SENATE COMMITTEE ON ENERGY, UTILITIES AND COMMUNICATIONS
Senator Josh Becker, Chair
2025 - 2026 Regular

Bill No:	SB 540	**Hearing Date:**	4/21/2025
Author:	Becker		
Version:	3/24/2025 Amended		
Urgency:	No	**Fiscal:**	Yes
Consultant:	Nidia Bautista		

SUBJECT: Independent System Operator: independent regional organization

DIGEST: This bill authorizes the California Independent System Operator (CAISO) and the electrical corporations whose transmission is operated by the CAISO to use voluntary energy markets governed by an independent regional organization (RO), in lieu of the CAISO managing related energy markets.

ANALYSIS:

Existing law:

1) Establishes that U.S. Federal Energy Regulatory Commission (FERC) has exclusive jurisdiction over the transmission of electric energy in interstate commerce. Establishes the process and procedures for establishing transmission of electric energy in interstate commerce by public utilities, i.e., the rates, terms, and conditions of interstate electric transmission by public utilities, including requiring all rates and charges to be just and reasonable. Establishes that FERC has exclusive jurisdiction over sales of electric energy at wholesale in interstate commerce by public utilities, i.e., the rates, terms, and conditions of wholesale electric sales by public utilities. (Federal Power Act §§§201, 205, 206 (16 USC 824, 824d, 824e)

2) Establishes and vests the California Public Utilities Commission (CPUC) with regulatory authority over public utilities, including electrical corporations. (Article XII of the California Constitution)

3) Provides for the restructuring of the electricity industry and creates several entities: the Electricity Oversight Board (defunct), the Power Exchange (defunct) and the CAISO. (Public Utilities Code §335 and 336)

4) Establishes the CAISO governing board with five members appointed for three-year terms by the Governor and subject to confirmation by the Senate. (Public Utilities Code §337)

5) Requires the CAISO to ensure efficient use and reliable operation of the transmission grid consistent with achievement of planning and operating reserve criteria no less stringent than those established by the Western Electricity Coordinating Council (WECC) and the North American Electric Reliability Corporation (NERC). (Public Utilities Code §345)

6) Requires the CAISO, as a nonprofit, public benefit corporation, to conduct its operations consistent with applicable state and federal laws and consistent with the interests of the people of the state. Requires the CAISO to manage the transmission grid and related energy markets in a manner that is consistent with: making the most efficient use of available energy resources, reducing overall economic cost to the state's consumers, applicable state law to protect the public's health and the environment, maximizing availability of existing electric generation resources necessary to meet the needs of the state's electricity consumers, conducting internal operations in a manner that minimizes cost impact on ratepayers, and communicating with all balancing area authorities in California to support electrical reliability. Requires the CAISO to consult with, and coordinate with, state and local agencies to ensure it is operating in furtherance of state law regarding consumer and environmental protection. (Public Utilities Code §345.5)

7) Expresses the intent of the Legislature that the CAISO transform into a RO to promote the development of regional electricity transmission markets in the western states and to improve the access of consumers served by CAISO to those markets, only when such transformation is in the best interest of California ratepayers. Requires that the transformation of the CAISO to not alter its obligations to the state or to electricity consumers within the state or its obligation to comply with state laws. Requires the CAISO to retain its obligations set forth in Public Utilities Code §345.5. Requires the transformation of the CAISO into a RO, with the approval of the Legislature, pursuant to a specified process. That process provides that modifications to the CAISO's governance structure, through changes to its bylaws or other corporate governance documents, will not become effective until the CAISO, the CPUC, the State Energy Resources Conservation and Development Commission (California Energy Commission (CEC)), the California Air Resources Board (CARB), the Governor, and the Legislature take specified actions on or before January 1, 2019. (Public Utilities Code §359.5)

8) Establishes the renewable portfolio standard (RPS) which requires the CPUC to establish a RPS requiring all retail sellers to procure a minimum quantity of electricity products from eligible renewable energy resources as a specified percentage of total kilowatt hours sold to their customers (60% by 2030) and

specifies portfolio content categories that must be satisfied for each compliance period with an increasing majority from renewable energy resources that have a first point of interconnection with a California balancing authority (BA) – this is known as "bucket 1" resources. (Public Utilities Code §§399.15 and 399.16)

9) Establishes the policy of the state that eligible renewable energy resources and zero-carbon resources supply 90% of all retail sales of electricity to California end-use customers by December 31, 2035, 95% of all retail sales of electricity to California end-use customers by December 31, 2040, 100% of all retail sales of electricity to California end-use customers by December 31, 2045. Requires the CPUC and CEC, in consultation with CARB, to take steps to ensure that a transition to a zero-carbon electric system for the state does not cause or contribute to greenhouse gas (GHG) emissions increases elsewhere in the western grid. (Public Utilities Code §454.53)

This bill:

1) Authorizes the CAISO and the electrical corporations whose transmission systems are operated by the CAISO, in lieu of the CAISO managing related energy markets conducting its operations consistent with applicable state and federal laws and consistent with the interests of the people of the state, to use voluntary energy markets governed by an independent RO, provided that specified requirements are satisfied, including the independent RO:

    a) Is a nonprofit corporation whose governance document include a corporate obligation to respect the authority of each state to set its own procurement, environmental, reliability, and other public interest policies.
    b) Maintains a public policy committee of their governing board that engages with states, local power authorities, and federal power marketing before it approves a tariff change for filing at the FERC.
    c) Maintains a relationship with and seeks input from a body of state regulators to receive the views of state regulators.
    d) Makes funding available for a consumer advocate organization.
    e) Maintains access to independent market analysis to minimize overall costs to end-use customers.
    f) The CAISO continues to operate the energy markets, subject to market rules determined by the independent RO as accepted by FERC.
    g) Has market rules that continue to provide GHG emissions information and protocols sufficient to enable entities subject to CARB's rules to demonstrate compliance.
    h) Provides a procedure for unilateral withdrawal by any participant.

2) Authorizes the CAISO, on or after January 1, 2027, to implement tariff modifications accepted by the FERC to operate the energy markets whose rules are governed by an independent RO if the governing board of the CAISO adopts a resolution finding that each of the specified conditions above have been, or will be, adopted by the independent RO. Authorizes the CAISO to adopt the resolution including the meeting is open to the public and the CAISO issues a notice of the meeting not less than 90 days before the meeting, among other requirements.

3) Requires the CAISO to maintain the necessary technical capability to operate energy markets in a manner that enables California electrical corporations, local publicly owned electric utilities, and other applicable market participants to withdraw from the markets governed by the independent RO and instead the CAISO would provide separate market services for those entities.

4) Requires the CAISO to continue its functions and responsibilities as a BA and maintain compliance with applicable reliability standards as enforced by the NERC, WECC, or FERC.

5) Prohibits the CAISO from changing its BA area as it existed December 31, 2024, except in specified circumstances, including combining with California BAs.

6) Provides, except with respect to managing energy markets, there is no change to the CAISO's responsibilities relative to the requirements of Public Utilities Code §345.5, including managing the transmission grid, planning for transmission expansion, and complying with requirements related to its memorandum of understanding with the CPUC and CEC.

7) Provides there is no change to any requirement related to the state's RPS and the policy of the state to reach specified targets for zero-carbon and renewable energy resources, including 100% zero-carbon and renewable energy resources by 2045.

8) Authorizes the CAISO to act as a vendor, through a contract with the independent RO, of specified services, including: market operation, generation dispatch, transmission operation, reliability coordination, BA compliance or operation, or other electrical system services.

9) Deletes provisions providing for the transformation of the Independent System Operators (ISO) into a RO. (Public Utilities Code §§359, 359.5, and (f) of §337,)

10) Deletes requirements of the Power Exchange to provide an efficient competitive auction. (Public Utilities Code §355)

Background

About the U.S. power grid. Electricity supplied by power plants moves through a complex network of electricity substations, power lines, and distribution transformers before it reaches customers. The electric grid consists of the bulk power systems, high-voltage transmission equipment, and the distribution system (which are generally lower voltages). North America is comprised of two major and three minor alternating current grids or "interconnection," which operate largely independently from each other with limited transfers of power between them. Within each interconnection are multiple BAs that ensure electricity grid stability by maintaining a balance between electricity production (supply) and consumption (demand).

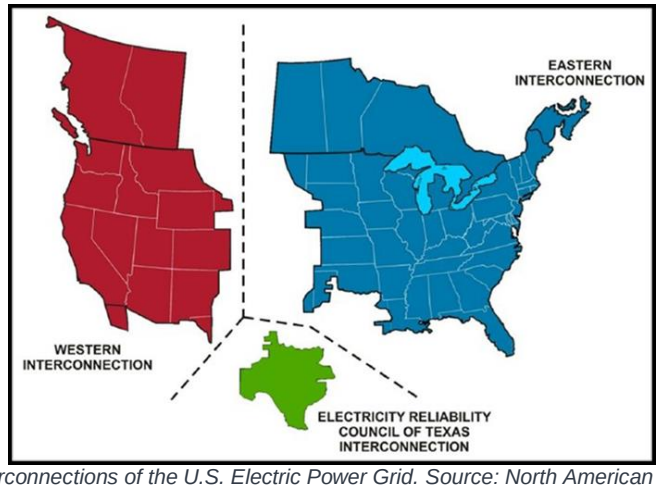

Figure 1. The Three Major Interconnections of the U.S. Electric Power Grid. Source: North American Electric Reliability Corporation.

Many entities interface to ensure bulk power system reliability:

- FERC is an independent federal agency that regulates the transmission of electricity, natural gas, and oil in the U.S. FERC has the power to enforce mandatory electricity reliability standards and assess penalties on violations of those standards. FERC also oversees the regulation of wholesale electricity markets and reviews electricity transmission rate cases to ensure costs are just and reasonable. Pursuant to the Federal Power Act, FERC has exclusive authority over regulation of interstate transmission and wholesale electricity markets.

- NERC is a not-for-profit international regulatory authority whose mission is to assure the reliability and security of the bulk power system in North America. FERC monitors, reviews, and supervises NERC.

