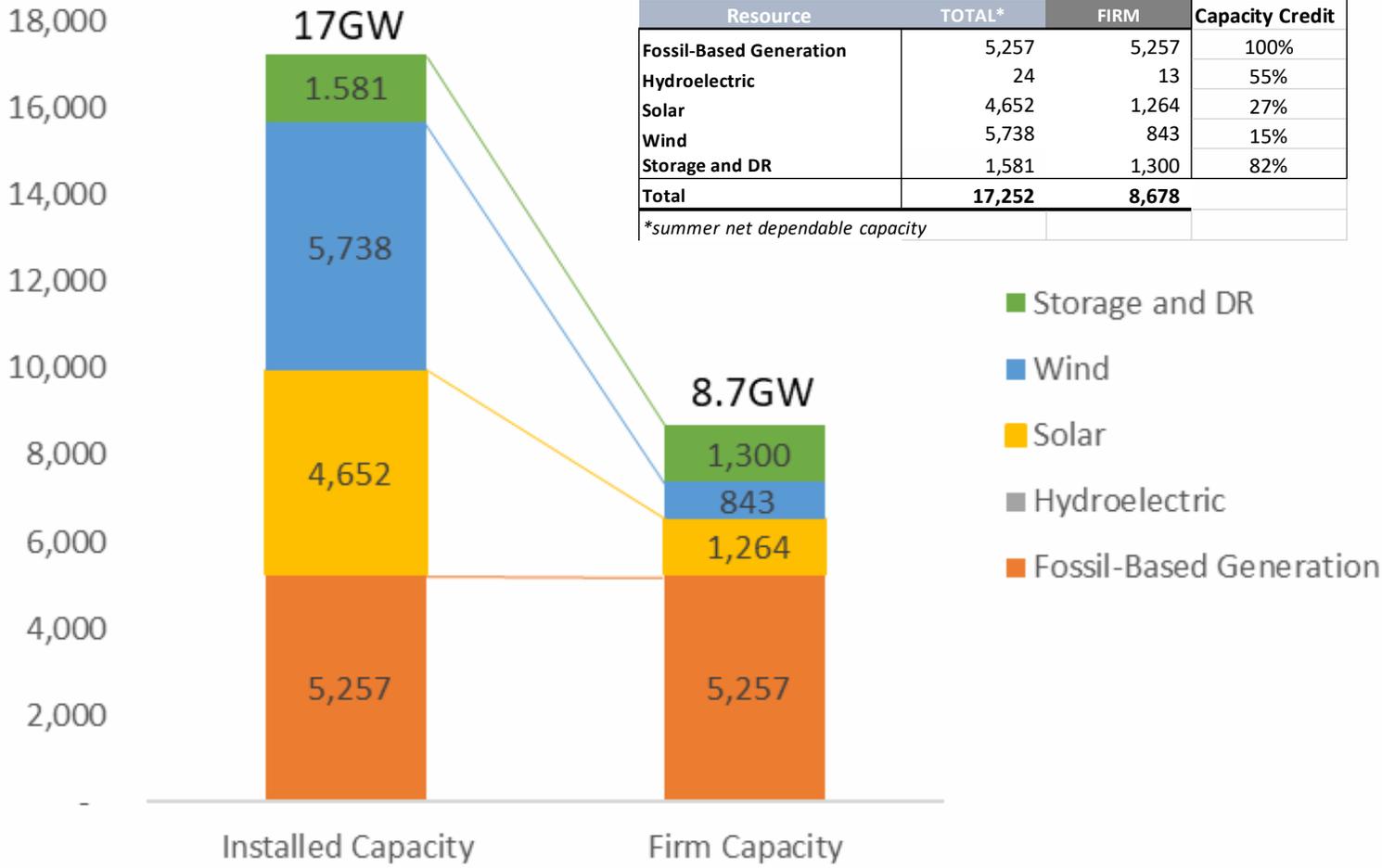
ERZ3 – Diverse! Unique! HIGH



More Wind = Declining ELCC →

# Firm Capacity

PSCo 2030 Preferred Plan

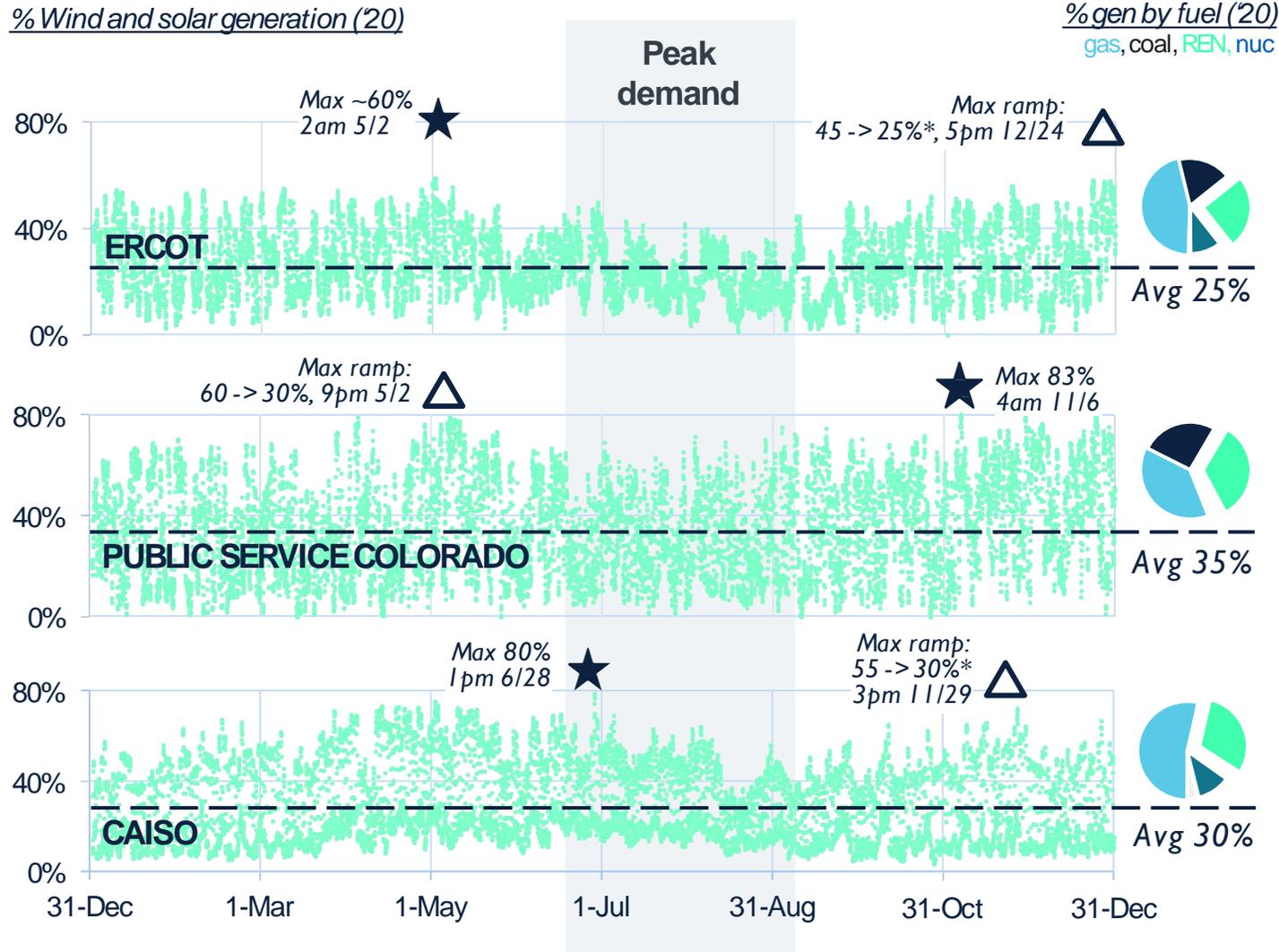


# GE Energy Consulting seeing need for holistic planning w/ high renewables

## Regulators can facilitate the barriers to change



% Wind and solar generation ('20)



\*7GW/h ERCOT, 6GW/hr CAISO

### New "peaks" to plan around

**Renewable peaks** ..w/wind or sun

**Ramping peaks** ..w/changes in wind and sun

**Uncertainty and coincidence** ..weather, outages, demand

### Plan physics + operations holistically

**Current practices often siloed** ..who leads change?

**Synch units avail** to support voltage / freq?

**Can inverter-based controls displace** synchronous unit ancillary services reliably?

### Unlock cheapest enablers first

**Use diversity** ..smooth risk w/siting, tech, pooling

**Integrate demand** to use REN over/undersupply

**Mkt products/req'ts** ..pay /ask for new needs



# Q&A

SUBMIT USING THE QUESTIONS PANE IN THE CONTROL  
PANEL

# NARUC Innovation Webinar series



Hosted one Thursday each month from 3:00 p.m. to 4:00 p.m. ET

- **Virtual Power Plants In The 20s: Moving From Theory To Practice**

*August 12, 2021 | 3:00 - 4:00 PM Eastern*

Register at: <https://www.naruc.org/cpi-1/emerging-issues/innovation-webinars/>

*NARUC thanks the U.S. Department of Energy for support for this series.*



# THANK YOU

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