



Western Organized Wholesale Market Expansion

The Value of Regional
Transmission Organizations for
the West





About CEBA

The Clean Energy Buyers Association (CEBA) is a business trade association that activates a community of energy customers and partners to deploy market and policy solutions for a carbon-free energy system. CEBA's more than 400 members represent more than \$7 trillion in annual revenues and 17 million employees and include institutional energy customers of every type and size – corporate and industrial companies, universities, and cities.



Aspiration: Achieve a 90% carbon-free U.S. electricity system by 2030 and to cultivate a global community of energy customers driving clean energy.

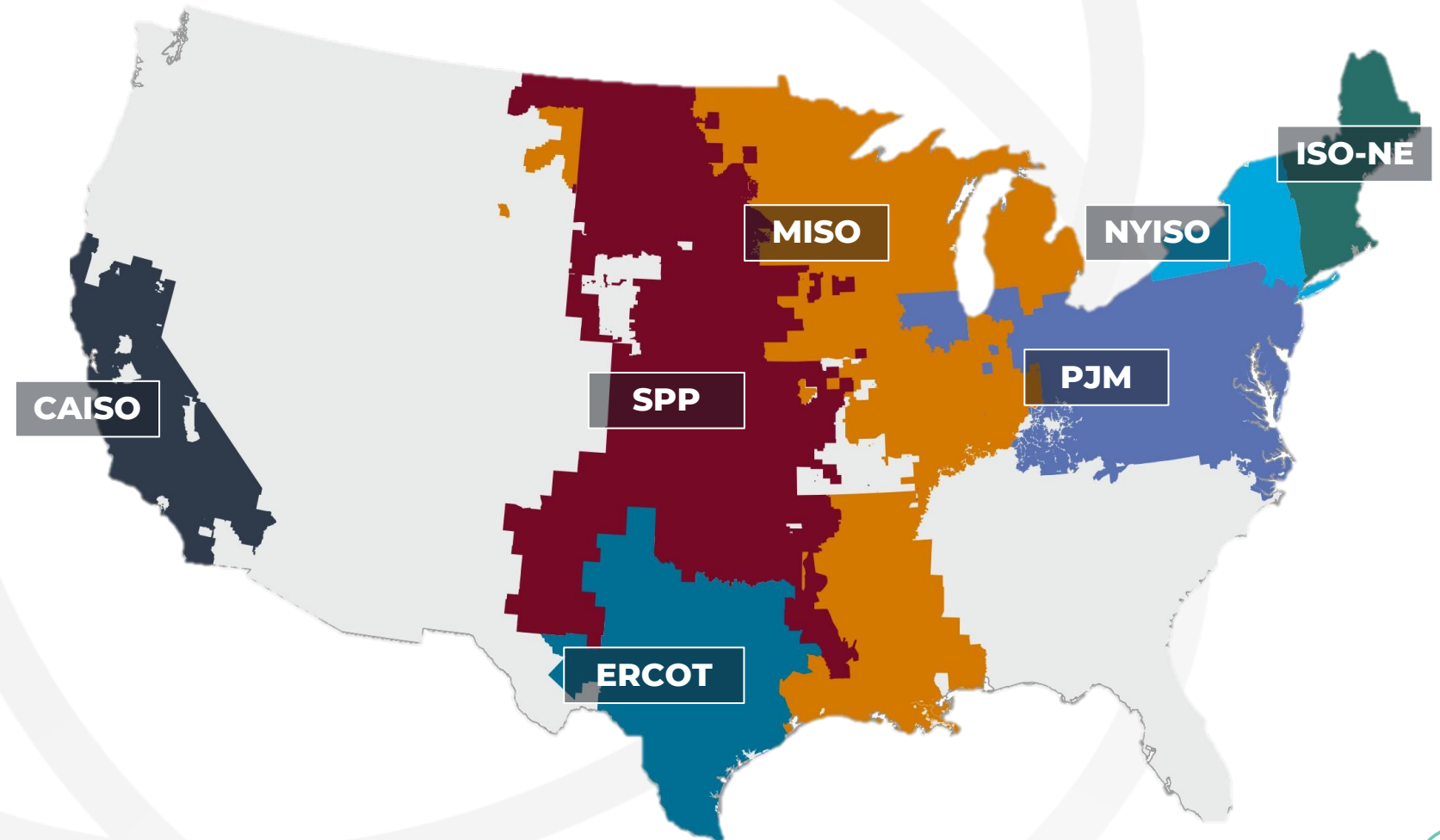
[Learn more at cebuyers.org](https://cebuyers.org)



CUSTOMER DEALS ARE CONCENTRATED IN ORGANIZED WHOLESALE MARKET AREAS

In 2021, 25% of CEBA member deals were located in **organized wholesale markets** operated by regional transmission organizations (RTOs) or independent system operators (ISOs).

The majority of these deals are virtual power purchase agreements (vPPAs) **enabled by the markets**.



Acronyms: California Independent System Operator (CAISO); Electricity Reliability Council of Texas (ERCOT); Independent System Operator New England (ISO-NE); Mid-Continent Independent System Operator (MISO); New York Independent System Operator (NYISO); PJM, a legacy acronym that used to stand for Pennsylvania- New Jersey- Maryland; and Southwest Power Pool (SPP). **Sources:** RTO Backgrounders, Sustainable FERC (<https://sustainableferc.org/rto-backgrounders-2/>)

AREAS WITHOUT ORGANIZED WHOLESALE MARKETS LACK CUSTOMER OPTIONS AND MISS OTHER BENEFITS

Well designed and well implement organized wholesale markets can provide significant customer, societal, and environmental benefits.



Cost Savings
and Efficiency



Customer
Options
and Innovation



Robust Regional
Transmission
Planning



Reliability and
Renewable
Integration



Emissions
Reductions



Transparency



Economic
Development

“Well designed organized wholesale markets are foundational to getting us there quickly, cost-effectively, and in a way that works for customers.”

Peter Freed
Head of Energy Strategy, Meta



CEBA Supports Western Market Expansion

CEBA supports organized wholesale market expansion in the West. **A West-wide RTO could provide up to \$2 billion in annual benefits** and far surpass the impact of day-ahead markets alone.

Expanded Western markets should provide all the critical functions of RTOs and cover the widest possible footprint in order to maximize customer and ratepayer benefits, including increased reliability, resiliency, transparency, and customer engagement potential, as well as increased renewable energy deployment.

