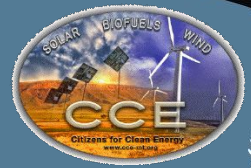




# MOVING FORWARD WITHOUT NUCLEAR

Montana's Path to Clean, Reliable Electricity



**SIERRA CLUB**  
MONTANA CHAPTER



# Spoiler Alert: Idaho NusCale Project Failed

**UTILITY DIVE** Deep Dive Opinion Library Events Press Releases

Generation T&D Grid Reliability Electrification Load Management Renewables Storage

## NuScale, UAMPS terminate small modular reactor project in Idaho

NuScale and the Utah Associated Municipal Power Systems determined that the 462-MW project would likely not reach a sufficient subscription level to continue toward deployment.

Published Nov. 9, 2023

 **REUTERS**<sup>®</sup> World Business Markets Sustainability Legal Breakingviews Technology

Energy | Industry Insight

## Cancelled NuScale contract weighs heavy on new nuclear

By Paul Day

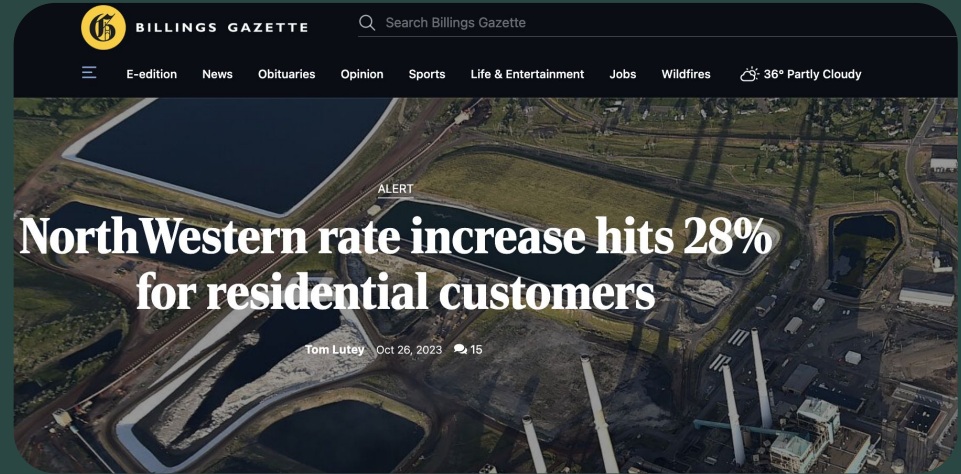
January 10, 2024 10:15 AM MST · Updated 15 days ago



# We Need An Energy System That Is:

- Affordable
- Reliable
- Equitable
- Carbon Free
- Immediate



## Montana Court Reverses on \$283M Gas Power Plant Project Halt

Project is also core to separate lawsuit by 16 plaintiffs, aged five to 22, against Montana for violating state constitution in promoting fossil fuel development

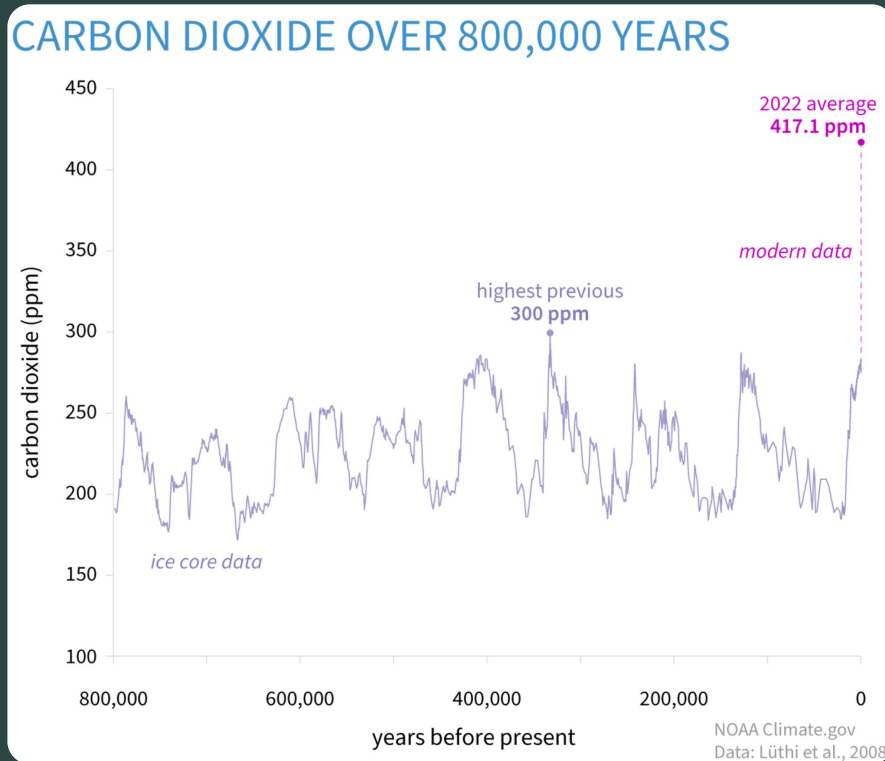


[Mary B. Powers](#)

