



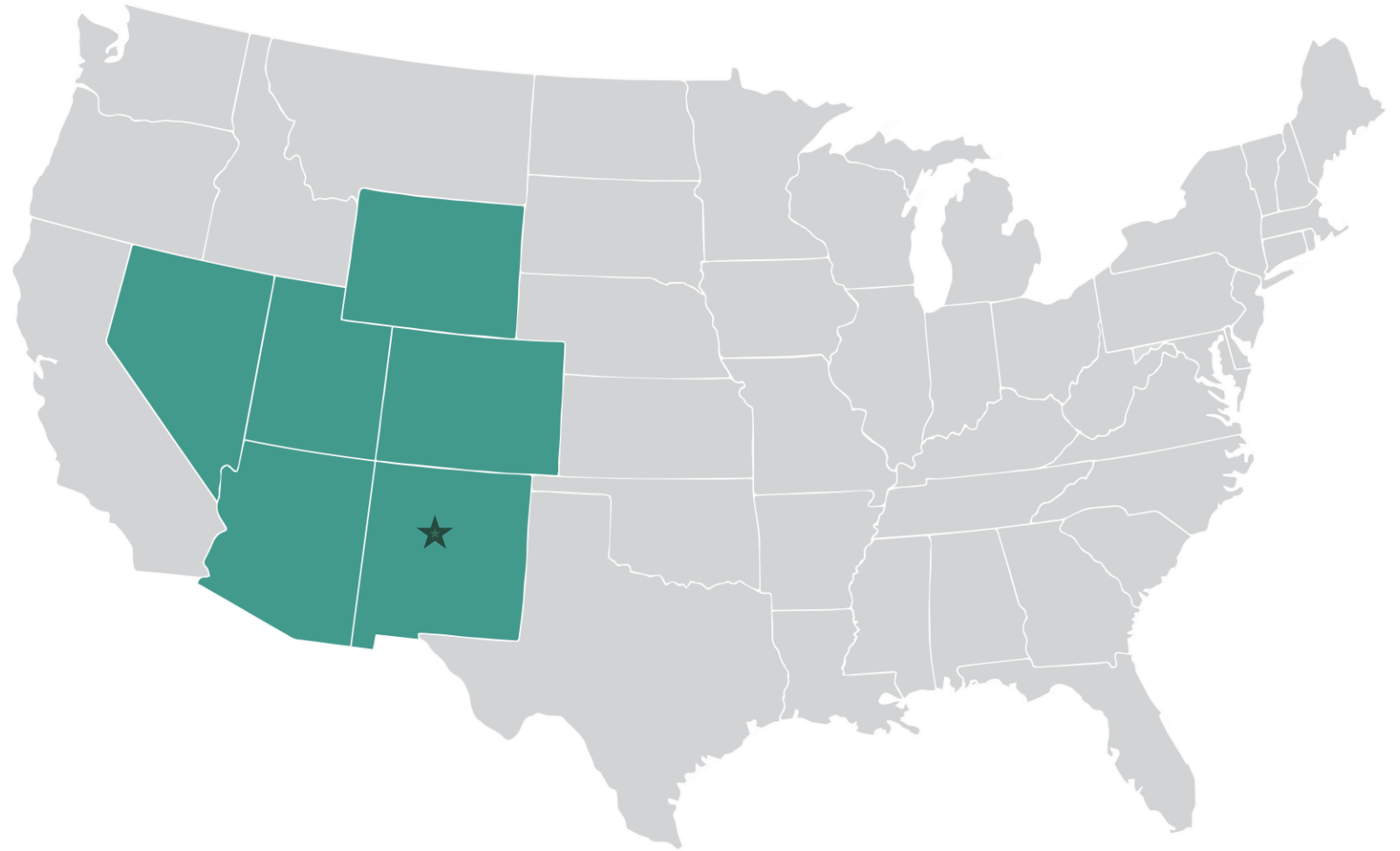
REGIONAL TRANSMISSION ORGANIZATIONS

Presentation to Science, Technology & Telecommunications
Interim Committee
September 1, 2023

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Interwest Energy Alliance

INTERWEST ENERGY ALLIANCE

- **Regional non-profit trade association** representing nation's leading developers and manufacturers of wind, solar, geothermal, and storage technologies, working with environmental NGOs
- **Mission** is to make the Intermountain West a leader in deployment of **reliable, cost-effective, and diverse** renewable energy resources.



