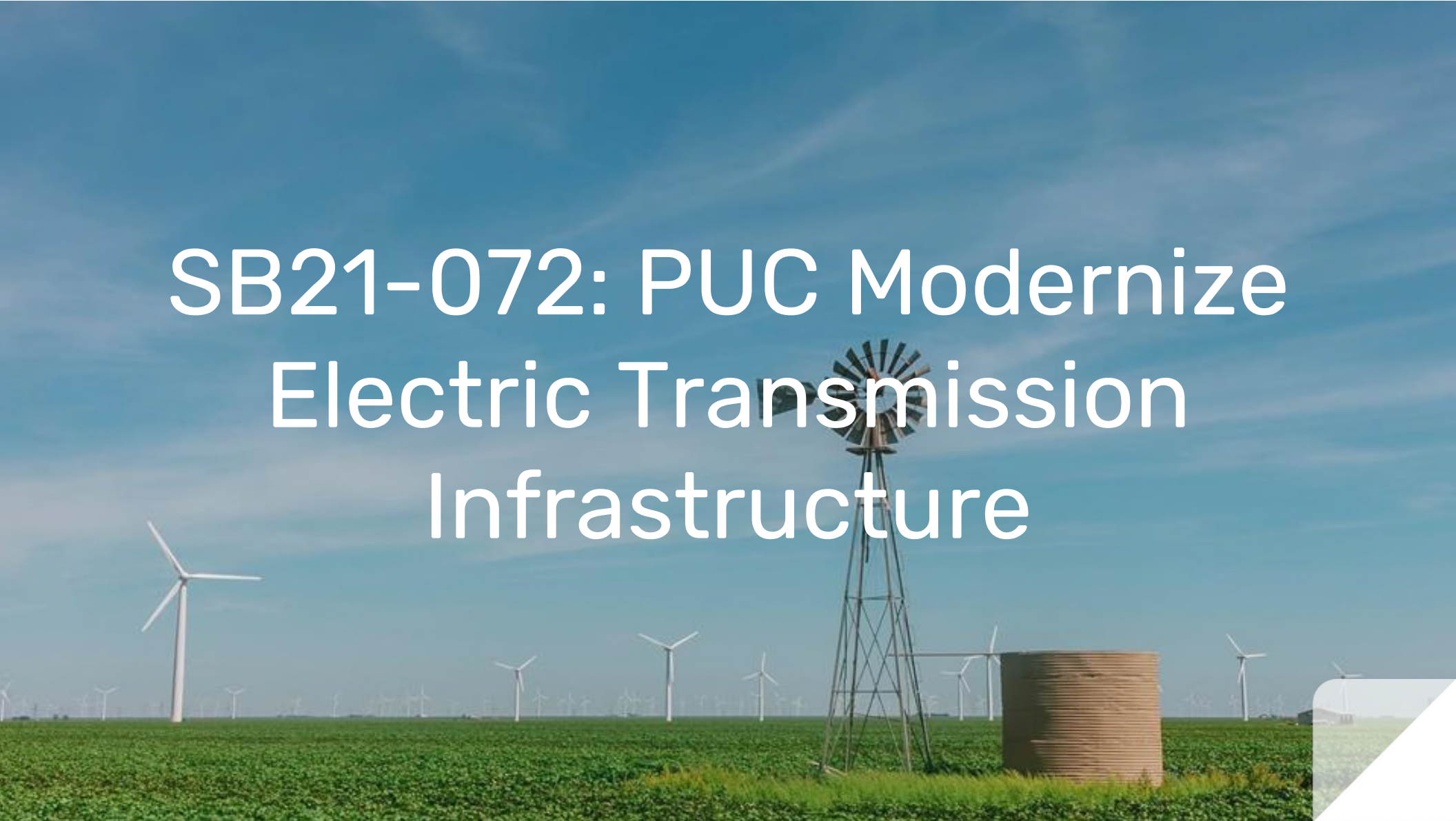


# SB21-072: PUC Modernize Electric Transmission Infrastructure





## OUR GOAL:

To enable the delivery of **low-cost electricity** and **energy reliability** to Colorado and the West through an efficient and integrated grid system.