July 14, 2023 [No Comments](#)

# Urgency of Decarbonizing Energy

- Climate change primarily driven by fossil fuels

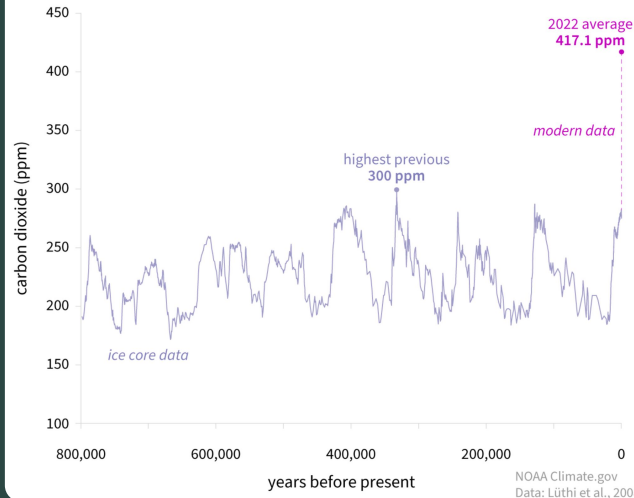


# Urgency of Decarbonizing Energy

- Climate change primarily driven by fossil fuels
- Energy decarbonization technologies readily available
  - Not waiting around for nuclear

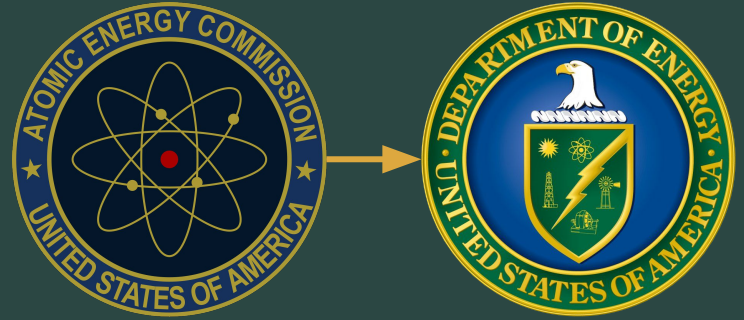


CARBON DIOXIDE OVER 800,000 YEARS



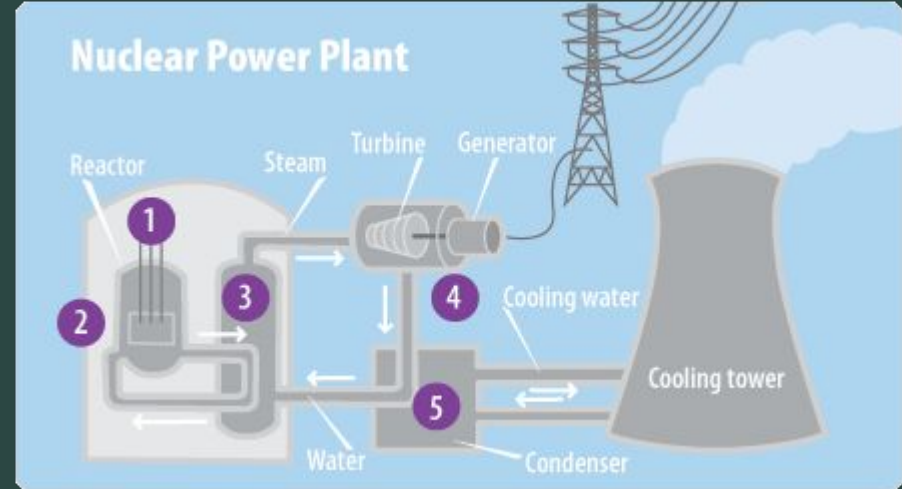
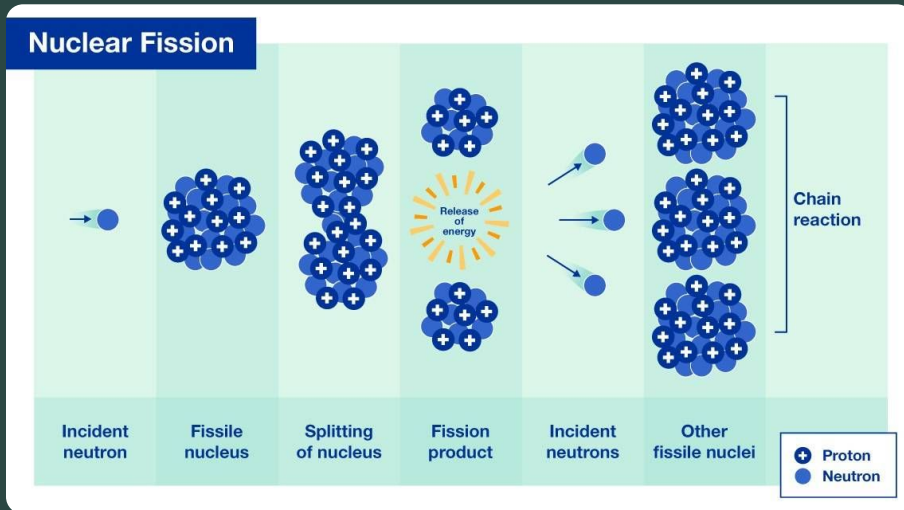
# History of the Nuclear Energy Industry