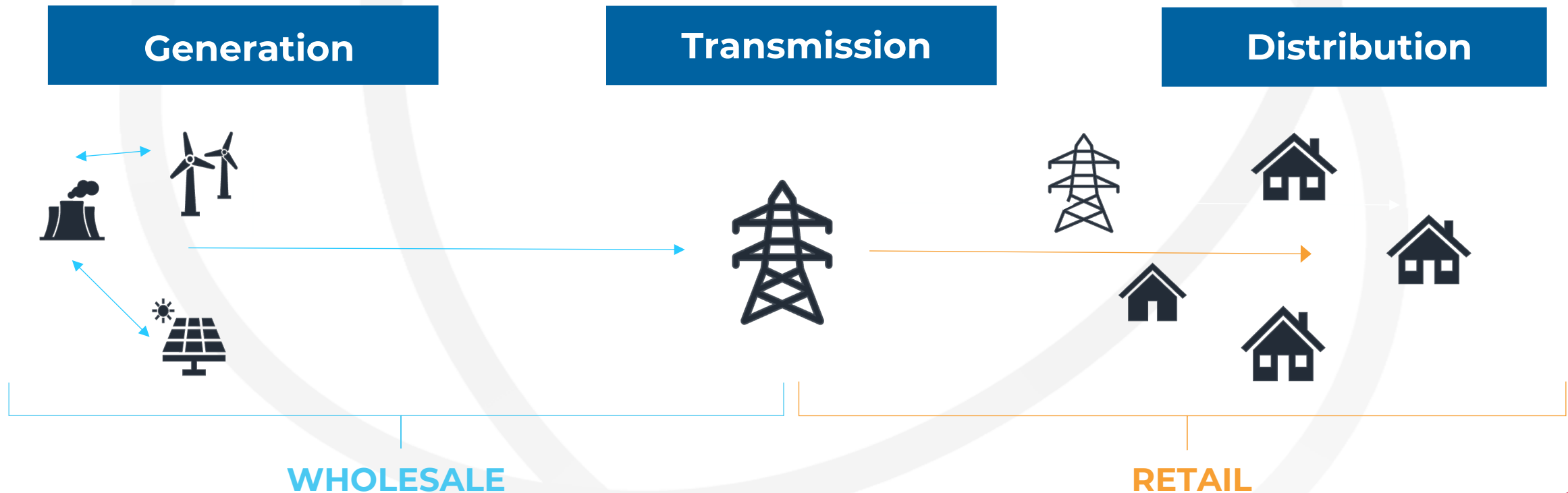




What Are Organized Wholesale Markets and RTOs/ISOs?

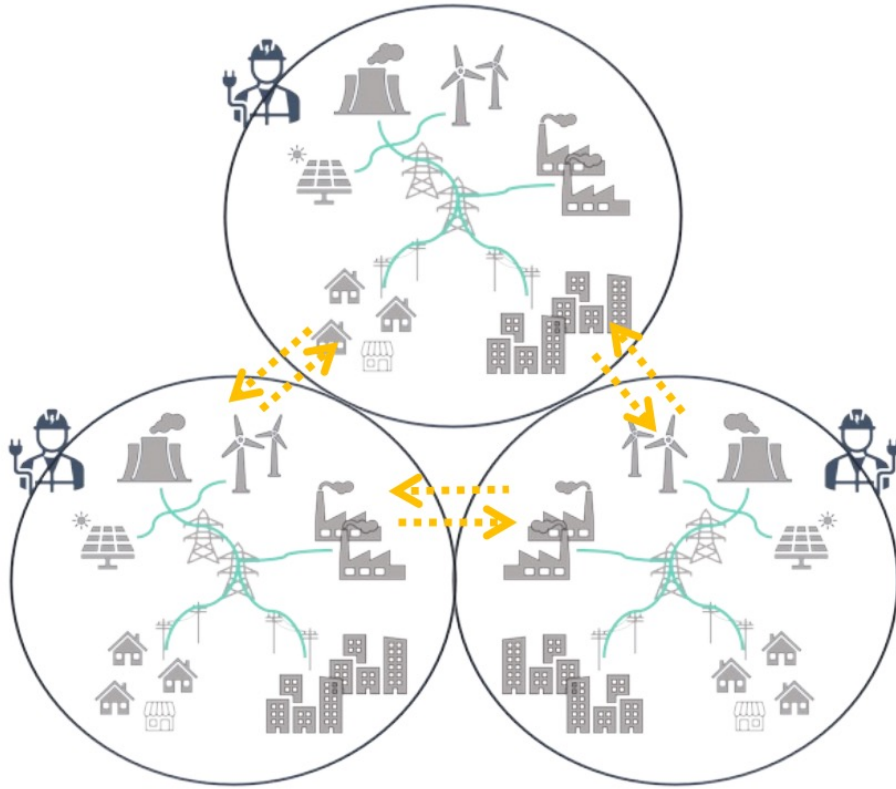
WHOLESALE MARKETS INVOLVE BULK POWER PURCHASE OF ELECTRICITY

New organized wholesale markets that increase competition between generators do not require and operate separately from competitive retail markets.

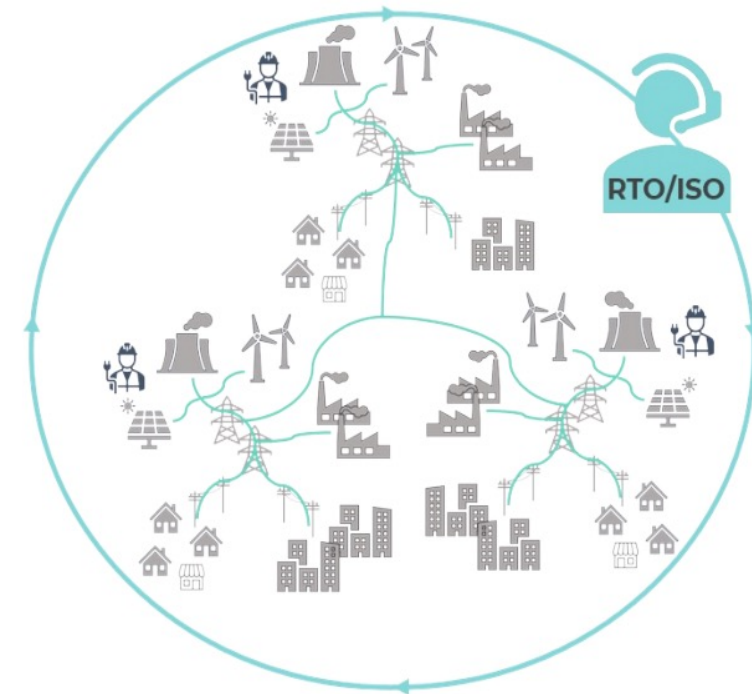


ORGANIZED WHOLESALE MARKETS ENHANCE REGIONAL COORDINATION

Organized wholesale markets create a platform for energy trading, transmission access, and reliability planning that optimizes the grid regionally.