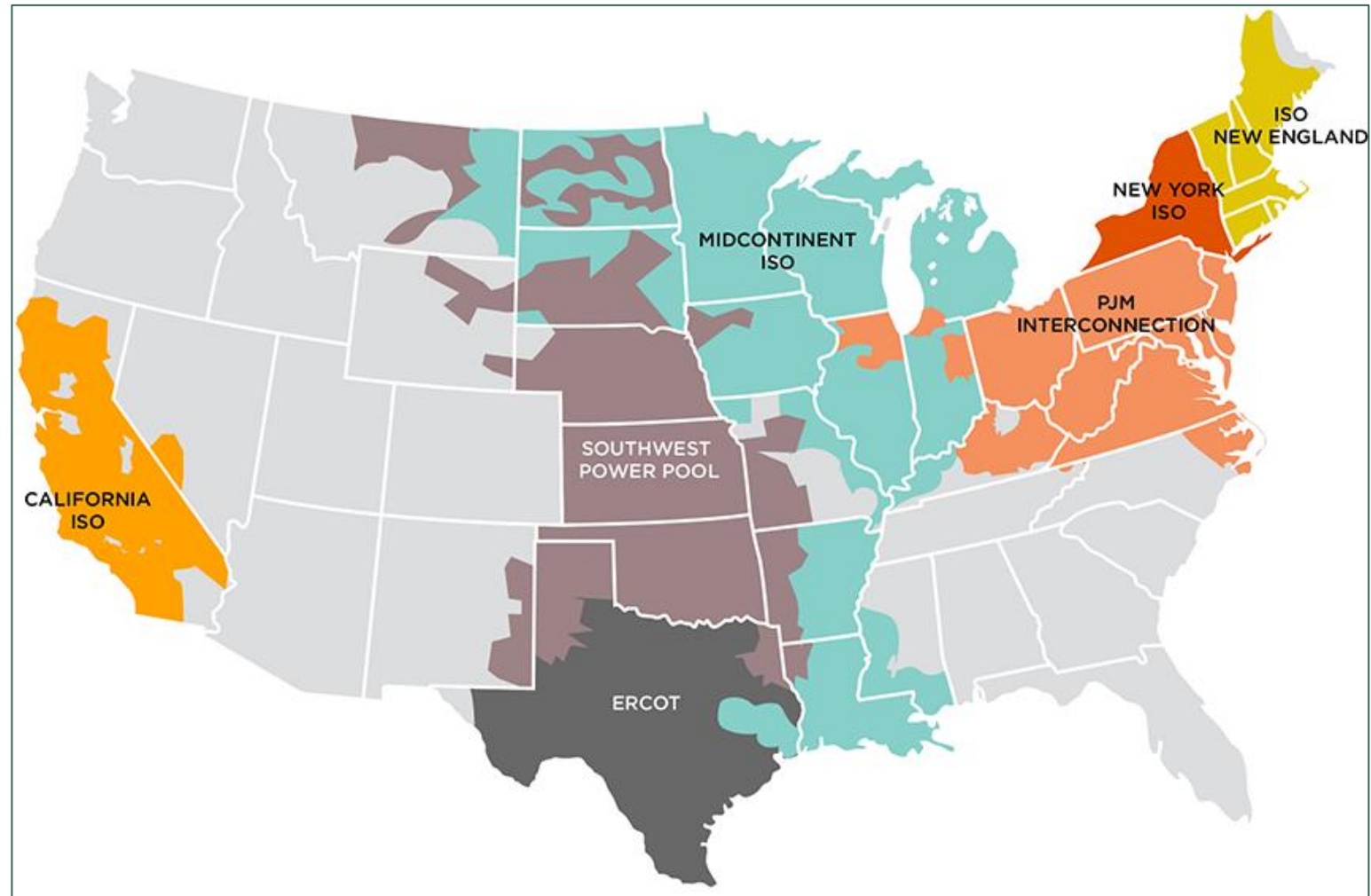
New Mexico, Colorado, Wyoming, Utah, Nevada, Arizona



WHAT IS AN RTO?

Regional Transmission Organization

An electric power transmission operator that coordinates, controls, and monitors a regional electric grid.



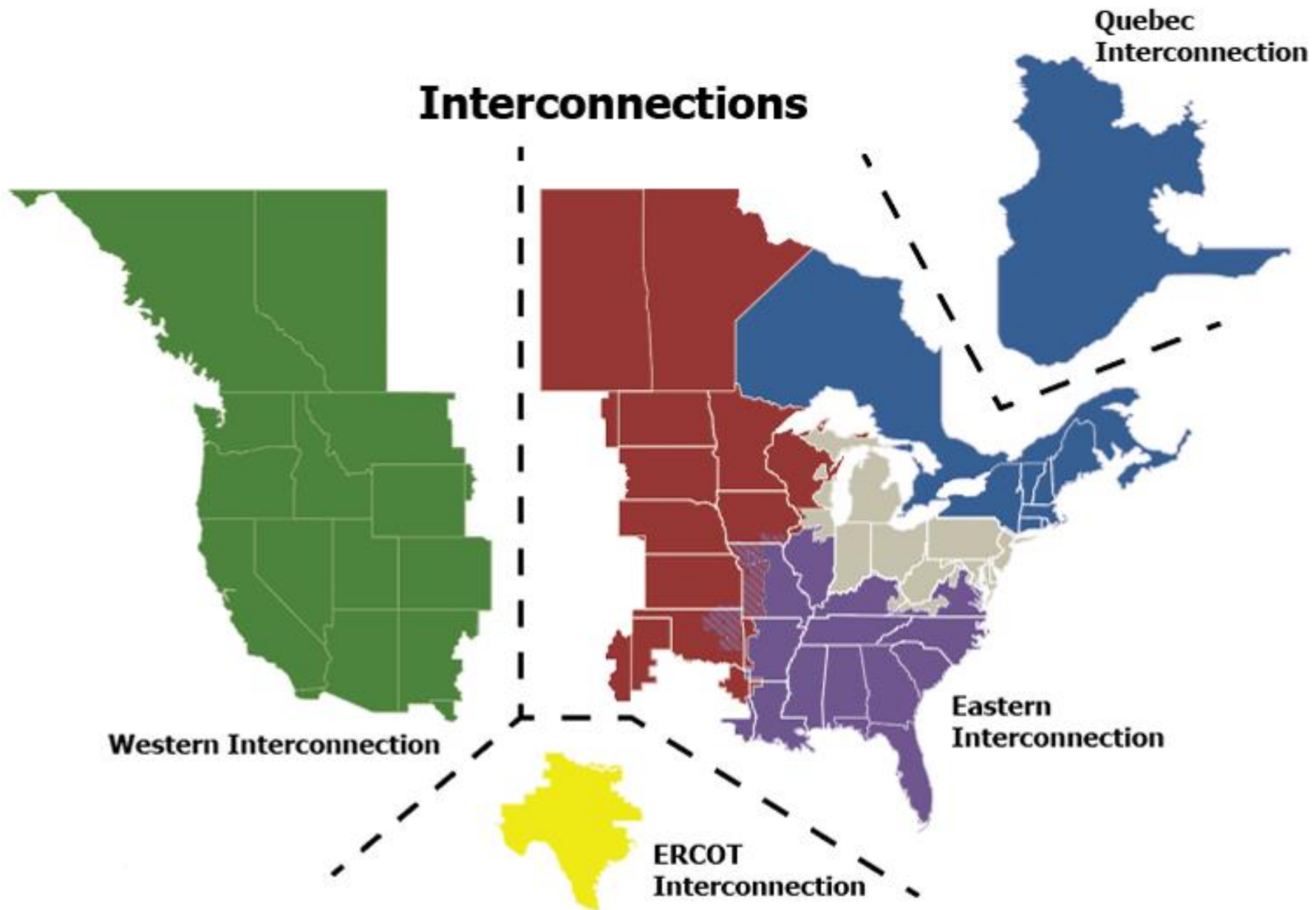
THE ELECTRIC GRID IS CHANGING

The Western grid was designed decades ago, when the population was smaller, renewables were a thing of the future, and we knew little about climate change.