- Softening image of the nuclear bomb
  - Atomic Energy Commission
  - “Atoms for Peace”
  - Folded into Department of Energy (DOE)
- DOE oversees nuclear energy & warhead arsenal
  - $\sim\frac{2}{3}$  of DOE’s budget
  - Biased towards nuclear



# How Does Nuclear Electricity Generation Work?

- Fission:
  - An expensive way to boil water



# Challenges of Nuclear

- High Risk Investment
  - Ballooning costs
  - Runaway timelines
  - Project failure
- Industry marked by corruption and deceit
- Highly Subsidized
  - DOE and ratepayers - tax dollars and utility bills





# SMRs Another False Prophet Profit

- History of PR Stunts and Failed Rebranding
  - “Atoms for Peace”
  - “Too Cheap to Meter”
- Now SMRs...
  - “Economies of scale”
  - Failed NuScale project in Idaho an indicator of what’s to come



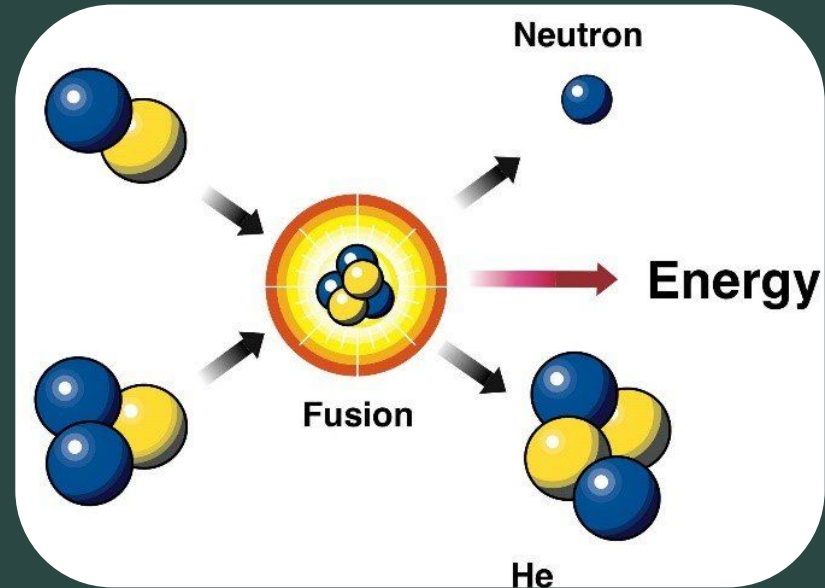
(Rendering of failed NuScale Project)

# Not to Mention Safety and Environmental Concerns...

- Threat to National Security
- No long-term waste repository
- Potential groundwater contamination
- On-site radioactivity after plants close
- Uranium mining
  - New and old damage and injustice



# What About Fusion?



# What About Fusion?

- Challenging to replicate conditions at the Sun's core on Earth's surface
  - First "ignition" in 2022
- Utility-Scale decades away at the soonest
  - Economic viability yet to be seen