- Regional Entities have responsibility delegated by NERC for assuring bulk power system reliability in their respective footprints. WECC is the Regional Entity responsible for the bulk power system reliability of the Western Interconnection.

- Reliability Coordinators (RC) monitor the grid in real-time and interact with individual operators and other RCs to maintain reliable operations. The CAISO serves as the RC, via RC West services, for much of the Western Interconnection (specifically, 25 BAs and 39 transmission operators).

- BAs are responsible for maintaining load-generation balance within their footprint.

- ISO and Regional Transmission Operators (RTO) coordinate, control and monitor portions of the electric grid. ISOs and RTOs may also operate wholesale electricity markets.

About the Western Interconnect. The Western Interconnection the area from the Rockies west, stretching north into Canada, south to Baja California in Mexico, and west to the Pacific Ocean, and consists of 38 BAs, including the BA operated by the CAISO and four additional BAs in California. There are 38 separate BAs operating across the interconnected western United States (known as the Western Interconnect which is managed by the WECC), (as shown below). All the electric utilities in the Western Interconnection are electrically tied together during normal system conditions and operate at a synchronized frequency of 60 hertz (Hz). Among the 38 BAs within the Western Interconnection are those serving California, namely: the CAISO (which serves roughly 35% of the load in the WECC), Balancing Authority of Northern California (BANC), Los Angeles Department of Water and Power (LADWP), Turlock Irrigation District (TID) and Imperial Irrigation District (IID), as well as, several outside California. According to the WECC, the generation capacity of the Western Interconnection makes up approximately 20% of all capacity in the United States and Canada.

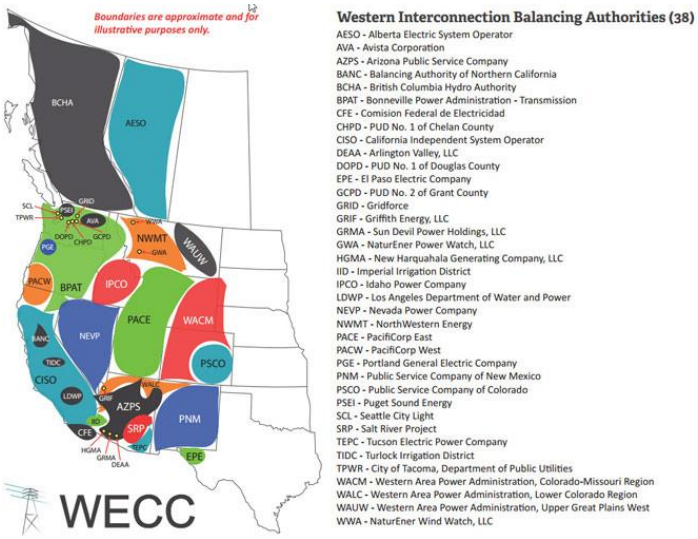

Figure 2. WECC BAs. Source: WECC.

About BAs. The actual operation of the electric system is managed by entities called BAs. A "balancing authority" is an entity responsible for managing the transmission of high-voltage electricity across long-distance transmission lines. BAs must operate at a synchronized frequency of 60 Hz. The BA ensures in real-time that power system demand and supply are balanced. If demand and supply fall out of balance, the result can be local or wide-area blackouts. BAs also must manage transfers of electricity with other BAs. The NERC issues mandatory reliability standards which are approved by the FERC and mandated on BAs. Most BAs are electric utilities that have taken on the balancing responsibilities for a specific portion of the power system.

RTOs/ISOs. RTOs and ISOs operate a region's electricity grid, administer the region's wholesale electricity markets, and provide reliability planning for the region's bulk electricity system. RTOs/ISOs are independent, membership-based, non-profit organizations that ensure reliability and optimize supply and demand bids for wholesale electric power. All of the RTOs/ISOs in the United States also function as BAs. Seven RTOs/ISOs operate bulk electric power systems across much, but not all, of North America. ISOs grew out of FERC orders (Orders 888/889) which suggested ISOs as a concept to satisfy the requirement of providing non-discriminatory access to transmission. Subsequently, RTOs developed in the 1990s to accommodate the FERC policy to encourage competitive generation through requiring open access to transmission (FERC Order 2000). RTOs dispatch power by feeding both day-ahead and real-time bids from both generators and load-serving entities (LSE) into complex optimization software.

RTOs and ISOs are often compared to air traffic controllers because they manage the electron traffic on a power grid they do not own, as traffic controllers manage airplanes landing and taking off on airport runways. RTOs and ISOs use bid-based

markets to determine economic dispatch of electricity resources. Roughly, two-thirds of the nation's electricity load is served in RTO/ISO regions. RTOs have diverse types of members, including: independent generators, transmission companies, LSE, integrated utilities that combine generation, transmission and distributions functions, and power marketers and energy traders. Each of the RTOs and ISOs have energy and ancillary service markets in which buyers and sellers could bid for, or offer, generation.