# THE PROBLEM

- Outdated and inefficient electricity grid
- Higher cost in Colorado vs. other parts of the country
- Developers have more hurdles and costs to integrate new projects onto the transmission system
- Higher costs to meet our clean energy goals
- Reduced reliability

# THE SOLUTION

Provide a pathway for Colorado to join a regional transmission organization (RTO)

- Transparency and competition that ultimately drive down power prices for customers
- Impartial, non-profit, independent entity to manage, operate, and optimize the Western grid

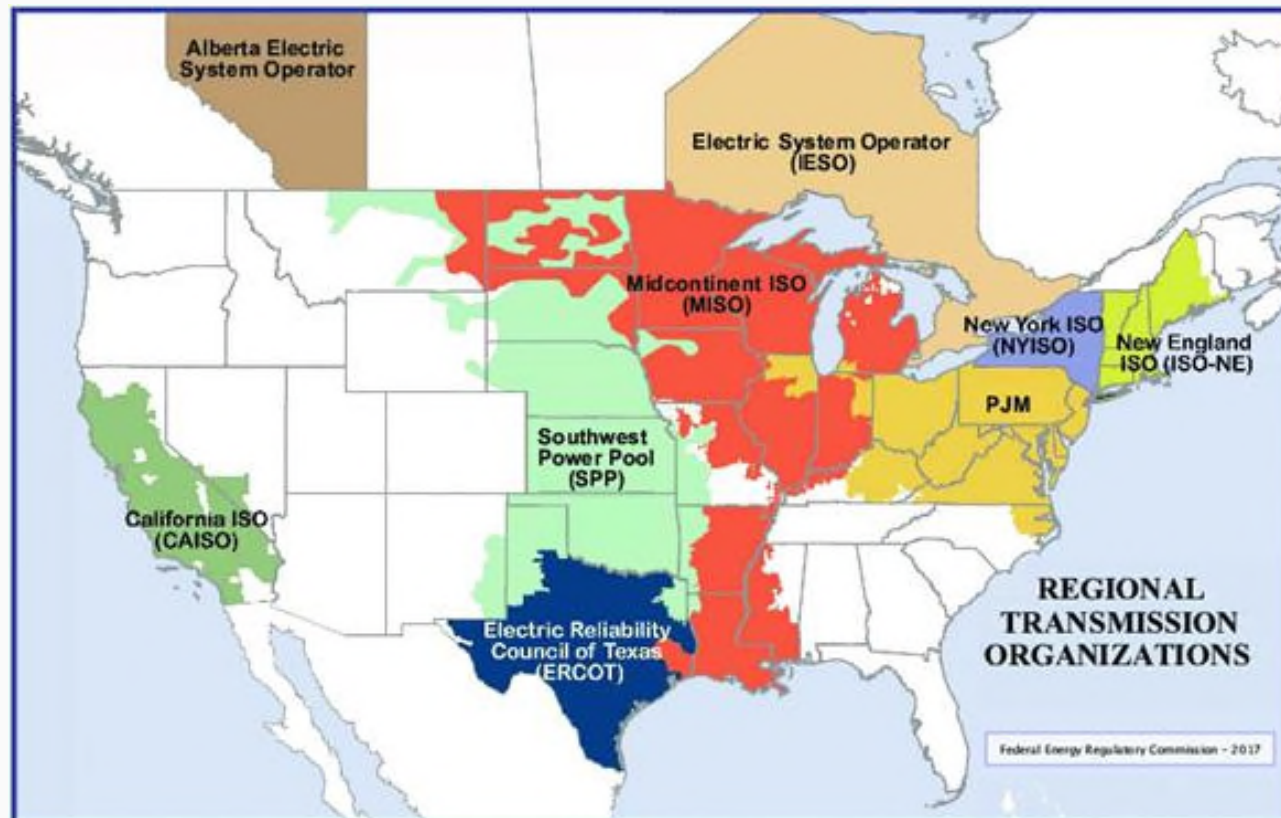
Create the Colorado Energy Transmission Authority (CETA)

- Enable and expedite building transmission lines
- Prioritize the adoption of renewables and local jobs



# BACKGROUND

- Three grids in the United States
- ERCOT, RTOs and ISOs oversee sections of the grids in the East
- West includes CAISO and 38 individual balancing authorities and transmission owners