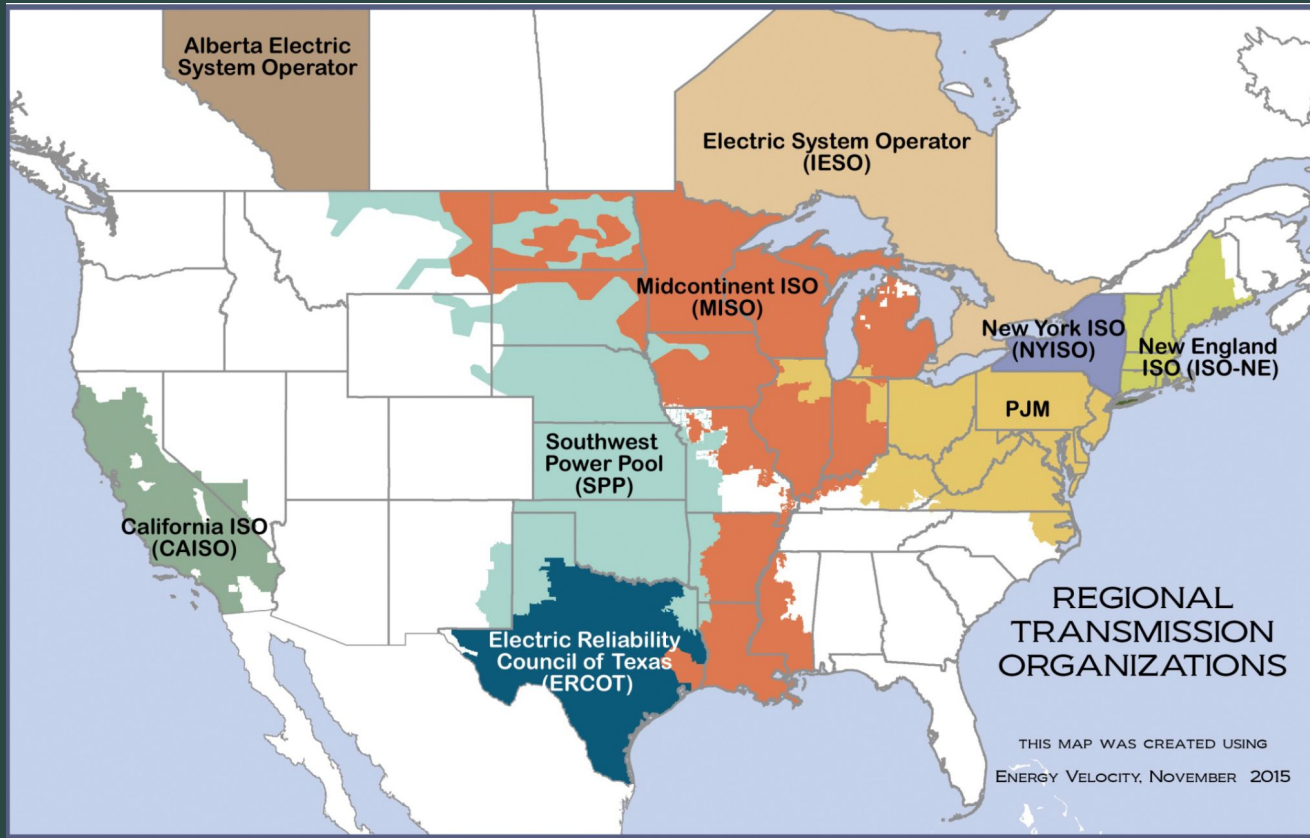


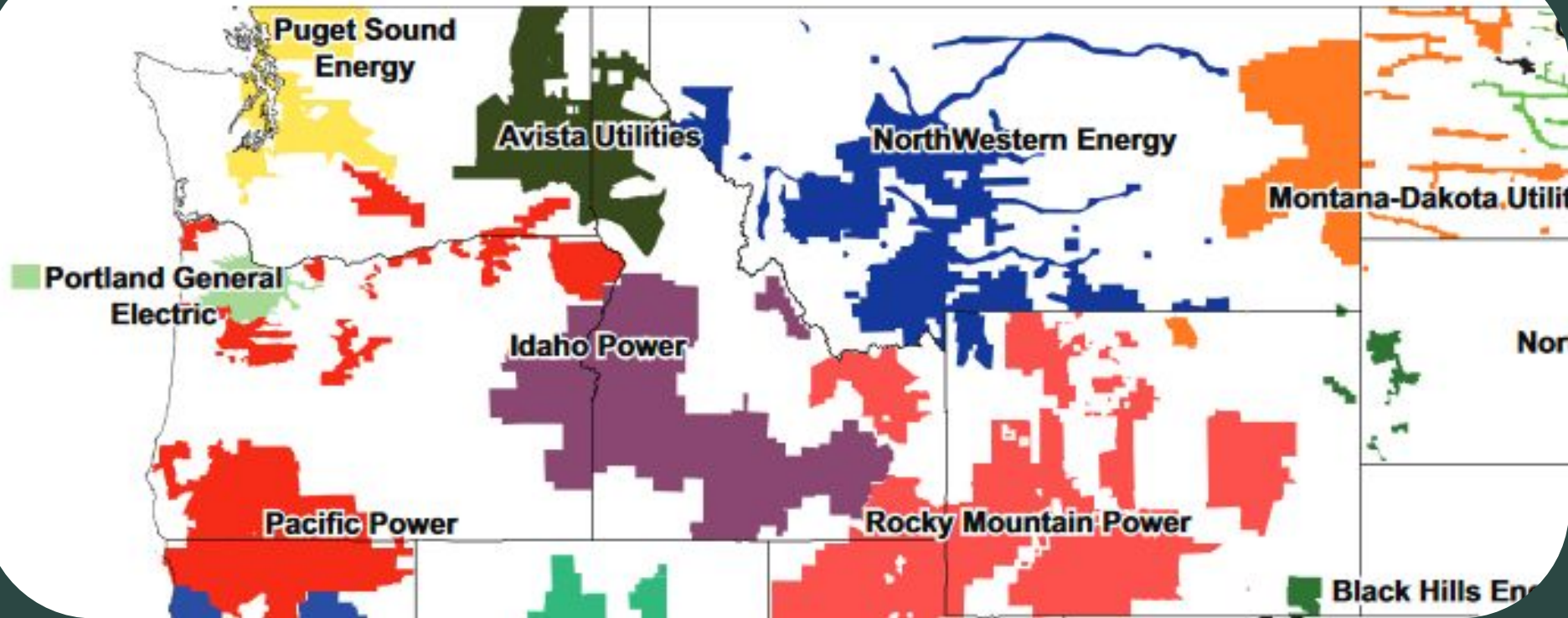
# If Not Nuclear, How to Achieve Reliable, Affordable, Carbon-Free Electricity?

- Nuclear investments divert funding and attention from where it is needed in the energy transition