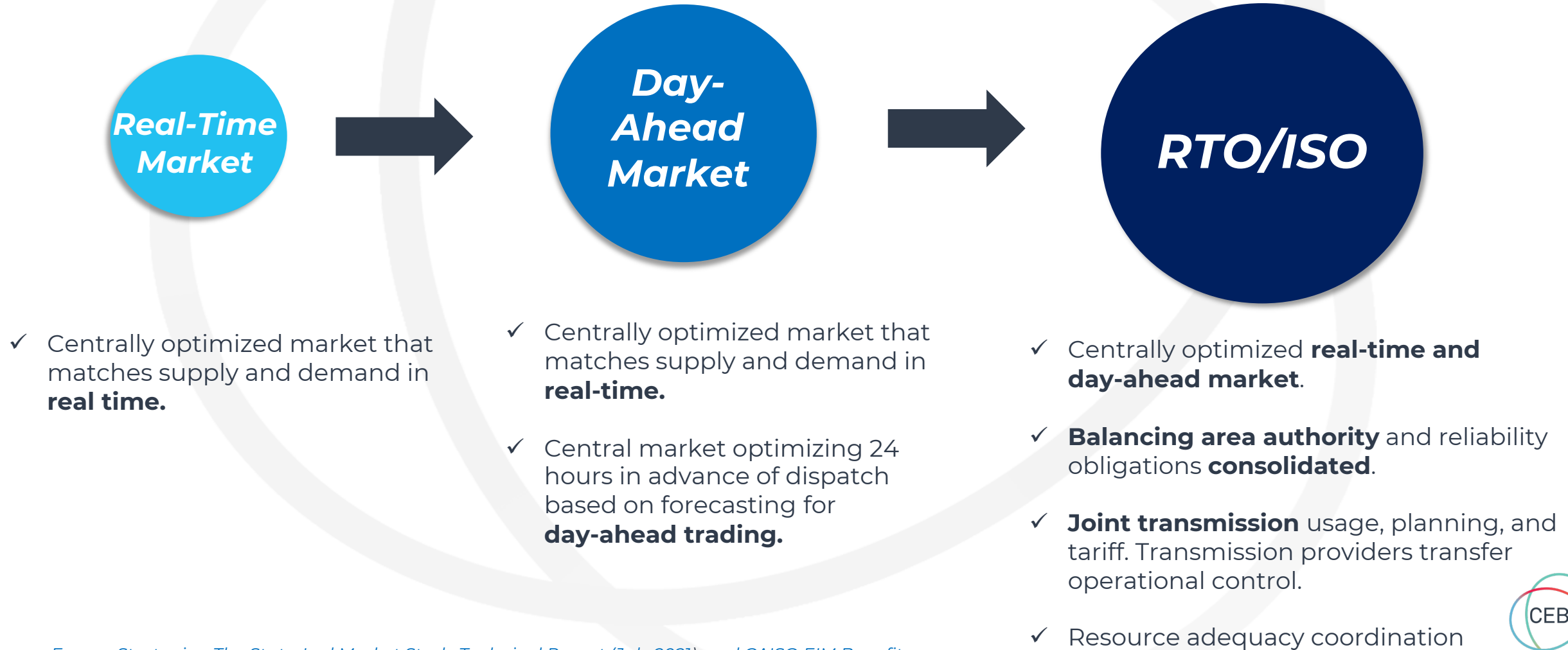
Without organized wholesale markets, coordination and resource sharing is voluntary. Utility planning is siloed.



With organized wholesale markets, power is balanced across multiple utility service territories while dispatching least-cost generation first and ensuring reliability.

THE MOST ADVANCED ORGANIZED WHOLESALE MARKETS ARE OPERATED BY RTOs/ISOs

Regional transmission organizations and independent system operators are nonprofit, independent entities overseen by the Federal Energy Regulatory Commission (FERC). In a full RTO model, these entities manage power balancing and coordinate transmission and resource adequacy.





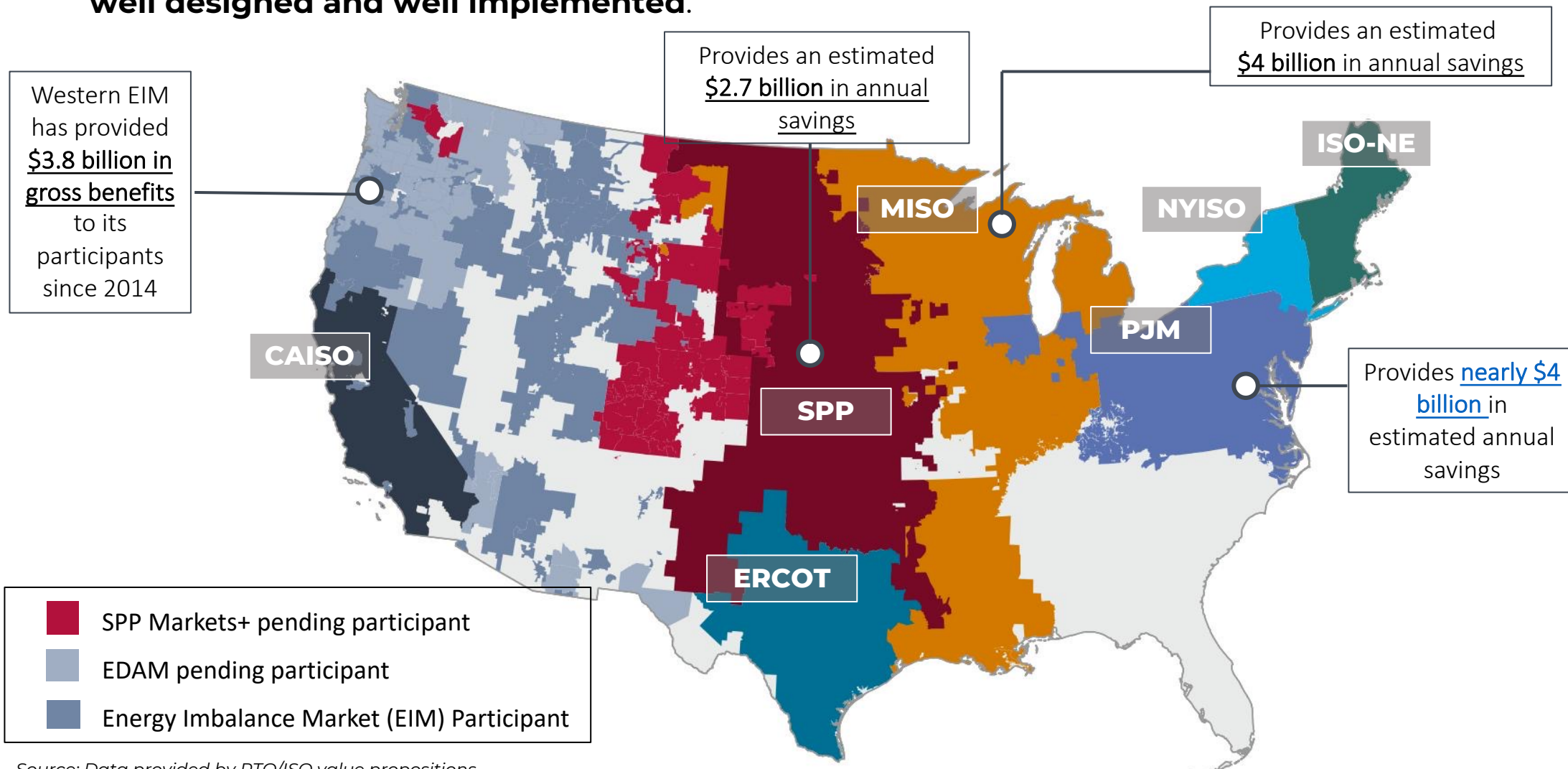
What Benefits Do RTOs/ISOs Provide?