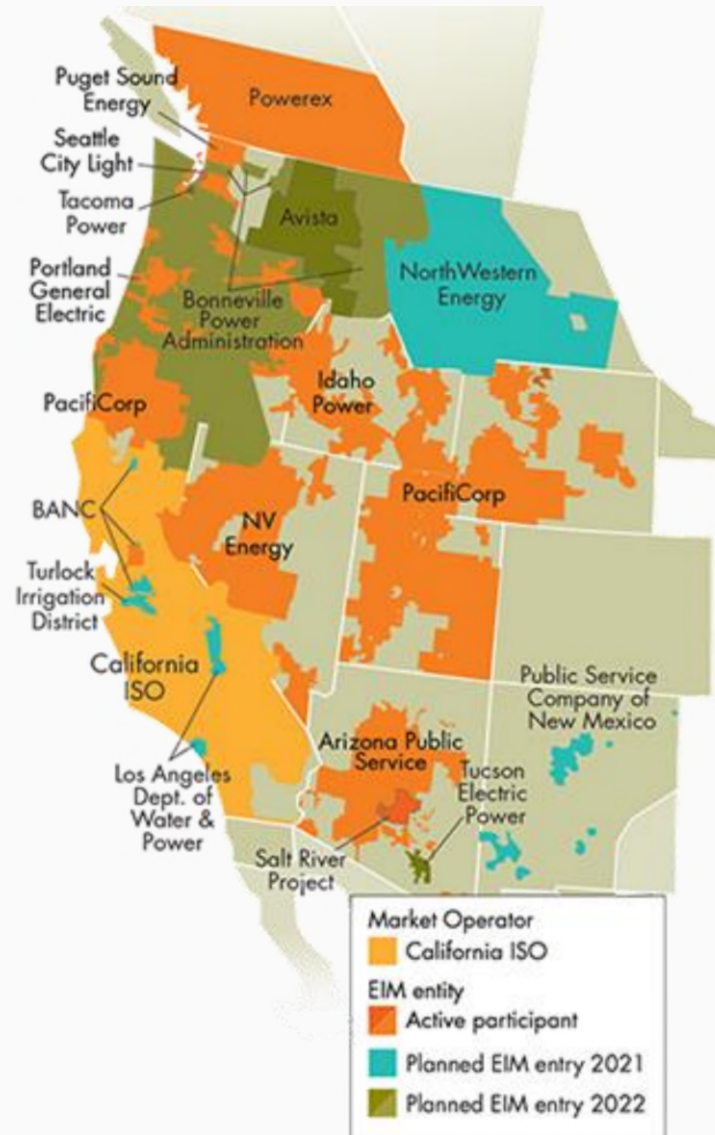




# WE HAVE WESTERN EIMs...

But do they solve the problem?