  - Transmission
  - Renewables & Storage
  - Energy Efficiency & DSM
  - Regional Power Sharing
- Future grid management that is more connected, efficient, and dynamic



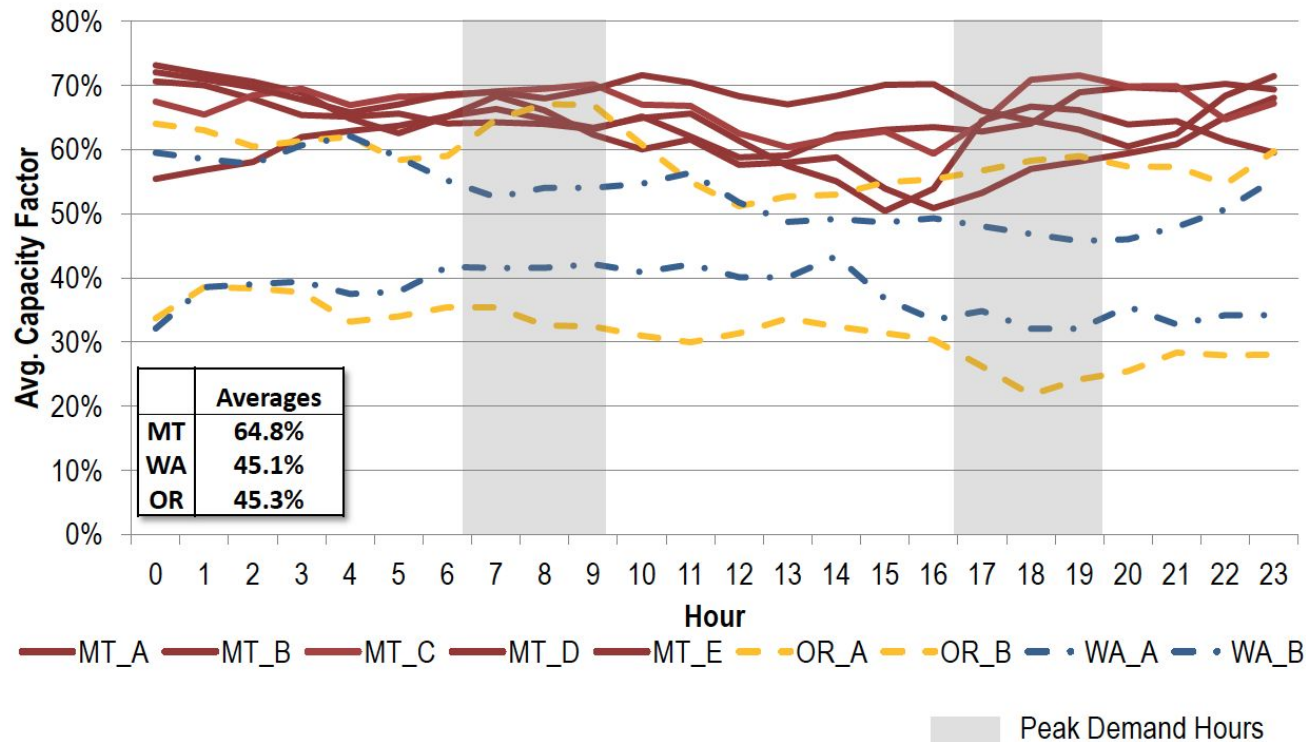
# An Energy System That's Bigger Than the Weather