1. Need more renewables
2. Need more transmission lines
3. Reliability must be maintained
4. Costs must be low

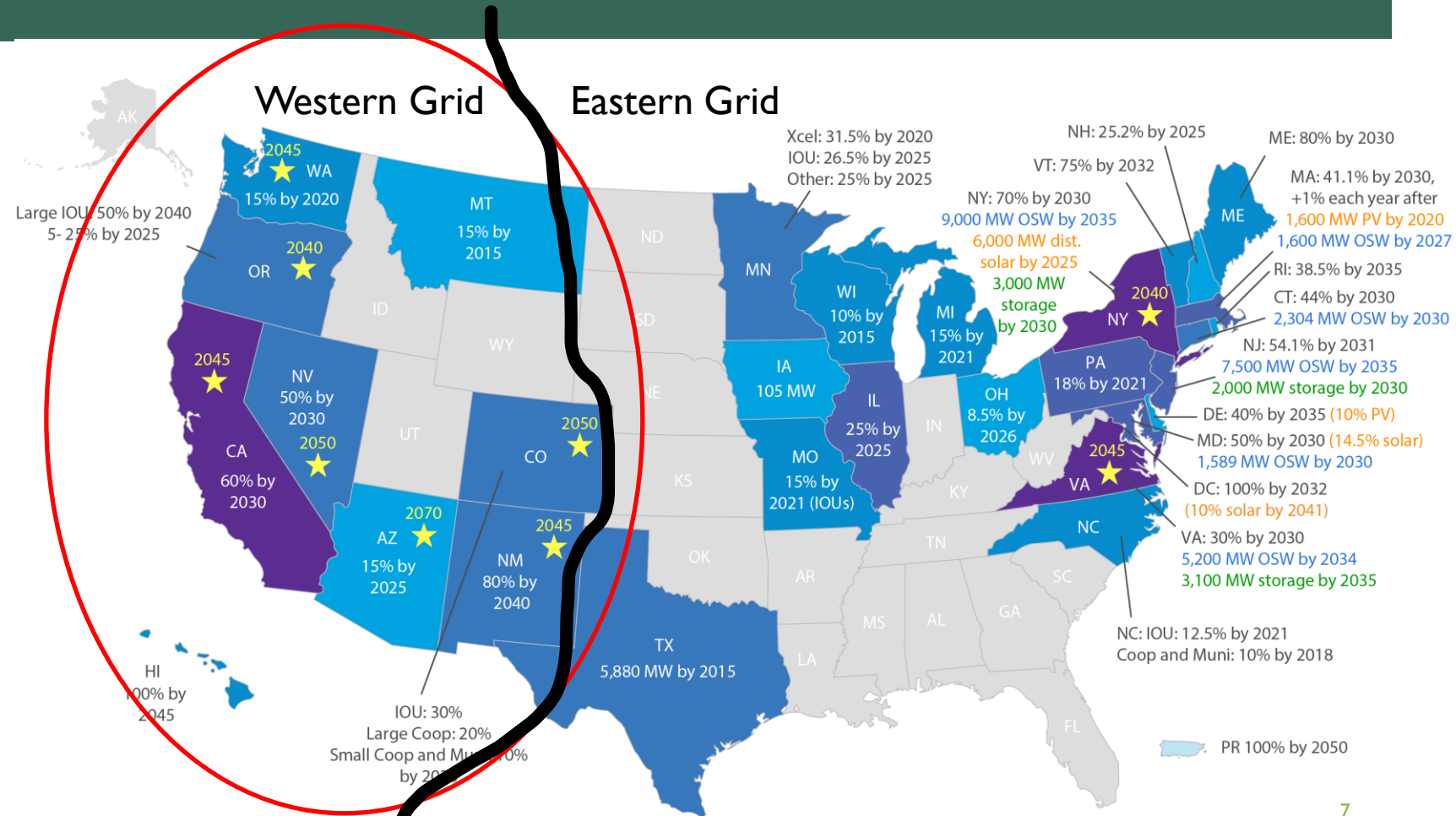
An RTO can help!