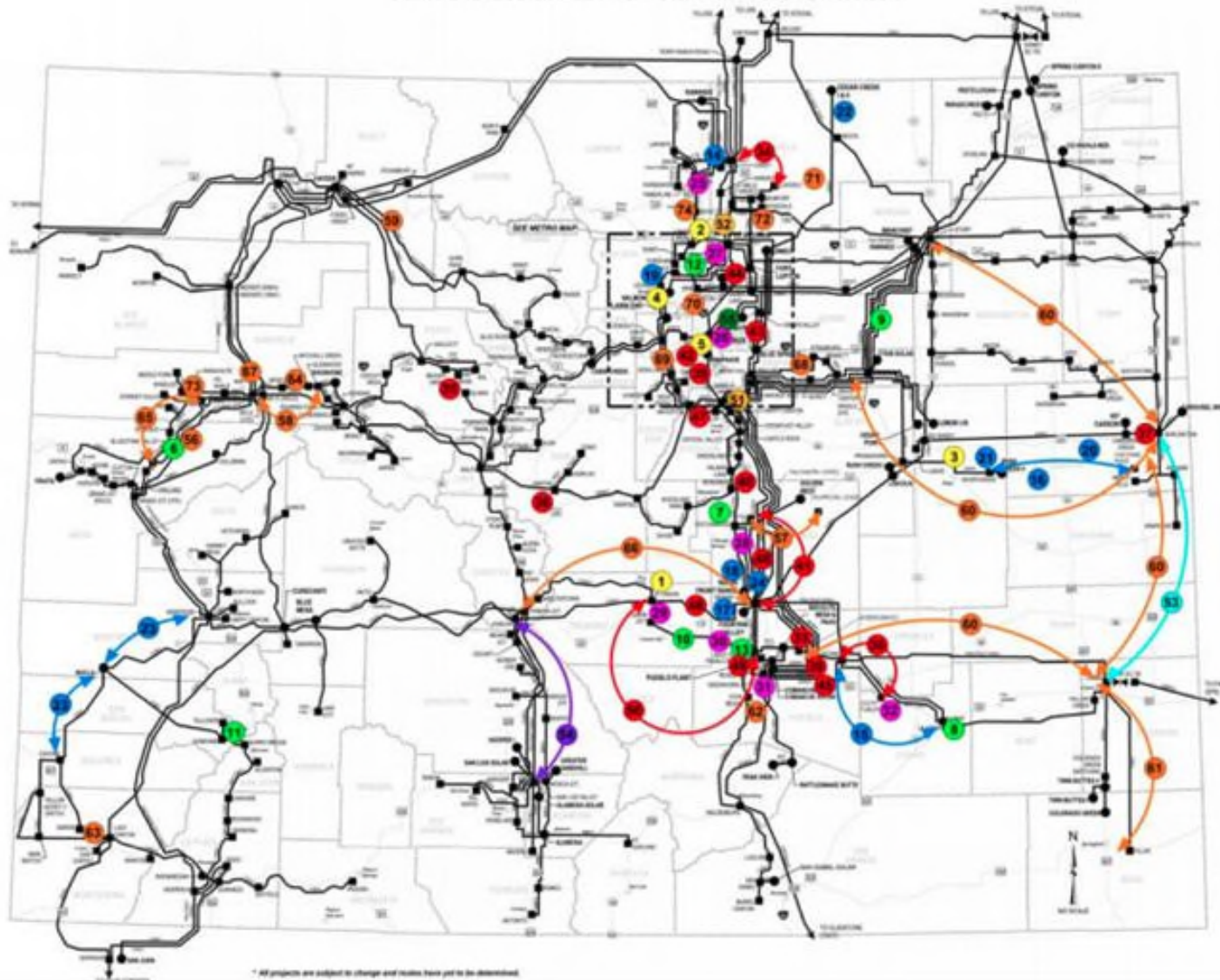
- Deliver a small fraction of the savings and efficiencies of a full RTO
- Low impact and do not provide a transparent mechanism for low cost resources to access the grid



# ALPHABET SOUP: RTO/ISO, EIM, EDAM

Characteristic & Function	RTO	EIM	EDAM
Independence	✓	✓	✓
Scope & Regional Configuration	✓	✓	✓
Operational Authority	✓		
Short Term Reliability Authority	✓		
Tariff Admin & Design	✓		
Congestion Management	✓	Only Real-Time	Real-Time and Day-Ahead
Parallel Path Flow	✓	✓	✓
Ancillary Services	✓		
OASIS/TTC/ATC Authority	✓		
Market Monitoring	✓		
Planning & Expansion	✓	✓	✓
Interregional Coordination	✓		