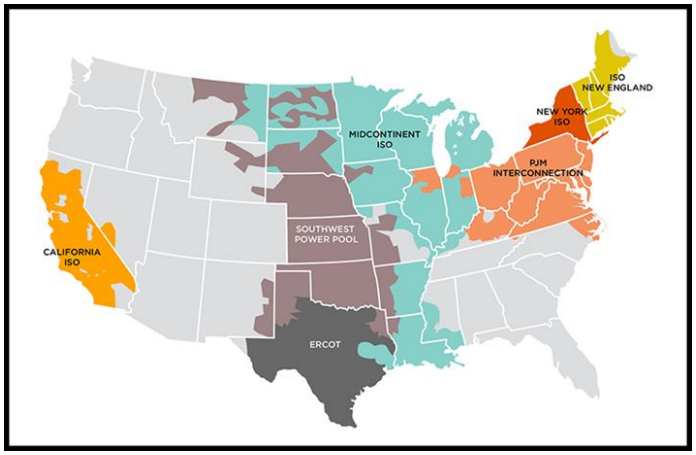

Figure 3. Seven RTO and ISO Regions in the Continental United States. Source: FERC.

About the CAISO. The CAISO is a nonprofit public benefit corporation that was created by California statute as part of the effort to deregulate and restructure the electricity market in the late 1990s. The CAISO manages the flow of electricity across the high-voltage bulk power system that makes up 80% of California's and a small part of Nevada's electric grid. CAISO is registered as both a transmission operator and BA under the NERC reliability functional model. As with other BAs, the CAISO is FERC and NERC regulated. The CAISO is an ISO overseeing the transmission, reliability, and energy market operations. Unlike other RTO/ISOs, the CAISO governing board members are appointed by the Governor and require confirmation by the State Senate.

CAISO Western Energy Imbalance Market (WEIM). As part of its management of the wholesale electricity market, the CAISO also operates a voluntary WEIM which was established in 2014. The WEIM is a real-time bulk power trading market involving 22 participants across 10 western states (representing 79% of the load of the Western Interconnection) that trade the difference between the day-ahead forecast of power and the actual amount of energy needed to meet demand in each hour. Energy trade in the WEIM is limited and intermittent. Currently, the WEIM handles generation that a participating LSE considers surplus at the last minute.

Energy Day Ahead Market (EDAM). In addition to the WEIM, the CAISO is launching a voluntary EDAM in 2026 with the participation of PacifiCorp and Portland General Electric and additional participants, including LADWP and BANC, committed to join in 2027. The EDAM is designed to deliver additional benefits to those realized in the WEIM through greater reliability coordination and resource optimization. The EDAM design was jointly approved in February 2023, and the associated tariff has been approved by the FERC. These tariff provisions aim to improve renewable integration and market efficiency through day-ahead scheduling and unit commitment across a larger area for expanded regional activity in the extended day ahead market that may not require governance changes of the CAISO. The expanded market is intended to increase reliability from greater situational awareness and allow participants to share surplus renewable energy across a broad Western footprint.

Efforts to expand CAISO operations across the West. After multiple unsuccessful Legislative efforts to regionalize the RTO authority of the CAISO[1], including making the governance independent from California authority, in July 2023, a group of regulators, including CPUC President Reynolds and CEC Vice Chair Gunda, along with regulators from Arizona, New Mexico, Oregon, and Washington called for a viable path to electricity market inclusive of all Western states, including California, with independent governance.[2] The regulators' call came in the form of a letter addressed to the Committee on Regional Electric Power Cooperation (CREPC)[3] and the Western Interstate Energy Board (WEIM)[4] whereby regulators expressed a common commitment in seeking the benefits of an expanded regional energy market and encouraged stakeholders to participate in the effort and shape the approach.

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[1] AB 538 (Holden) of 2023, which was held by the author in the Assembly Appropriations Committee; AB 813 (Holden) of 2018 was held in the Senate Committee on Appropriations; and AB 726 (Holden) of 2017 was held by the Senate Rules Committee.

[2] https://www.westernenergyboard.org/wp-content/uploads/Letter-to-CREPC-WIEB-Regulators-Call-for-West-Wide-Market-Solution-7-14-23-1.pdf

[3] The Committee on Regional Electric Power Cooperation (CREPC) was established in 1982 and is a joint committee of the Western Interstate Energy Board (WEIB) and the Western Conference of Public Service Commissioners (WCPSC). CREPC is composed of an energy office official and a regulatory utility commissioner from each of the Western states and Canadian provinces and focuses on electric power system policy issues that require regional cooperation in the West. In November 2022, WIEB and WCPSC adopted a charter articulating the scope, role, and membership of CREPC. https://www.westernenergyboard.org/committee-on-regional-electric-power-cooperation/

[4] The Western Interstate Energy Board (WIEB) is an organization of 11 Western States and two western Canadian Provinces. WIEB's legal basis is the Western Interstate Nuclear Compact (Public Law 91-461). The governor of each state and the premier of each province appoints a member to the Board. The Compact provides for the President of the U.S. to appoint an ex-officio member to the WIEB. The Compact states the purpose of the WIEB is to provide the instruments and framework for cooperative state efforts to "enhance the economy of the West and contribute to the well-being of the region's people." https://www.westernenergyboard.org/western-interstate-energy-board/