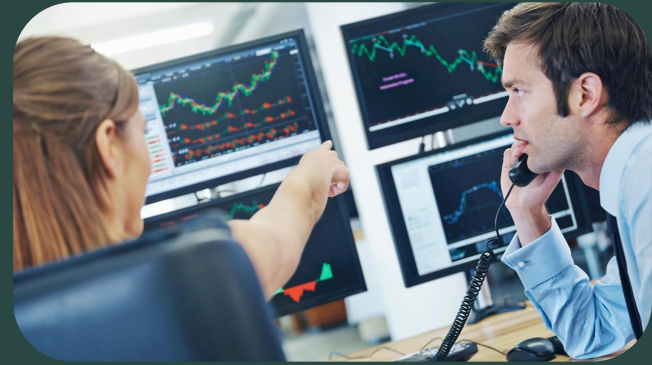
# Montana Wind VS Oregon & Washington Wind

## January 2012 Average Hourly Capacity Factors





# Current System: Bilateral Markets



- Fine when energy and capacity are available
- High demand and/or low supply leads to:
  - High prices
  - Volatility & huge spikes during extreme peaks
  - Gas “peakers” become more prevalent
  - Transmission constraints

# Benefits of the Western Energy Imbalance Market (EIM)



## Participants

- BHE Montana – entry 2026
- Avangrid – entered 2023
- El Paso Electric – entered 2023
- WAPA Desert Southwest Region – entered 2023
- Bonneville Power Administration – entered 2022
- Tucson Electric Power – entered 2022
- Avista – entered 2022
- Tacoma Power – entered 2022
- NorthWestern Energy – entered 2021**
- Los Angeles Department of Water & Power – entered 2021
- Public Service Company of New Mexico – entered 2021
- Turlock Irrigation District – entered 2021
- Salt River Project – entered 2020
- Seattle City Light – entered 2020
- Balancing Authority of Northern California – entered 2019
- Idaho Power Company – entered 2018
- Powerex – entered 2018
- Portland General Electric – entered 2017
- Puget Sound – entered 2016
- Arizona Public Service – entered 2016
- NV Energy – entered 2015
- PacifiCorp – entered 2014
- California ISO – entered 2014



# Benefits of the WEIM

**\$5.05 billion** - gross benefits since 11/14

**925,568 metric tons** - CO<sub>2</sub> Emissions  
Reductions since 2014

**\$74 million** - NorthWestern Energy's Benefits  
since 6/21

2023

## Q3 BENEFITS

### ECONOMICAL

**\$462.05 M**

Gross benefits realized due to more efficient inter-and intra-regional dispatch in the Fifteen-Minute Market (FMM) and Real-Time Dispatch (RTD)\*

### ENVIRONMENTAL

**25,728**

Metric tons of CO<sub>2</sub>\*\* avoided curtailments

### OPERATIONAL

**59%**

Average reduction in flexibility reserves across the footprint



# Regional Market Development Phases

1. Energy Imbalance Market
2. Energy Day Ahead Market (EDAM)
3. Regional Transmission Organization (RTO)  
or Independent System Operator (ISO)



# Thank You!

## Questions?

