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

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 the California ISO (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 (light gray coloring depicts lack of organized market). Energy demand must equal energy generation 24/7. Therefore, the fragmentation of transmission creates a barrier that inhibits the efficient exchange of electricity in real-time. Renewables pose a unique challenge because they have inherent fluctuations in their generation. Integrating renewables into the grid requires other generators to compensate for the fluctuations of renewable generators.

However, utilities outside of a regional market have to submit hour-by-hour schedules for all generators. Since renewable generation continuously fluctuates, utilities often struggle with the duration of this schedule requirement. Therefore, there was an effort proposed by AB 813 to allow the CAISO to operate in other states, creating a regionally organized western market (also called a Western ISO). This would have expanded the CAISO into the Western ISO, consolidating all utility transmission across the West into one market. No longer would the ISO’s focus be solely on California. Now, a unified market focusing on the totality of Western utilities would exist.
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


What a Regionally Organized Electricity Market Means for Renewables

A regionally organized market in the west would threaten the integration of renewables in California in three ways: 1.) CAISO would turn into a Western ISO, operating in several states. Therefore, a regionally organized market would no longer have to directly incorporate Californian state policies; 2.) A Western ISO would prioritize the needs and reliability of the entire region rather than solely focusing on California’s progressive clean energy incentives; And 3.) A regional market could increase generation from coal plants outside of California, consequently increasing carbon emissions.

Impacts of a Western Regionalized Market

Regionally organized markets, ISOs and RTOs, have functional roles that support the integration of renewables. However, CAISO has already developed the EIM and its primary purpose is to assist the integration of renewables onto the grid. Studies conducted from SB 350 analyzed the disadvantages of a regionally organized market in the west. The studies found that:

- A Western ISO would allow out-of-state renewable generation to contribute to California’s RPS requirements. This could incentivize new renewable energy projects to be developed out-of-state, consequently leading to job loss in California (The Brattle Group 2016)
- A Western ISO would address challenges of the entire region it oversees, rather than solely focusing on California’s challenges and goals. This could hinder the effectiveness of California’s clean energy policies, and expose California to policies implemented by other states that may not be promoting renewable energy (Paulos 2018)
- There are other ways to integrate renewables reliably while protecting and prioritizing California’s clean energy policies and goals. This could be achieved through energy storage systems, demand response programs, and electric vehicles (Paulos 2018)

Recommendations

There are many ways to increase the percentage of renewables on the electrical grid while maintaining reliability. Therefore, it is not necessary to create a Western ISO that could potentially jeopardize California’s clean energy policies that aim to reduce carbon emissions.