About the Pathways Initiative. In the roughly year and a half since the effort was initiated by the regulators' letter, a stakeholder driven process has culminated in broad support among diverse parties – including environmental, labor, local publicly owned utilities (POUs), community choice aggregators (CCAs), and others – for what is referred to as the *West-Wide Governance Pathways Initiative (Pathways Initiative)*. The Pathways Initiative is an effort led by a group of stakeholders[5] from the eleven Western states in the Western Interconnection (Arizona, California, Colorado, Idaho, Montana, New Mexico, Nevada, Oregon, Utah, Washington, and Wyoming) with the goal of creating a new entity with independent governance capable of offering an expansive suite of West-Wide, voluntary wholesale electricity market functions across the largest possible footprint. Unlike previous attempts which sought to authorize the expansion of the main electric grid and all the functions operated by the CAISO (including making its governance independent of California authority) as an RTO, the Pathways Initiative has proposed an expansion and independence of the energy market functions of the CAISO, preserving the other functions (including transmission, reliability, BA, etc.). Specifically, the Pathways Initiative has proposed the development of a new independent RO to oversee the energy markets functions of the CAISO. The Pathways Initiative has developed a proposal that encompasses 3 Steps (Step 1, Step 2, and Step 3).

- **Step 1:** This step demonstrated early commitment to the regulators' vision of independent governance by elevating the authority of the Western Energy Market (WEM) Governing Body (GB) from joint authority with the CAISO Board of Governors (BoG) to primary authority over the WEIM and the EDAM. These substantive changes in decision-making authority can occur within the scope of existing law, but require changes to the CAISO By-laws to modify the dispute resolution that would now authorize joint Federal Power Act Section 205[6] filings by the CAISO BoG and the WEM GB at the FERC. The joint bodies met again on November 7, 2024, and approved the next legal step for implementation.

[5] Pathways-Initiative-Launch-Committee-Roster_Nov-17-2023.pdf

[6] Section 205 is the key provision of the Federal Power Act under which "public utilities" (generally, jurisdictional transmission owners, independent system operators, and regional transmission organizations), make filings at FERC seeking approval of organized wholesale market rules and related services. Any party may file a protest to a public utility filing under Section 206 of the Federal Power Act. The standard of review by FERC for filings under Section 205 (and therefore the legal burden borne by the filer) is a demonstration that the filing is just and reasonable. In contrast, the standard of review by FERC for Section 206 filings is substantially higher—the protestant must establish that an applicable tariff provision is unjust and unreasonable, before ever reaching the question of whether a potential alternative is itself just and reasonable, or somehow more just and more reasonable than the protested provision originally filed under Section 205.

Step 1 Trigger. Step 1 implementation would be deferred until triggered by the addition of incremental EDAM load meeting the following requirements (which have not been triggered):

- Execution of implementation agreements by utilities representing non-CAISO BA area load equal to or greater than 70% of the CAISO BA area load.
- Geographic diversity of the incremental load additions beyond PacifiCorp, BANC, and LADWP, including at least one new participant from the Southwest and one from the Northwest (excluding California participants).

Step 1 Dispute resolution modifications. A pivotal change to the dispute resolution requires that the CAISO, in the event that dispute resolution procedures do not resolve the dispute and either CAISO BoG or WEM GB votes in favor of a proposal that the other opposes, must make a "dual filing" (commonly known as a "jump ball") with FERC pursuant to its Section 205 rights. The dual filing would present both the CAISO BoG proposed tariff and the WEM GB proposed tariff as "co-equal" proposals, with no preference for either proposal indicated in the filing. FERC would not be required to consider whether the then-existing filed rate is unlawful and may adopt any or all of the CAISO BoG or WEM GB proposed market rules. This requirement for co-equal filings would also apply in circumstances where either the CAISO BoG or the WEM GB believes a tariff change is necessary, but the other body does not, and in non-time-critical exigent circumstances.

- **Step 2:** This step includes forming a new, fully independent RO that would have sole authority over the WEIM and EDAM. If implemented, the Step 2 proposal would enable the West to create a suite of voluntary wholesale electricity market services as Pathways Initiative stakeholders and participants desire without relying on the actions of any one state or BA. Step 2 consists of five areas that make up the primary building blocks of the new RO: RO Scope and Function, RO Formation, RO Governance, Public Interest Protections, and Stakeholder Engagement Process. The Pathways Initiative Step 2 proposal envisions the RO launching as a policy-setting organization for the establishment and oversight of market rules for the WEIM and EDAM, these include:

  - The RO will have full independent governance authority over market rules, with sole Section 205 rights, and ultimate authority over the associated business practice manual provisions.