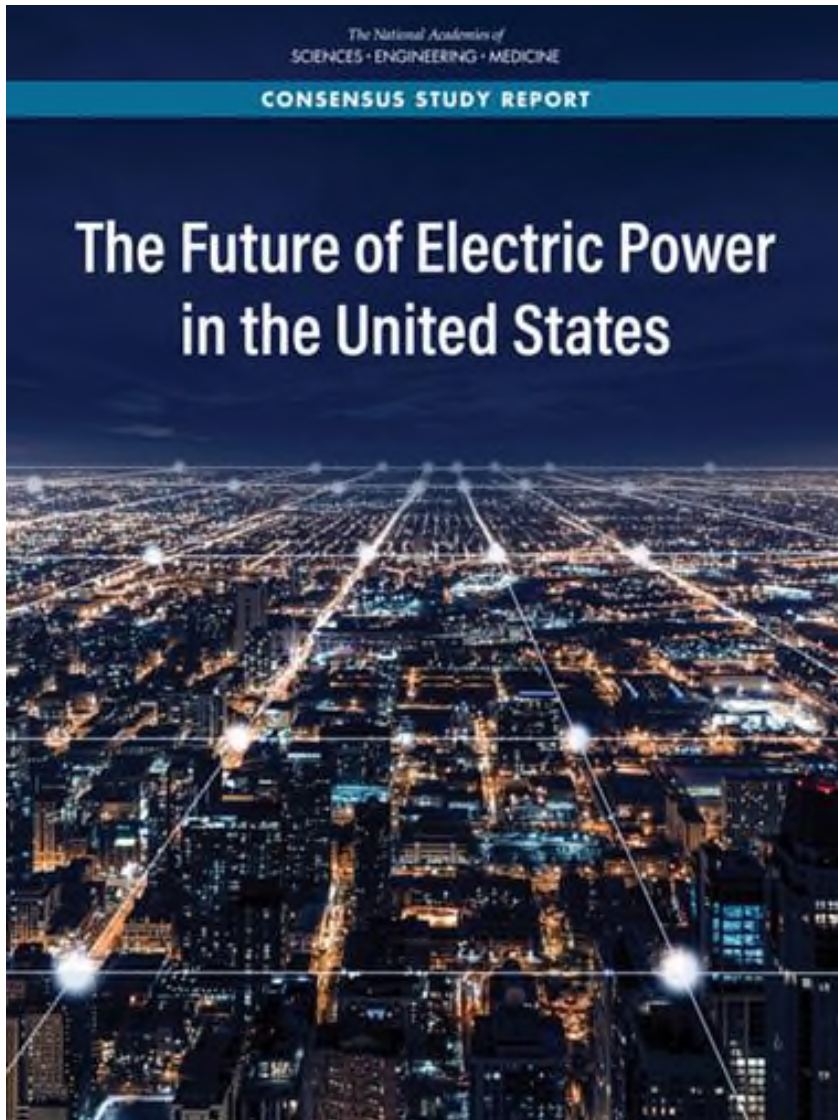
### Colorado Rule 3627 - Ten Year Transmission Plan



# WHY IS AN RTO THE RIGHT ANSWER?

## \$ Billions Saved with a Regional Grid





February 25, 2021

- “Congress and the states should support the evolution of planning for and siting of regional transmission facilities in the United States...”
- Thanks to the development of large scale, centrally controlled, multistate, interconnected grids, power generation could be spatially separate from loads, supporting both urban and rural economic and industrial development.
- ...there is a growing focus on increasing sustainability and addressing climate change, in part through increased use of renewables. At high penetrations, this will require increasing the capacity of high-voltage, multistate transmission networks.