ORGANIZED WHOLESALE MARKETS PROVIDE BILLIONS IN SAVINGS

Day-ahead markets and full RTOs/ISOs provide **significant customer, societal, and environmental benefits** to members that can be maximized when markets are **well designed and well implemented**.



Source: Data provided by RTO/ISO value propositions.



RTOs/ISOs MAXIMIZE COST SAVINGS AND EFFICIENCY

RTOs/ISOs provide significant cost benefits through production costs savings, capacity/investment savings, and resource diversity.



Cost Savings

Studies find participation in an RTO can result in **production cost savings of 3-9%**.



Resource Diversity Savings

Balancing renewable energy over larger geographic areas decreases curtailment. The system maximizes lower cost renewable energy.



Capacity and Investment Savings

Reduced capital investment due to load diversity



Capacity savings from a West-wide RTO make up **65% of \$2 billion** in potential annual benefits by 2030.



Production Cost Savings

- More efficient trade through reduced transmission wheeling
- Optimized unit commitment and dispatch
- Reduced operating and flexibility reserves
- Reduced curtailment



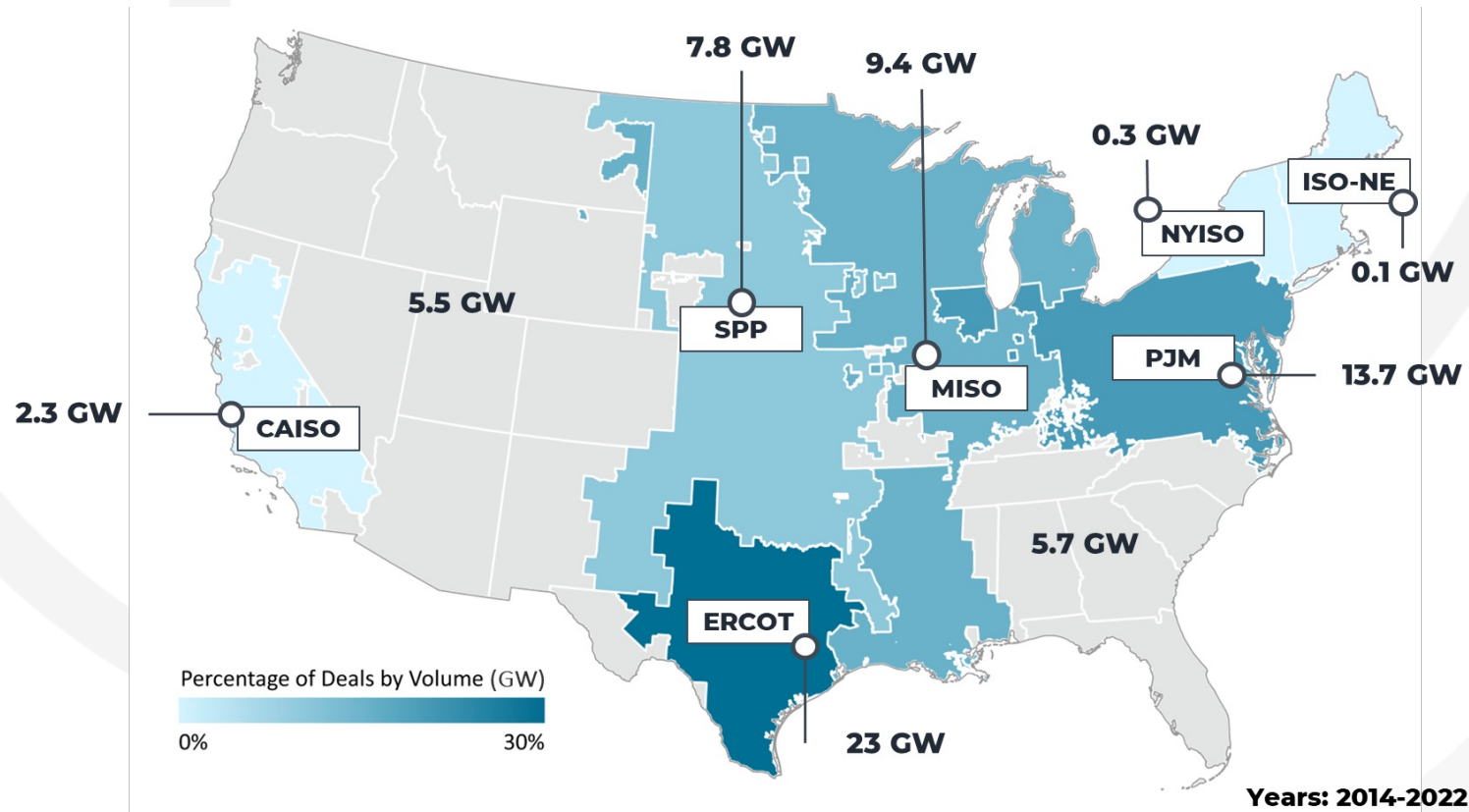
Wind production in MISO has experienced **efficiency gains of ~\$500,000 annually** relative to regulated wind plants.



RTOs/ISOs EXPAND PURCHASING OPTIONS FOR LARGE ENERGY CUSTOMERS

RTOs/ISOs allow customers to support new renewable energy through **virtual power purchase agreements (vPPAs)**. RTOs/ISOs also enable generation competition and greater clean energy integration, which translates to more options to meet customers' preference for clean energy.