- Market operations will continue to be performed and overseen on a day-to-day basis by the CAISO within the scope of its existing corporate authority, with varying levels of input from the RO. While the RO would not have direct day-to-day supervision of market operations, the RO would have audit rights and responsibilities to ensure the CAISO as market operator is following the tariff and business practices.
- The RO and CAISO rules will remain in a single integrated FERC tariff. The existing CAISO tariff is expected to need a stakeholder process to enable clarification and/or reorganization to ensure accountability and responsibility is clear for each organization, as well as understanding the classification of existing provisions as sole RO authority, sole CAISO authority, or shared authority.
- The CAISO's existing financial responsibility, liability, and compliance responsibilities related to the market will not migrate to the RO immediately, reducing the time and cost required for RO start up.
- The CAISO will remain the counterparty to existing market contracts, such as Participating Generator Agreements and Scheduling Coordinator Agreements.
- Market operator staff will retain emergency operational authority under FERC oversight, during actual emergency conditions in the market, as it does today.
- The Pathways Initiative Launch Committee has taken a high-level cut at what might be an initial RO budget. Based on a host of assumptions, the RO will have initial limited staffing with an estimated annual cost of $1.25 to $1.5 million, which could increase to $10 to $14 million over time as the organization develops.

Renewable Portfolio Standard (RPS). California's RPS requires all retail sellers to procure a minimum quantity of electricity products from eligible renewable energy resources. The RPS currently calls for 52% of total retail electricity sales in California to be met from eligible renewables by December 31, 2027, and 60% by December 31, 2030. The RPS statute also requires a percentage of those targets that must be met with specific portfolio content categories, these are commonly referred to as "RPS buckets." There are three categories of RPS buckets (each with varying requirements of their procurement, with preference for Category 1, then Category 2, and lastly Category 3):

- Category 1: Renewable energy and renewable energy credits (RECs) from the facilities with a first point of interconnection within a California BA, or facilities that schedule electricity with a California BA on an hourly or sub-

hourly basis. Retail sellers are required to procure 75% or more of Category 1 resources.

- Category 2: Renewable energy and RECs with incremental electricity, and/or substitute energy, from outside a California BA. Generally, Category 2 RECs are generated from out-of-state renewable facilities and require a Substitute Energy Agreement that details the simultaneous purchase of energy and RECs from a RPS-eligible facility. Retail sellers are required to purchase the delta of their Category 1 procurement and their Category 3 limit.
- Category 3: RECs that do not include the physical delivery of the energy that generated the REC. Generally, Category 3 RECs are associated with the sale and purchase of the RECs themselves, not the energy. Retail sellers may not procure more than 10% of their portfolio from Category 3.

Comments

Need for this bill. The author states:

> As we move toward achieving California's 100% clean energy goals, we must look at all possible solutions to improve reliability, reduce costs, and cut emissions in California. Pathways Initiative strikes that balance by unlocking the benefits of a regional energy market while safeguarding California's critical public policy priorities. It offers a win-win scenario for California—achieving cleaner energy, more reliable power, and real savings for ratepayers.

This bill is intended to reflect the Step 2 proposal by the Pathways Initiative by authorizing the CAISO, and the electrical corporations for whom the CAISO operates transmission (notably, Pacific Gas & Electric, San Diego Gas & Electric, and Southern California), to use voluntary energy markets governed by an independent RO, if specified requirements are met. The authorization would support the efforts by the supporters of the Pathways Initiative to expand energy markets across the West by attracting more participation from other states who are currently reluctant to join in markets governed by a CAISO governing board appointed by the California Governor and confirmed the State Senate. They note the changing energy landscape and need for a larger footprint to provide market efficiencies and electric grid optimization, including support for advancing clean energy.

Differences between this effort and previous legislative proposals. As noted above, previous legislative efforts attempted to transform the CAISO into a regional RTO independent of California governance (appointment by the Governor and

confirmation by the Senate) with the notion to transfer all of the CAISO's functions – BA, transmission planning and operations, transmission cost allocation, reliability coordination, energy market operations and rules. Instead, the proponents of this bill contend SB 540 seeks to only transform the functions related to energy market rules, in lieu of CAISO managing related energy markets. The supporters of this bill argue SB 540 is a more incremental approach to the previous legislative efforts and one that is more protective of California's clean energy policies, particularly as it retains the BA functions. Additionally, the supporters suggest an independent RO for energy markets – especially as EDAM is scheduled to launch next year – will enable additional participation from entities who are wary of participating in a market whose governance is overseen by California. They assert the expansion of the energy markets enabled by the independent RO will provide greater opportunity to reduce costs for electric utility customers, optimize clean energy resources, provide system efficiencies, and improved electric reliability. Moreover, the supporters argue that expansion of energy markets in the West will happen, as other competing efforts are taking shape, specifically the efforts by Southwest Power Pool's (a RTO in the Eastern Interconnection) to develop Markets+ energy day ahead market in the Western Interconnection, which has been conditionally approved by the federal government and Bonneville Power Administration has signaled its intention to join.[7]

Studies on impacts, show promise and need for some caution. Various studies have been presented or released to help better quantify the potential impacts of a broader energy market footprint on consumer cost/savings, electricity reliability, and emissions. Previous studies examined the benefits of the expansion of the CAISO BA functions across a broader Western footprint,[8] more recent studies have sought to quantify the impacts of expanded energy markets.