Interconnections



REGIONAL POLICY DRIVERS

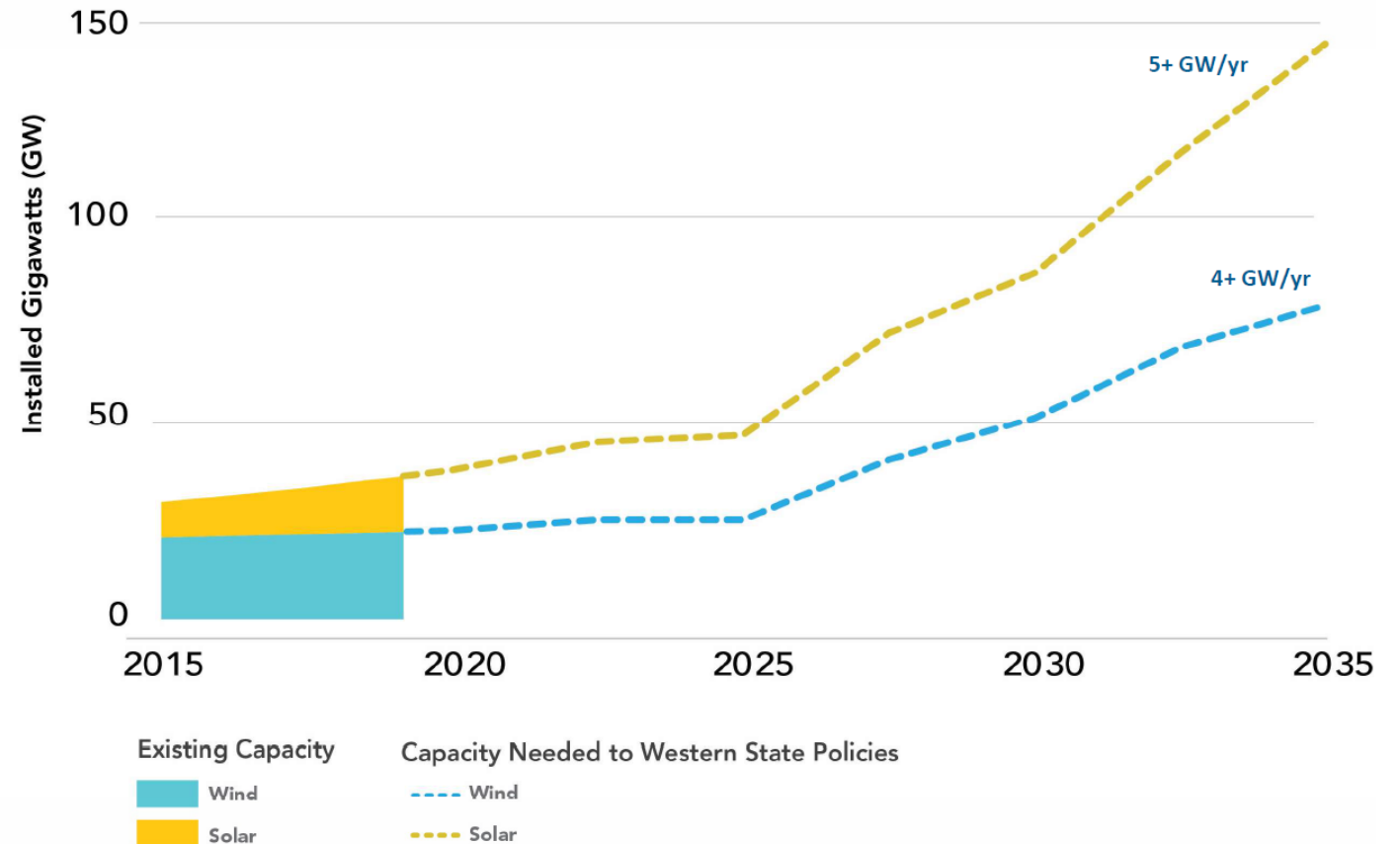
80% of energy use in the West is now aligned on decarbonization policies