Contracted Capacity by ISO/RTO Region*



*Source: CEBA Deal Tracker



RTOs/ISOs CREATE ROBUST CLEAN ENERGY MARKETS AND ENCOURAGE INNOVATIONS

Removing market barriers would allow advanced energy technologies to inject **\$65 billion** into wholesale markets.



RTOs/ISOs are technology-neutral and nondiscriminatory markets that operate through:

- Open access to transmission
- Price transparency
- Level-playing field



RTOs/ISOs spur innovation and new investment in:

- Demand response
- Energy storage
- Energy efficiency



About 73% of large-scale battery storage power capacity is installed in states covered by ISOs or RTOs.



Market innovation goes beyond advanced technology and applies to development of innovative contract structures.



RTOs/ISOs INCREASE RELIABILITY AND REDUCE COSTS

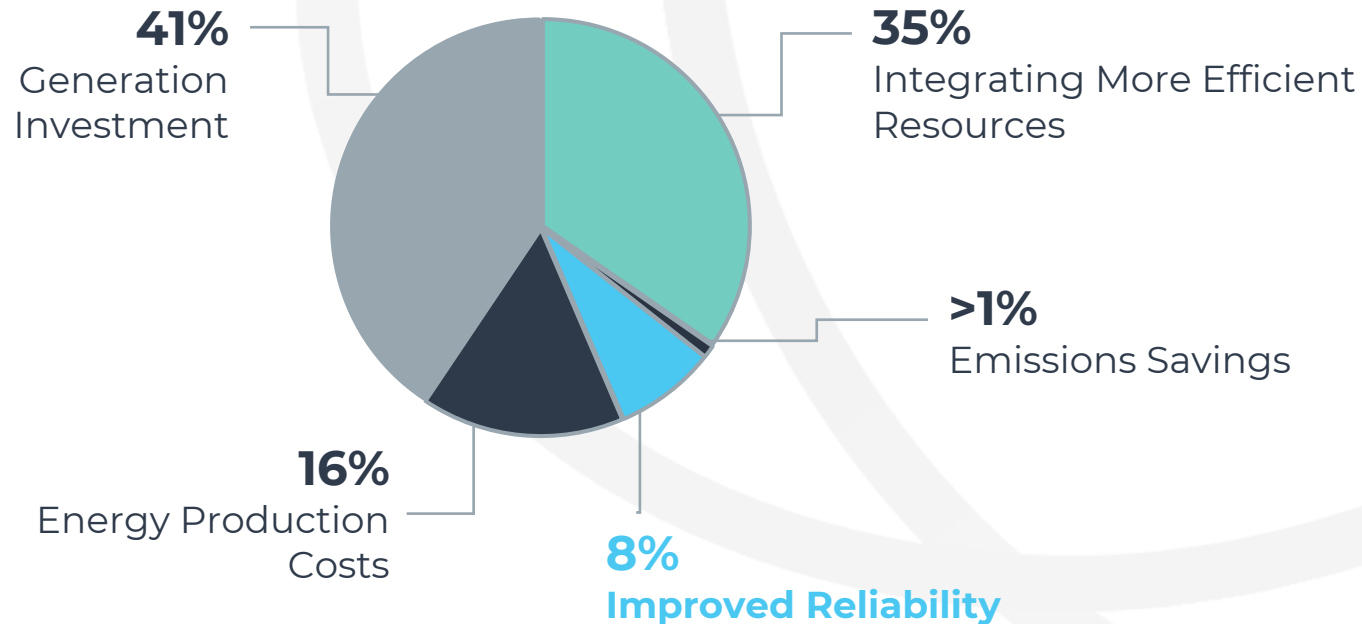
RTOs/ISOs centralize dispatch across regional balancing areas, with control over a more diverse resource mix.

PJM

Up to \$4 billion in annual benefits

- ✓ Larger scale
- ✓ Diversified resources
- ✓ Regional coordination

- ✓ Shared capacity reserves
- ✓ More effective transmission planning



These benefits reduce costs AND enhance reliability.



RTOs/ISOs MARKETS FACILITATE RENEWABLE INTEGRATION

RTOs/ISOs better integrate renewable energy by balancing resources across a wider geographic region.

Balancing Authority Consolidation

1

Reduces renewable integration costs

2

Minimizes renewable energy curtailment

A Western RTO can reduce renewable energy curtailments by **33%** more than a day-ahead market.



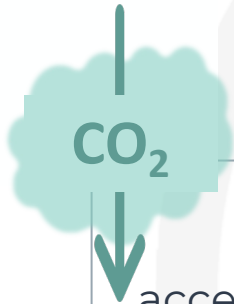
80% of U.S. variable renewable energy installed capacity is in organized wholesale electricity markets.





RTOs/ISOs SPEED EMISSION REDUCTIONS

Emission reductions can be achieved faster and more economically through a centrally optimized market. Markets catalyze clean energy penetration even in regions without 100% clean energy goals.



Organized Wholesale Markets reduce greenhouse gas emissions by accelerating the retirement of uneconomic coal plants and increasing production from installed renewable generation capacity.

An RTO across the West could facilitate an additional reduction in carbon emissions of **3 million tons annually by 2030.**

ERCOT facilitated the CREZ transmission buildout which has added over **18 GW of wind and solar** capacity beyond the Texas 2025 RPS target of 10 GW.



SPP facilitated growth in renewable energy production from

6 GWh in 2008 to 90 GWh in 2019.



Overall carbon dioxide emissions have fallen **21%** since 2014.



RTOs/ISOs PROVIDE GREATER TRANSPARENCY ON MARKET DATA

Access to market data helps energy customers make informed decisions and perform necessary due diligence.