At a CEC Integrated Energy Policy Report (IEPR) workshop earlier this year, the Brattle Group and Professor Michael Wara from Stanford University Woods Institute for the Environment each presented studies on the impacts of an expanded regional market.[9] The CEC commissioned the study by the Brattle Group who examined the impacts of expanded participation in the West in CAISO's EDAM. In general, the preliminary study notes that benefits vary depending on the size and

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[7] Bonneville opts to join SPP's Markets+ day-ahead market over CAISO alternative | Utility Dive

[8] *Senate Bill 350 Study The Impacts of a Regional ISO-Operated Power Market on California.* Brattle Group, BEAR, E3, and Aspen Environmental Group: July 2016. https://www.caiso.com/documents/sb350study-volume1purpose-approachandfindings-mainreport.pdf Hurlbut, David, Mark Greenfogel, and Brittany Speetles. 2023. *The Impacts on California of Expanded Regional Cooperation to Operate the Western Grid* (ACR 188 Final Report). Golden, CO: National Renewable Energy Laboratory. NREL/TP-6A20-84848. https://www.nrel.gov/docs/fy23osti/84848.pdf.

[9] https://www.energy.ca.gov/event/workshop/2025-01/iepr-commissioner-workshop-regional-electricity-markets-and-coordination

diversity of the members that join, with a greater potential for benefits from a larger and more diverse footprint. The study considered 2032 as the proxy year and simulates four market footprints, ranging from baseline to likely EDAM participants to expanded EDAM to a split regional market (EDAM and SPP Markets+). The preliminary study found a fully expanded EDAM could produce nearly $800 million/year in benefits to Californians, higher than a split market scenario (at $182 million/year). The preliminary study also found the expanded EDAM provides a greater reduction in natural gas generation (31% reduction) within California and overall reduced emissions, as compared to the split market scenario which would reduce emissions in state but increase emissions within the broader footprint.[10]

A separate study by Professor Michael Wara and researchers at Stanford University's Woods Institute on the Environment examined electricity reliability benefits of broader regional cooperation under extreme events.[11] The study found that in the worst-case stress event, the benefits in operating in a single West-Wide electricity market are greater as compared to those of a split West-Wide market. Specifically, the study notes the larger footprints for a single ISO/RTO create larger reliability benefits during extreme events. The study states: "Since these events are increasingly likely due to climate change and the evolution of both energy supply and demand in western BAs, the value of cooperation is greater today and in the future than in the past."

Concerns about risks of undermining state's clean energy policies. Efforts to regionalize the CAISO have long raised concerns that such expansions could undermine the state's clean energy policies, especially the RPS and its preference for Category 1 eligible renewable energy resources. Previous efforts to regionalize the CAISO raised concerns that opening up the operation of CAISO would expose state policies and programs to federal preemption or Dormant Commerce Clause claims. These concerns largely express trepidation that the broader footprint within an independent and expanded market could result in challenges to California's RPS and eliminate the ability to require that power be delivered to a California BA (if that BA is now the entire Western U.S.) or that California utilities could be forced to prop up coal plants whether as part of an RTO-run capacity market or from challenges to state policies for renewable energy and zero-carbon resources by other market participants, or interference in the market by FERC under the orders of the White House. The supporters of the bill attempt to address these concerns by (1) limiting the expansion of the independent RO to only the market rules and (2)

[10] https://www.brattle.com/wp-content/uploads/2025/02/Preliminary-Day-Ahead-Market-Impacts-Study-Impact-of-Market-Footprints-on-California-Customers.pdf

[11] https://woodsinstitute.stanford.edu/system/files/publications/Woods_Grid_Regionalization_White_Paper_v05_WEB.pdf

preserving all other functions with CAISO; and (3) including language in this bill that makes explicit that the bill does not change any requirement related to the RPS or the SB 100 policy of the state to reach specified zero-carbon and renewable energy goals. They also argue that the CAISO is today subject to FERC oversight with or without this proposal.

Bill attempts to provide guardrails. As written, this bill would require the CAISO to ensure the independent RO satisfies a number of requirements including the governing board maintains a public policy governing board committee that engages with states, maintains relationships and seek input from a body of state regulators, maintain an office of public participation, maintains access to independent market analysis, market data is available to the CEC, market rule continue to provide GHG emissions information and protocols, and provides a procedure for unilateral withdrawal by any participant. These guardrails are intended to make clear the protections for Californians. However, many of opponents to this bill argue that the guardrails are not strong enough to overcome the control of the Delaware-based corporation, as the Pathways Initiative has proposed, that will have full authority to set the rules. The need for guardrails is warranted, especially given the actions by President Trump, as he has already espoused interfering in independent agencies, such as FERC (though no FERC action has followed, yet), his vocal support for coal generation, his opposition to renewable energy, and most recently issuing an executive order directing the U.S. Attorney General to identify state and local laws that may be unconstitutional or preempted by federal law, citing those addressing climate change.