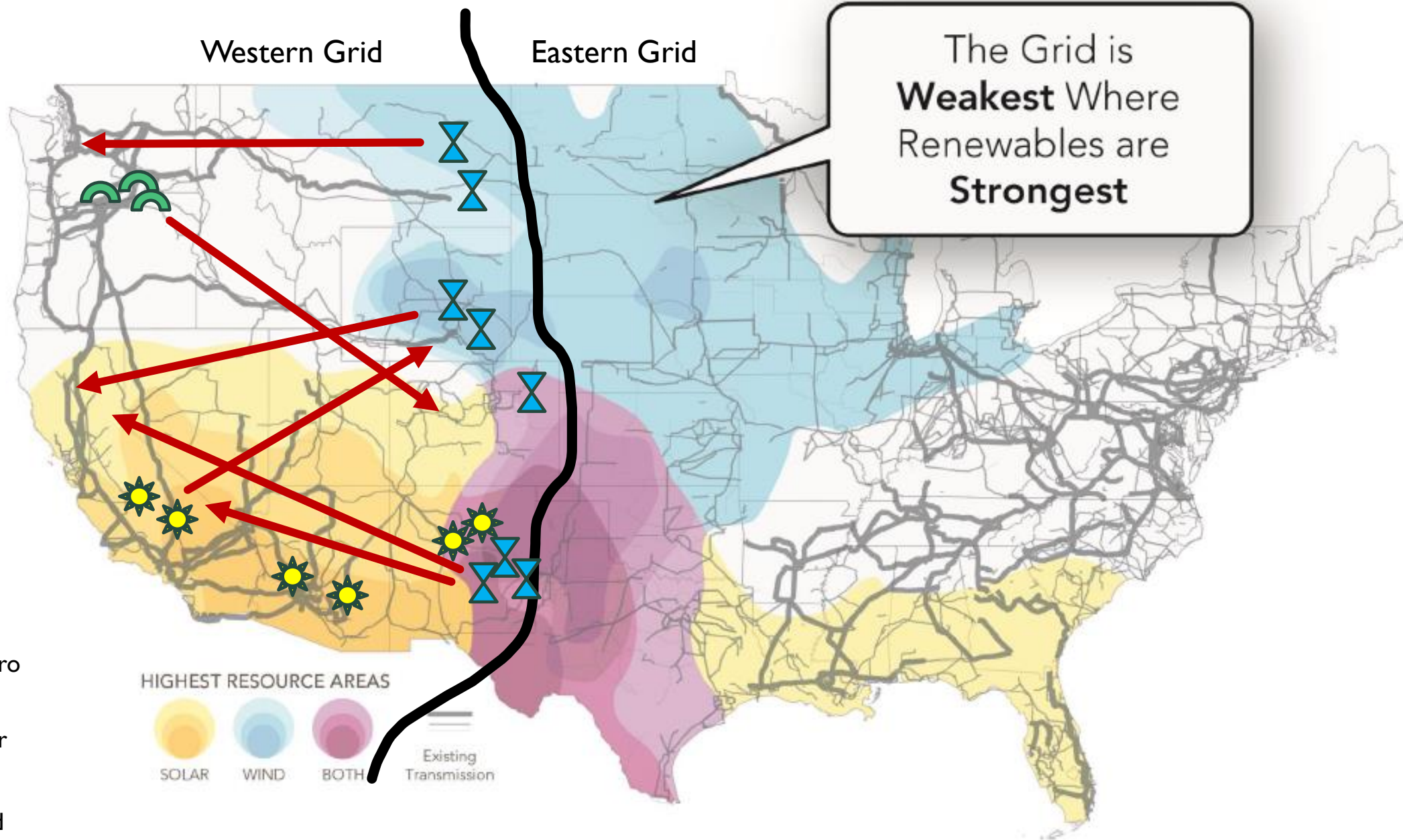





INCREASED DEMAND FOR RENEWABLES

- Existing policies in the West require ~9 GW new renewables per year starting in 2026
- By 2050 the total demand in the West is upwards of 150 GW
- NM Renewables critical to meeting Western demand

Wind and Solar Needed in the Western U.S. to Meet Existing State Policies





-  Hydro
-  Solar
-  Wind

HIGHEST RESOURCE AREAS

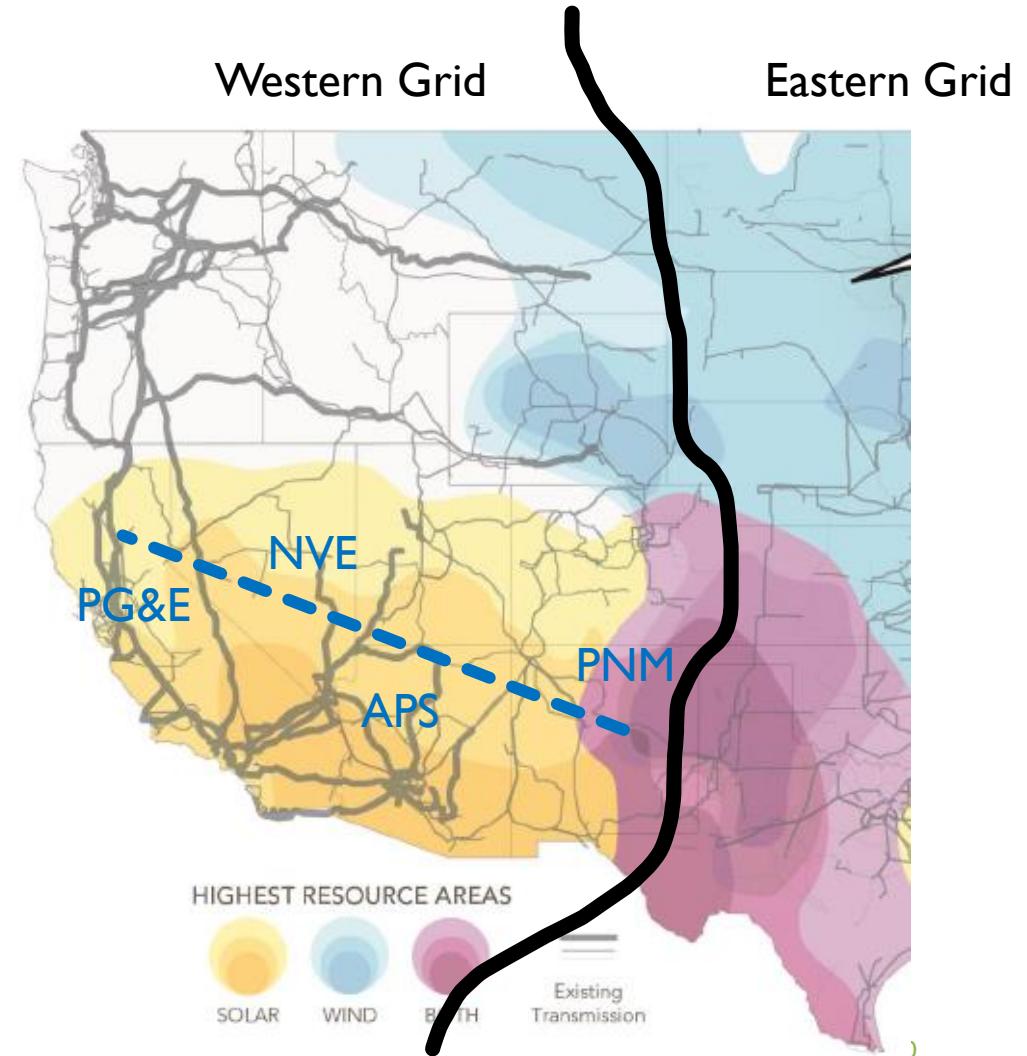
-  SOLAR
-  WIND
-  BOTH
-  Existing Transmission

Each utility plans and pays for transmission itself

Utilities are building large lines within their service territories, improving interstate connectivity

Private transmission developers are building large lines, mostly leading to California

Transmission takes years! Planning, regulatory approval, and siting can each take a long time



RELIABILITY AND EXTREME WEATHER EVENTS

FERC commissioners tell senators of major grid reliability challenges, with some blaming markets. UtilityDive (May 5, 2023).

- “There is a looming reliability crisis in our electricity markets.” (Danly).
- “The United States is heading for a very catastrophic situation in terms of reliability.” (Christie).
- “We face unprecedented challenges to the reliability of our nation’s electric system.” (Phillips).
- Growing reliability and resilience challenges from extreme weather and cyber and physical security threats require changes to the U.S. grid. (Clements).

Winter Storm Uri in 2021. More snow and colder temperatures than seen in decades – lines down, natural gas plants froze, over 200 people died and the cost was in the \$billions. NERC Final Report (Feb 2021)

Wildfires and extreme heat events are increasing in the West. Heat = drought = fires. Heat waves increase electricity use. Poorly maintained transmission lines cause fires, and line losses reduce electricity availability.