RTOs are required to publicly report on:

Pricing transparency

Uplift payments

Resource commitment decisions

Resource operations

Transmission congestion



Transparency helps energy customers:

Make educated decisions
about their energy needs

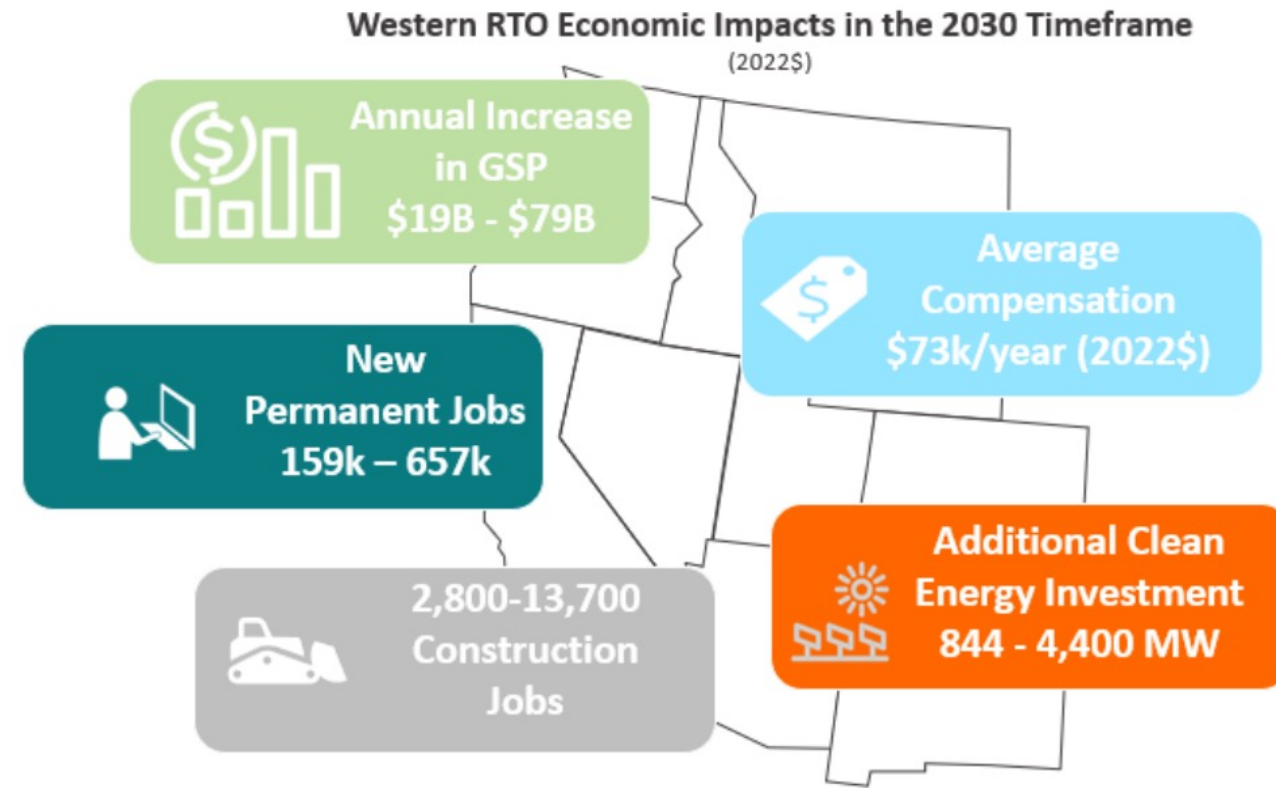
Perform their due diligence
needed to enter long-term power purchase agreement (PPA) commitments of 10 years or more.



RTOs/ISOs DRIVE ECONOMIC DEVELOPMENT

When customers can procure more cost-effective, cleaner energy through a competitive market, it has a ripple effect on the regional economy.

- A Western competitive energy market could generate **\$2.2 billion in annual energy cost savings by 2030**, much more than a day-ahead market alone.
- A Southeastern competitive energy market could generate **\$384 billion in savings** and create at least an additional **285,000 new jobs** by 2040
- The International Energy Administration (IEA) note that clean energy accounts for **virtually all growth in energy employment**.





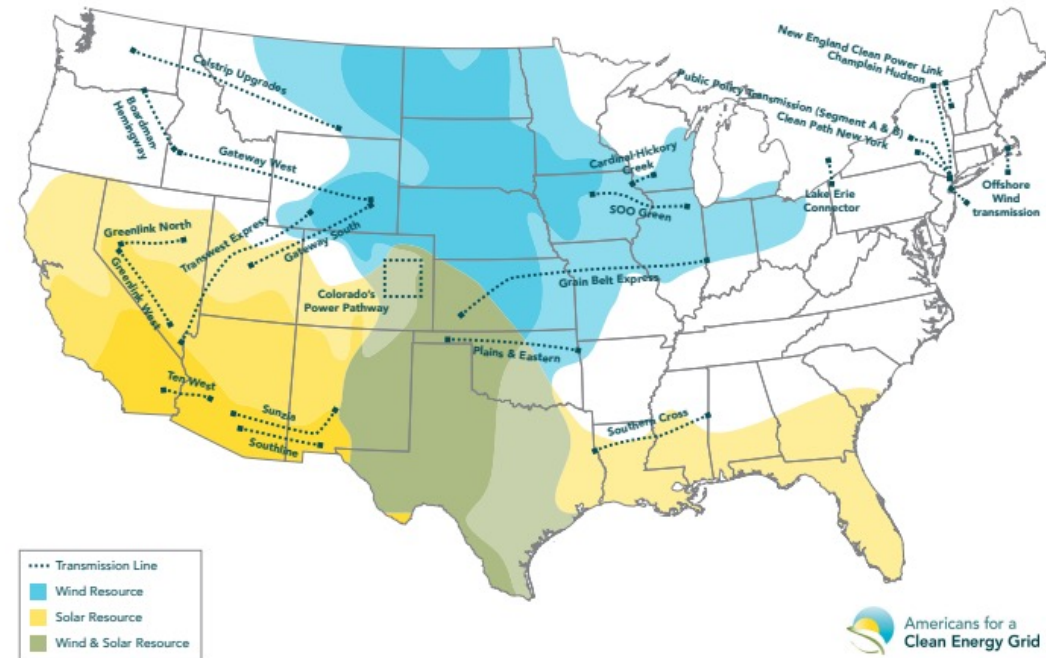
RTOs/ISOs FACILITATE COST-EFFECTIVE TRANSMISSION BUILDOUT

Transmission investment and operation is more **efficient and economic** when managed regionally.

A Western RTO with transmission buildout could drive an additional **\$90 million per year in economic benefits.**

Transmission wheeling costs and pancaking of rates are eliminated for transactions, removing the cost barrier for long-term resource procurement in remote areas.

Figure 1. Map of Proposed Projects



Regional coordinated planning could help unlock several stalled shovel-ready transmission projects.



REGIONAL TRANSMISSION PLANNING DELIVERS BENEFITS

RTOs/ISOs are the most efficient way to synergize transmission service, interconnection, energy markets, resource adequacy, and transmission planning within the same entity.

RTOs/ISOs are uniquely situated for transmission planning.

- All successful regional transmission initiatives so far in this century have resulted from open and transparent regional planning efforts.
- Regional planning is the only way to produce an efficient grid configuration plan that gains support from customers and policymakers.
- When planning entities are independent of any company, they can find solutions that work best for all customers.
- RTOs have robust stakeholder engagement processes and a track record of planning processes that address reliability, market, and policy drivers, in addition to local planning.

