

ARGUMENT FOR REGIONALIZING ENERGY MARKETS IN THE WEST

SUMMARIES | ANALYSIS | IMPACTS | RECOMMENDATIONS

This policy analysis argues that an Independent System Operator (ISO) or a Regional Transmission Operator (RTO) in the western United States would assist the integration of renewables. The failure of AB 813 is not consistent with the findings from the studies mandated by SB 350 that outline the benefits and disadvantages of a regionally organized market.

Regionally Organized Electricity Markets

are facilitated by Regional Transmission Operators (RTOs) or Independent System Operators (ISOs) that deliver reliable electricity through organized competitive markets

SB 350 (2015) Summary

This Californian bill

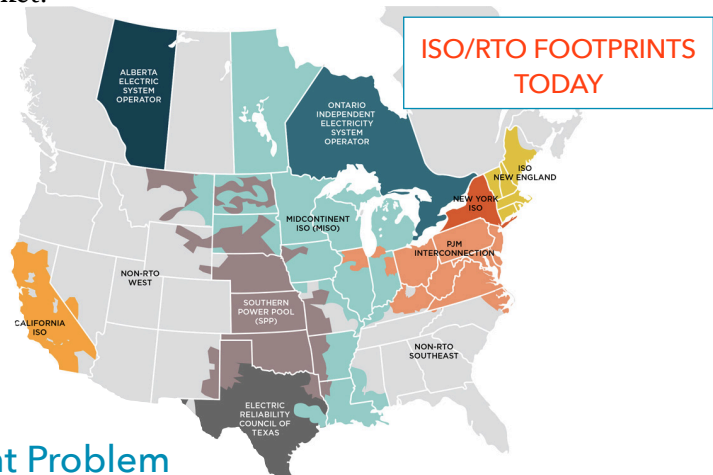
- Increased the RPS percentage to 50% by 2030,
- Prohibits CAISO from becoming a multi-state entity, however
- Demanded for CAISO to study the effects of a regionally organized market, also called a Western ISO.
- Several reports were published outlining how a Western ISO benefits out way the disadvantages to Californian ratepayers

AB 813 (2018) Summary

This bill died in committee.

However, it would enable the CAISO to become a multi-state regional market. AB 813, failed for several reasons related to governance:

- Californian parties did not want to give up control of the CAISO
- Governor would no longer be able to select the individuals on the CAISO board
- It might shift renewable energy jobs out of state



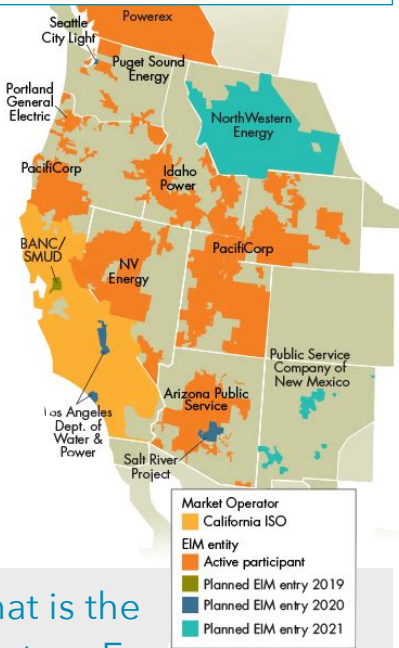
Current Problem

Currently there are 38 utilities in the western US that operate their own transmission systems. Instead of one regionally organized electricity operator, known as an ISO or a RTO, that manages all wholesale electricity trading on high voltage transmission, these utilities act alone. The lack of a regionally organized market is uncommon in North America, as depicted in the map above by the light gray coloring in the west. Energy demand must equal energy generation 24/7. The fragmentation of transmission creates a problematic barrier that inhibits the efficient exchange of electricity in real-time. Renewables pose a unique challenge because their generation is subject to fluctuating weather patterns.

The integration of renewables into the grid requires other generators other generators to provide power when renewable energy is not available. However, utilities outside of a regional market have to submit hour-by-hour schedules for all generators. Since renewable generation can change by the minute, utilities often struggle with this schedule. A regional market would enable schedules to change on a more flexible basis (15 minute schedules). A regionally organized western market (also called a Western ISO), which AB 813 sought to allow, would unite the the operation of utilities transmission across the west into one and forge a more unified market that enhances western coordination.



MAP OF THE WESTERN ENERGY IMBALANCE MARKET



What is the Western Energy Imbalance Market (EIM)

The EIM is a voluntary real-time wholesale trading market where utilities must still meet balancing requirements each hour, however, the EIM automatically dispatches the lowest cost energy source within the entire EIM to meet demand every 5 and 15 minutes. Prior to the EIM, utilities in the west could only trade in one hour increments which is difficult when there are resources, like wind and solar, that have inherent fluctuations in generation. This

- Reduces power production costs,
- Lowers transaction costs, and
- Significantly assists the integration of intermittent renewable generators.

References

Brint, Juliana. 2017. *Enhanced Western Grid Integration: A Legal and Policy Analysis of the Effects on California's Clean Energy Laws*. Report. EPC, Yale.

Paulos, Bentham. 2018. *A REGIONAL POWER MARKET FOR THE WEST Risks and Benefits*. Report. Next 10.

The Brattle Group. 2016. *Senate Bill 350 Study The Impacts of a Regional ISO-Operated Power Market on California*. Report.

What a Regionally Organized Electricity Market Means for Renewables

Regionally organized markets increase flexibility of the electrical grid in three ways: 1.) It reduces electricity transaction costs compared to the existing transactions that occur outside of ISOs or RTOs; 2.) creates more opportunities for operators to optimize their generators in new ways within a regionally organized electricity market; And 3.) it is also a way to **cost effectively, reliably integrate** and **support large quantities of renewables** as they connect to the grid as Renewable Portfolio Standards (RPS) demand.

Impacts of a Western Regionalized Market

Regionally organized markets, ISOs and RTOs, have functional roles which support the integration of renewables. They provide price transparency, real-time data, 15 minute dispatch intervals, and regional transmission planning. Studies conducted from SB 350 determined the benefits of a regionally organized market in the west. The studies found that

- Shared transmission operations in a Western ISO can **reduce operational expenses**, as displayed by the CAISO's EIM that has already generated \$330 million in benefits (Paulos 2018)
- Assuming full participation in a Western ISO, annual net benefit for California ratepayers would range from **\$1 billion to \$1.5 billion** by 2030 (The Brattle Group 2016)
- A Western ISO **increases the efficiency** of investments in renewable energy generation, including investments in new wind and solar resources to meet California's RPS (The Brattle Group 2016)
- A Western ISO would **reduce renewable energy curtailment** and allow more renewable energy resources on the grid, reducing emissions (Brint 2017)

Recommendations

There are many ways to increase the percentage of renewables on the electrical grid to reduce carbon emissions. One way to reliably integrate renewables in the west cost effectively is through the creation of a regionally organized market. This could be accomplished through permitting the California ISO to expand into other states. That would require a bill, similar to AB 813, to be proposed in the California State Legislature and signed into law. This one method would make it possible for states in the west to efficiently achieve their Renewable Portfolio Standards.

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