THE ELECTRIC GRID IS CHANGING

An RTO can help!

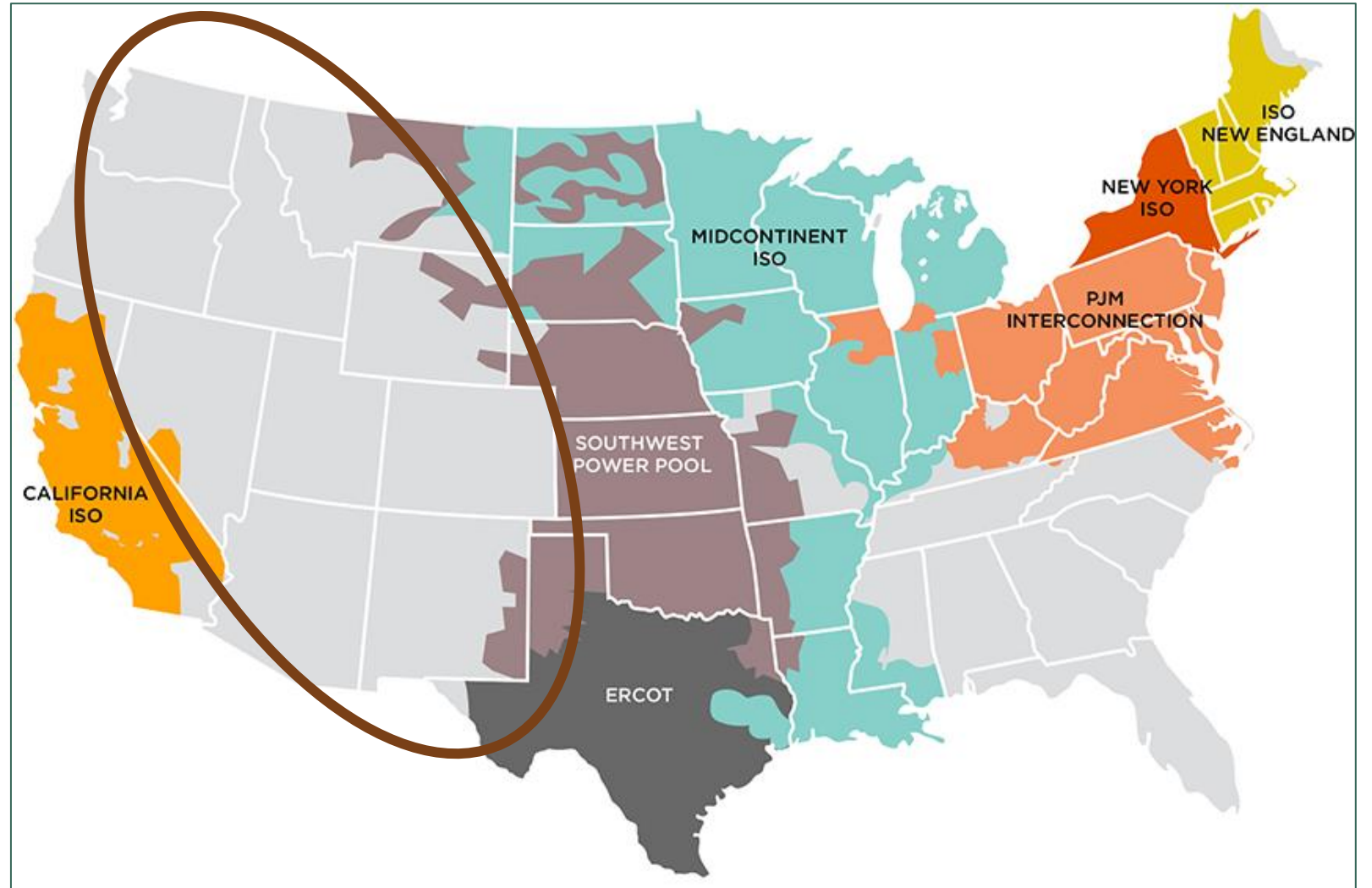
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2. Need more transmission lines
3. Reliability must be maintained
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WHAT IS AN ORGANIZED WHOLESALE MARKET?

There are seven Regional Transmission Organizations and Independent System Operators across the country, covering two-thirds of the electric energy consumed. (Referred to as “RTOs”.) These entities:

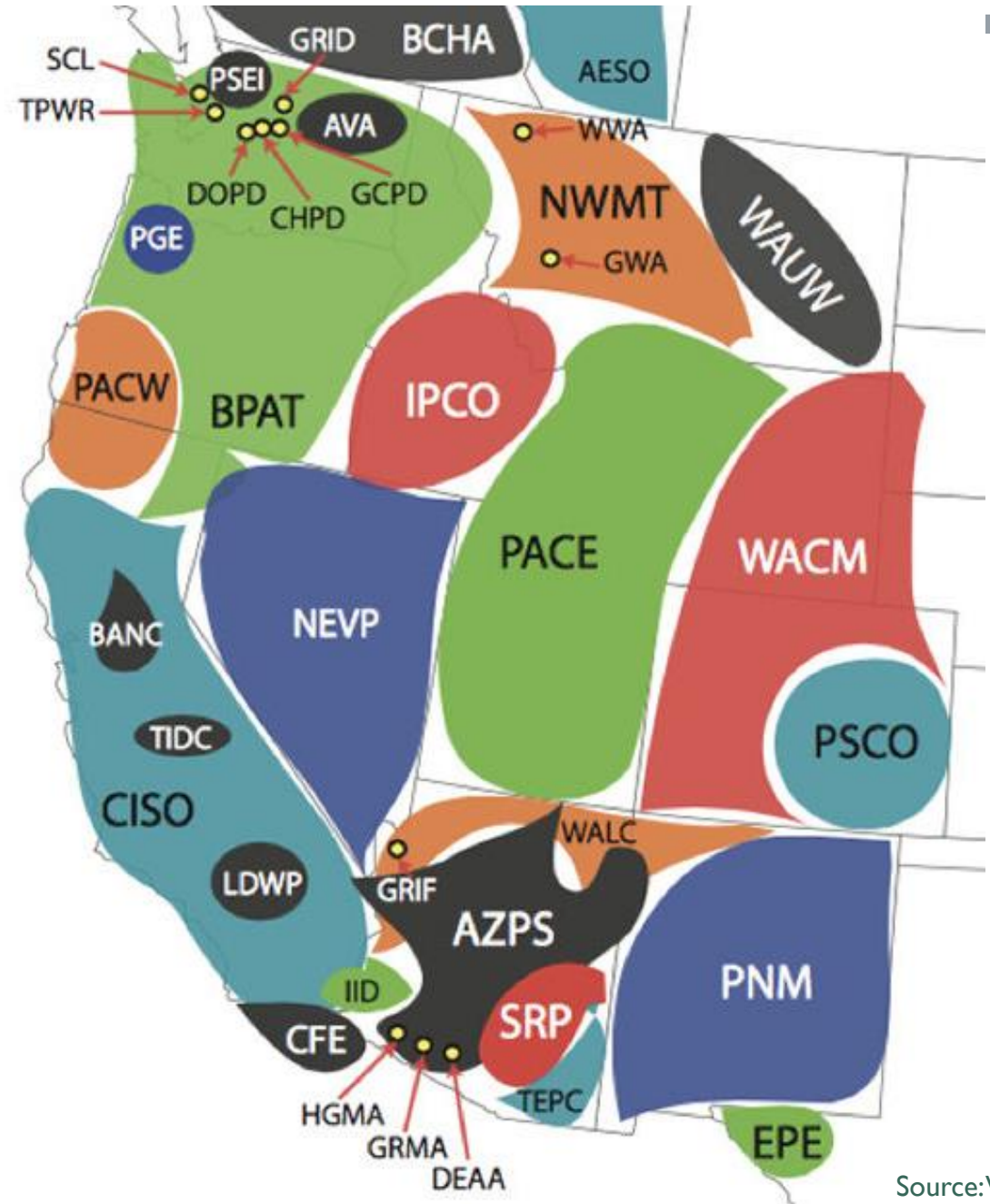
- Operate the transmission system within a geographic area
- Ensure reliable electric service
- Operate markets for the sale of electricity and related products
- Conduct transmission planning
- Authorize cost allocation, reimbursing utilities or others for developing and upgrading the lines
- Do not own generation or transmission, control generation, approve or site power plants

The west and southeast are lagging without a market



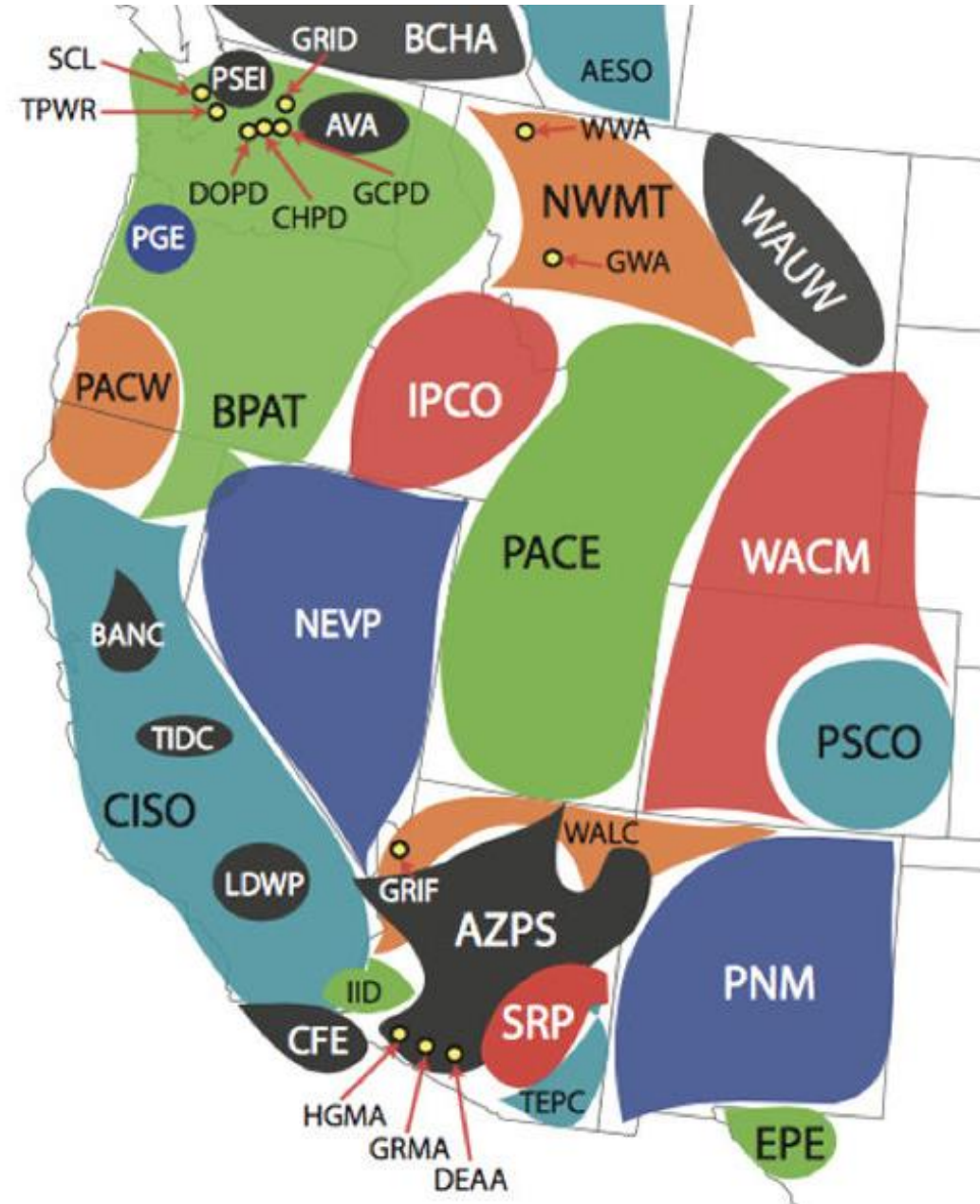
In fact...
We have something much messier.