[Learn more here](#)

Source: *The Benefits Of New Regional Transmission Planning Entities In The U.S. West And Southeast Regions*

“Customers in two-thirds of the country rely on independent, trusted, expert transmission planners to achieve greater reliability and cost savings. Western and Southeastern customers deserve the same benefits.”

Rob Gramlich
President of Grid Strategies.





“GM believes transmission infrastructure expansion is necessary to reach our and other companies’ and municipalities’ 100% clean electricity goals. Furthermore, organized wholesale markets are an important market mechanism to achieve clean energy targets. GM supports the expansion of RTOs/ISOs in the West to help reliably, rapidly, and cost-effectively decarbonize the grid, and in turn, our operations and our EV customers’ charging.”

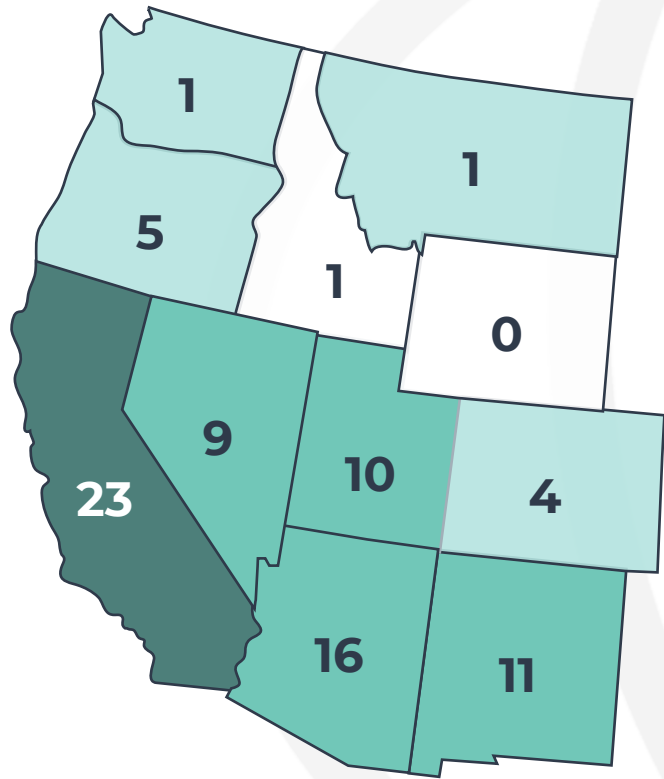
Monica Walker

Renewables and Energy Strategy Manager
General Motors

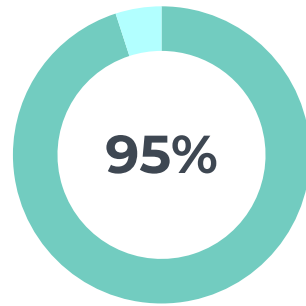


How are Large Energy Customers Supporting Market Expansion?

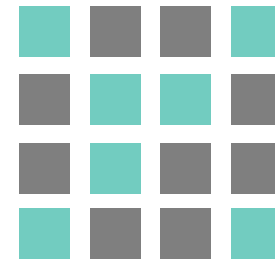
CEBA MEMBERS REPRESENT SIGNIFICANT LOAD IN THE WEST AND CAN INFLUENCE MARKET EXPANSION



Map of aggregate number of corporate renewable energy deals by state in the West (2014- Q1 2023).



CEBA members represent **95%** of corporate renewable energy deals in the West.



Several members are among the **top 20 largest customers** for their utility.



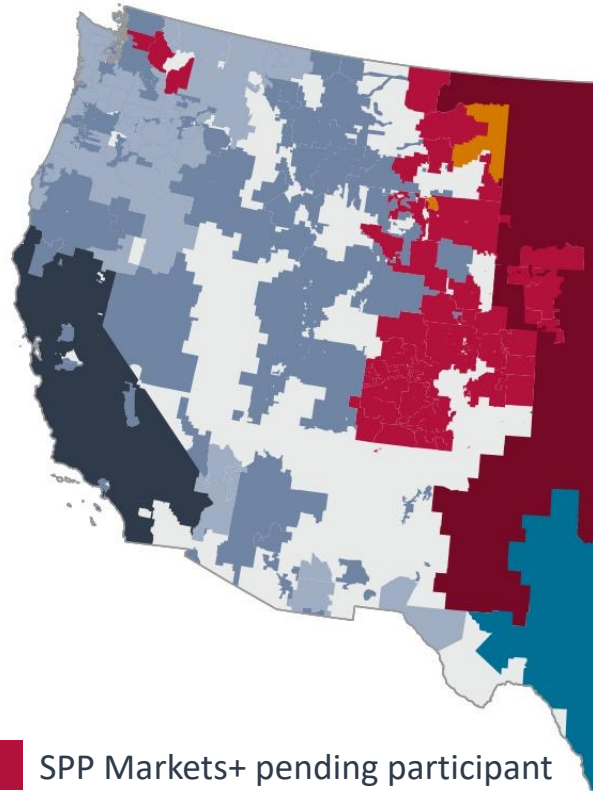
Members have collectively invested in **over 7.7 GW** of renewable energy projects.

EXISTING RTOs/ISOs ARE EXPANDING TO OFFER DAY-AHEAD MARKETS

Additional **WPP** footprint

Non-**WPP** footprint

Current **WRAP** footprint



SPP Markets+ pending participant

EDAM pending participant

Energy Imbalance Market (EIM) participant



CAISO expanded its Western Energy Imbalance Market (WEIM) to include the **Extended Day-ahead Market (EDAM)**.



SPP is replacing its Western Energy Imbalance Service (WEIS) with a new offering called **Markets+** that includes a day-ahead market.



The Western Power Pool (WPP) is creating a stand-alone resource adequacy program called the **Western Resource Adequacy Program (WRAP)**.