# WHAT DOES THIS MEAN FOR COLORADO?

## ECONOMIC DEVELOPMENT BENEFITS INCLUDING:

\$95+ MILLION PER YEAR SAVED IN  
ELECTRICITY BILLS FOR COLORADO

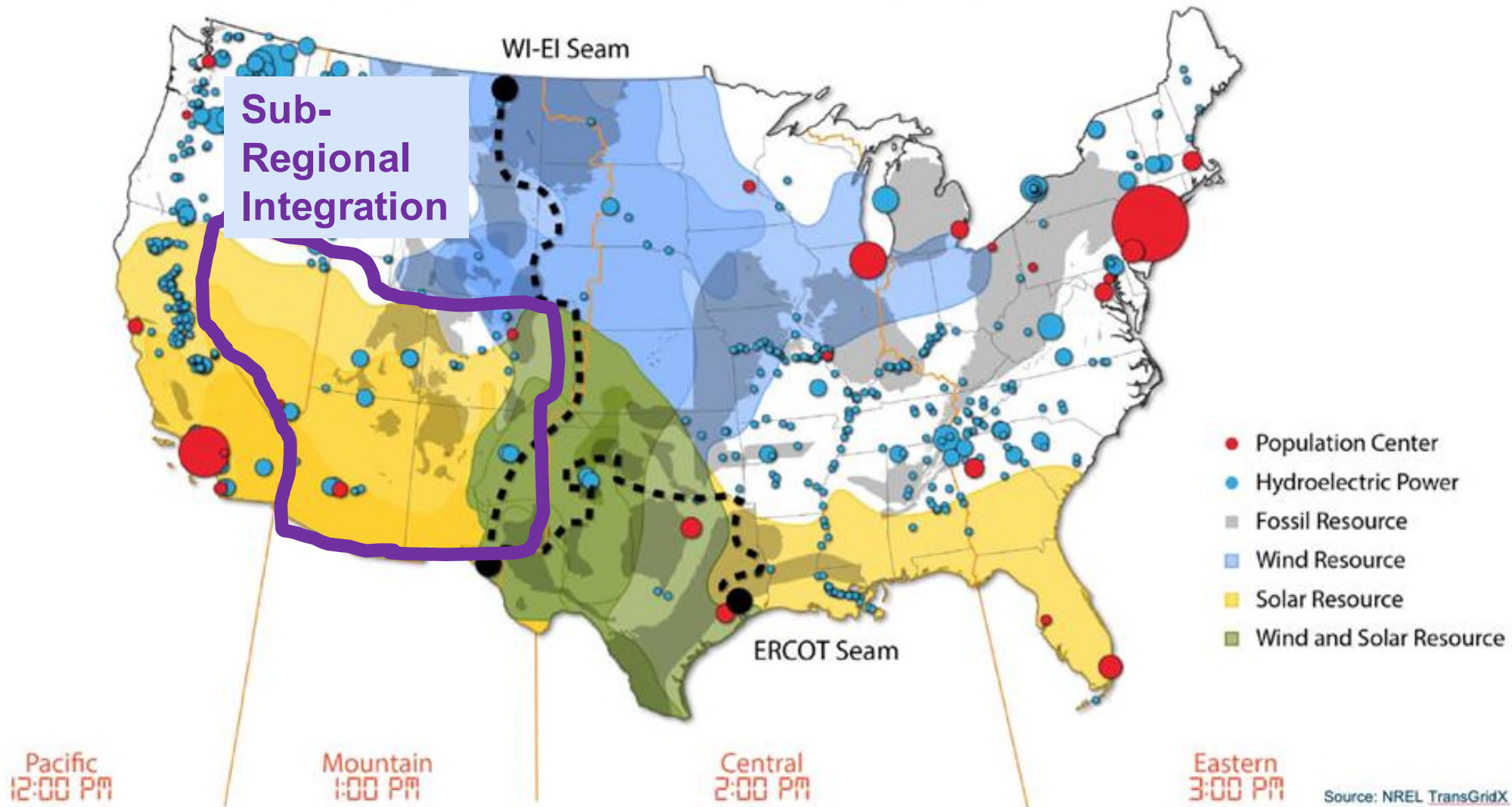
BILLIONS OF NEW INFRASTRUCTURE  
INVESTMENT OVER A DECADE

76 NEW JOBS PER MILE OF TRANSMISSION LINE

CLIMATE TARGETS MET WITH AN RTO



# Renewables are Strong where Grid is Weak



# WHAT DOES THIS MEAN FOR COLORADO?



COST SAVINGS



BOOST INVESTMENTS & JOBS



GROWTH & EXPANSION



PROMISES DELIVERED

# RECENT STUDIES WHICH SUPPORT THE CUSTOMER BENEFIT OF GRID INTEGRATION

- Patrick Brown and Audun Botterud, “The Value of Inter-Regional Coordination and Transmission in Decarbonizing the US Electricity System,” *Joule*, 2021.
- Aaron Bloom, et al. The Value of Increased HVDC Capacity Between Eastern and Western U.S. Grids: The Interconnections Seam Study, *National Renewable Energy Laboratory*, 2020.
- Alexander E. MacDonald, et al., “Future cost-competitive electricity systems and their impact on US CO2 emissions,” *Nature Climate Change*, 2016.
- Kansas Electric Transmission Authority (KETA), 2015 Annual Report To the Governor And the Legislature
- Vibrant Clean Energy: Energy Imbalance Market Options for Colorado
- Vibrant Clean Energy and Energy Innovations: Economic and Clean Energy Benefits of Establishing a Southeast U.S. Competitive Wholesale Electricity Market