- 38 “Balancing Areas”
- Responsible for balancing supply and demand in their footprint



Business as usual....

- Overbuilding power plants for reliability sake
- Limited resource sharing
- No incentive to build regional transmission lines
- Pay more to move electricity across each one
- Less competition between power plants

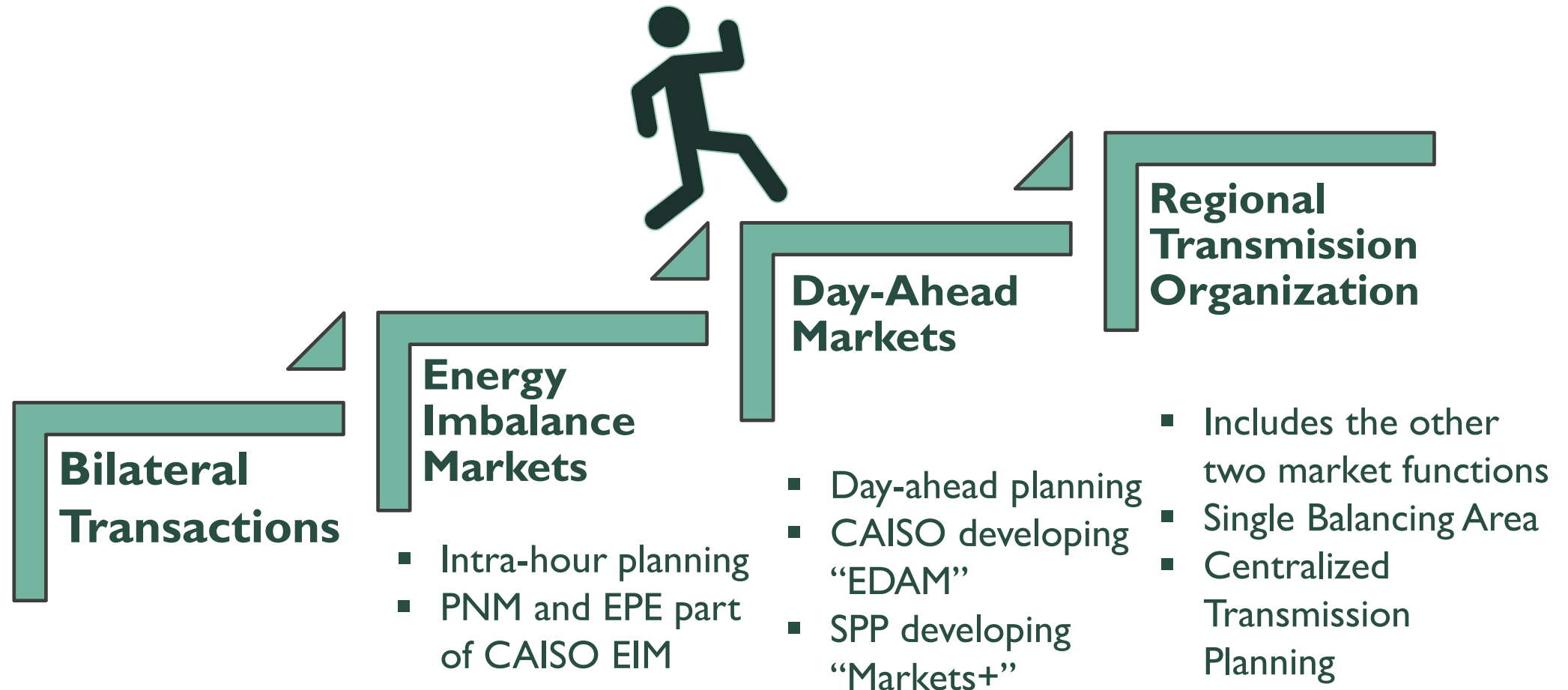


WHAT ARE THE BENEFITS OF AN RTO?

BENEFITS:

- **Decarbonization** – faster, more affordable path to clean energy goals
- **Reliability** – broader geographic footprint means more reliable system
- **Affordability** – increases competition on the grid, eliminates expensive features of current system, and allows benefits of efficiencies of scale
- **Economic Development** – states like NM can lead in supplying clean energy

Progress towards Regional Transmission Organization

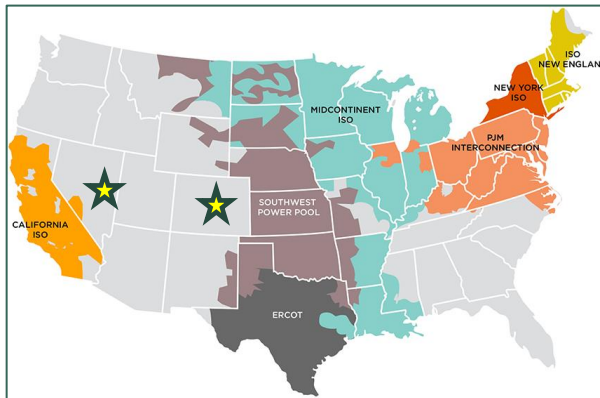


PROGRESS TOWARDS RTO

State Mandates

- CO SB 21-072
- NV SB 21-448

(both require utilities to join RTOs by 2030)



NM Discussions

- 2030 requirement in PNM/Avangrid Merger 2021
 - Merger denied 5-0
- Grid Modernization whitepaper recommends forming RTO Task Force
- New NMPRC Investigation on Regional Market Activity
 - Comments due Sept. 14
 - Workshop Sept. 21st

QUESTIONS?

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