Seeking FERC approval in mid-2023

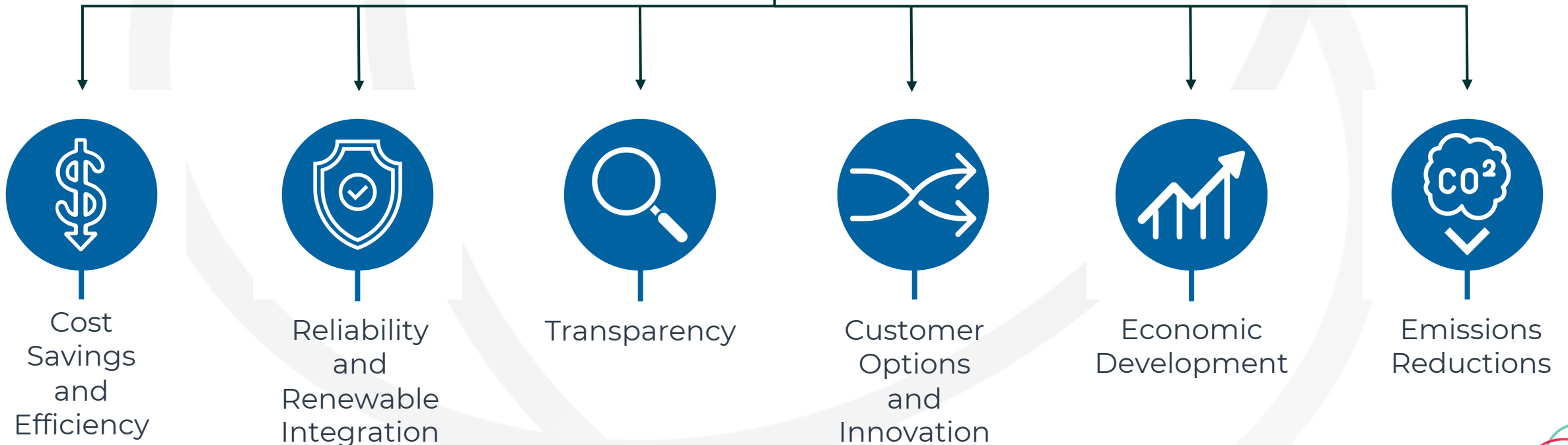
Phase 1 seeking FERC approval in early 2024

Approved and set to take effect in mid-2025.

CEBA MEMBERS SUPPORT A FULL RTO WITH THE LARGEST POSSIBLE FOOTPRINT

Studies show full RTOs/ISOs with large footprints provide greater benefits than other market constructs

Benefits of Organized Wholesale Markets



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“There is an urgent need in the West to realize the benefits that we know flow from well designed and well implemented wholesale electricity markets. We cannot reliably and cost-effectively reach our collective goals without greater market coordination across multiple states.”

Misti Groves

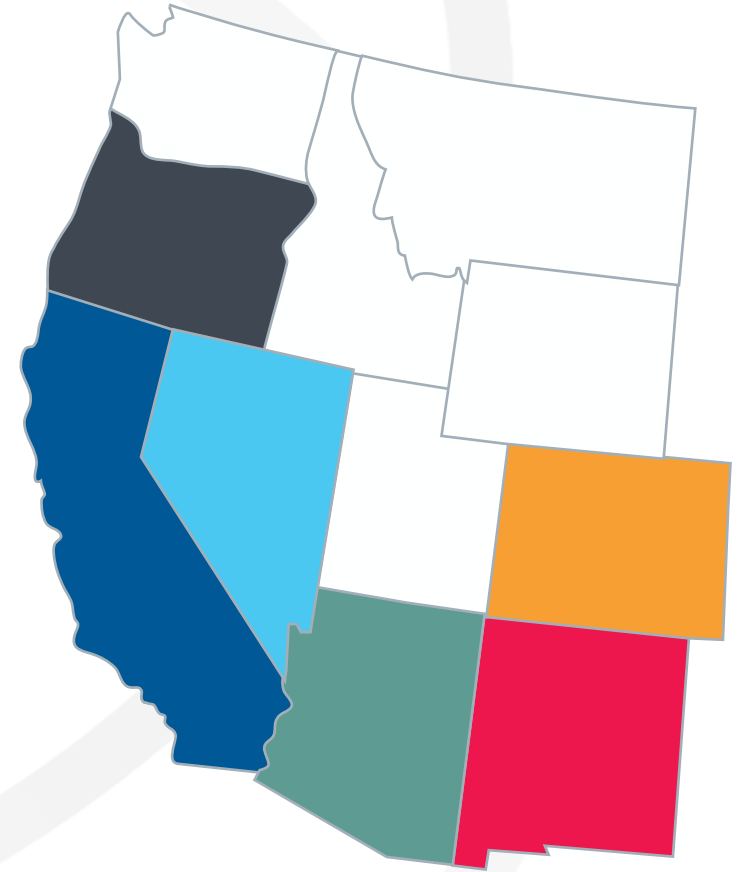
Vice President of Market and Policy Innovation
Clean Energy Buyers Association



How Can States Shape Market Expansion?

STATES HAVE CONTRIBUTED TO THE CURRENT MOMENTUM FOR MARKET EXPANSION

- ARIZONA:** **Market Investigation** Docket (E-00000A-21-0271) has explored many elements of market expansion. In 2023, a new Office of Resiliency could provide a forum for more advanced state engagement.
- CALIFORNIA:** ACR-188 required CAISO to prepare a **review report** of recent studies on regional coordination for the legislature. This study will help lead to CAISO **market reform**.
- COLORADO:** SB21-072 **mandated** that utilities join an RTO by 2030. Colorado's RTO **study** found utilities could realize annual levelized benefits up to 5% of total 2019 revenues. An open docket will lead to rules for PUC approval of markets.
- NEVADA:** SB 448, signed June 2021, **mandated** that utilities join an RTO by 2030. The state has also assembled a **Regional Transmission Coordination Task Force**.
- NEW MEXICO:** Proposed formation of an **RTO Task Force**. The state Public Regulation Commission was reconfigured in 2023 with three new commissioners.
- OREGON:** SB 589 required the state Department of Energy to prepare an **RTO market study**.





STATES ARE SHAPING MARKET GOVERNANCE AND EXAMINING MARKET OPTIONS

With broad agreement on market principles and new funding available to investigate market improvements, there is great opportunity for states to explore further organized market collaboration.



In 2022 Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Washington, and Wyoming signed on to support **multistate principles for market governance**. These principles emphasize board independence, meaningful stakeholder engagement, and access to transparent data.



Up to **\$19 million** of U.S. Department of Energy funding is available to provide **technical assistance to states and regions** to establish and improve centrally organized market components and evaluate wholesale market opportunities.



STATES SHOULD ALSO GUIDE UTILITY DECISIONS

Ultimately, utilities decide which organized wholesale markets they want to participate in. State **public utility commissions**, tasked with protecting consumers, advancing the public interest, and overseeing electric utilities, have a vital role to play in market development and can help utilities make decisions that maximize customer benefits.

Regulators across Western states should exercise three key authorities:

- Retail ratemaking power, particularly prudence review
- Authority over the transfer of control of jurisdictional facilities
- Integrated resource planning



THANK YOU

CEBA and its members support the expansion of organized wholesale markets and customer-driven clean energy for all. Please contact us for more information.



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