Opportunities to withdraw. This bill makes explicit that the CPUC's authority to direct electric IOUs to withdraw from an energy market governed by an independent RO. Additionally, this bill includes, among the list of 12 requirements that must be satisfied before the CAISO may use the voluntary independent RO, that the governing document of the independent RO includes a procedure for unilateral withdrawal by any participant. Appropriately, the supporters of this bill include these provisions to ensure the state and utilities can exit the independent RO should conditions warrant. Many of the opponents to this bill express concerns that the language is not strong enough to protect the state from the need to withdraw, including the risk of unknown penalties that may be assessed against the state or its utilities. The Utility Reform Network (TURN) recommends language that requires California utilities to withdraw from the independent RO if legal challenges result in a court ruling that California's resource planning policy (RPS, resource adequacy, etc.) discriminates against out-of-state resources.

"In lieu" vs. "consistent with." Under Section 345.5 of the Public Utilities Code, the CAISO is required to conduct its operation consistent with applicable state and

federal laws and consistent with the interests of the people of the state. Many of the opponents to this bill express concerns with the use of "in lieu" in reference to the authority granted to the CAISO to use voluntary energy markets governed by the independent RO. They argue the language should continue to stipulate "consistent with" in order to ensure the operations of the independent RO remain protective and in the interests of Californians.

Timing and the role of the Legislature. SB 540 would condition changes to the CAISO governance of energy markets on the governance documents of the independent RO and a vote by the CAISO GB. Some of the opponents of this bill urge the requirement of a concurrent resolution prior to authorizing the CAISO to use the voluntary markets of the independent RO. Previous legislative efforts to modify the governance structure of the CAISO to support regionalization, included in SB 350 (De León and Leno, Chapter 547, Statutes of 2015), conditioned implementation on several actions, including enactment of statute. The opponents argue that such a requirement would ensure that the Legislature will have greater clarity as to the complex issues and potential implications. The stakeholders involved in the Pathways Initiative have worked very quickly and impressively to develop their proposals with consensus among diverse entities for the new independent RO. However, much work remains to identify the aspects of the market rules that would be handled by the new RO and market operations that the CAISO would continue to handle, including whether FERC will approve them. Recognizing the timeline in this bill is a year after this bill takes effect (January 1, 2027), the uncertainties of the current federal administration may be less so (or more so) by then. It may be worth exploring what additional role the Legislature may have prior to fully transitioning the CAISO.

Dual Referral. Should this bill be approved by this committee, it will be re-referred to the Senate Judiciary Committee.

Prior/Related Legislation

AB 538 (Holden) of 2023, would have delegated to the CEC the ability to authorize the transformation of the CAISO into a multistate regional transmission system, if specified requirements are satisfied. This bill prohibits a California electrical transmission facility owner, a retail seller of electricity, or a publicly owned utility from joining a multistate regional transmission system organization, if specified requirements are not met. The bill was held in the Assembly Appropriations Committee.

ACR 188 (Holden, Chapter 138, Statutes of 2022) requests, by February 28, 2023, the CAISO, in consultation with the California BAs, to produce a report that

summarizes recent relevant studies on the impacts of expanded regional cooperation on California and identifies key issues that will advance the state's energy and environmental goals.

AB 813 (Holden) of 2018, would have delegated to the CEC the ability to authorize the transformation of the CAISO into a multistate regional transmission system, if specified requirements are satisfied. The bill died in the Senate Appropriations Committee.

SB 100 (De León, Chapter 312, Statutes of 2018) established the 100 Percent Clean Energy Act of 2018 which increased the RPS requirement from 50% by 2030 to 60% and creates the policy of planning to meet all of the state's retail electricity supply with a mix of RPS-eligible and zero-carbon resources by December 31, 2045, for a total of 100% clean energy. Required the CPUC, in consultation with the CEC, CARB, and all California BAs, to issue a joint report to the Legislature by January 1, 2021, reviewing and evaluating the 100% clean energy policy.

SB 726 (Holden) of 2017, included three distinct, largely unrelated components, one of which would have established a process to authorize transformation of the CAISO into a RO. The bill was held in the Senate Rules Committee.

SB 350 (De Leon, Chapter 547, Statutes of 2015), among other things, established targets to increase retail sales of renewable electricity to 50% by 2030, stated the intent of the Legislature to provide for the regionalization of CAISO, and required statutory authorization of such regionalization.

FISCAL EFFECT: Appropriation: No Fiscal Com.: Yes Local: No

SUPPORT:

California State Association of Electrical Workers (Co-Sponsor)
Coalition of California Utility Employees (Co-Sponsor)
Environmental Defense Fund (Co-Sponsor)
Natural Resources Defense Council (Co-Sponsor)
350 Humboldt
350 Sacramento
Advanced Energy United
Akamai Technologies
AWS Americas (Amazon)
American Clean Power- California
Balancing Authority of Northern California

California & Nevada State Association of Electrical Workers
California Chamber of Commerce
California Community Choice Association
California Environmental Voters
California Large Energy Consumers Association
California Manufacturers & Technology Association
California Municipal Utilities Association
California State Pipe Trades Council
Ceres
City of Glendale Water & Power
Clean Energy Buyers Association
Clean Power Alliance
Clean Power Campaign
Climate Action California
Climate Hawks Vote
Data Center Coalition
E2 - Environmental Entrepreneurs
EDF Renewables
EDF Renewables-Western Region
Elevate California
Enel North America
Engie North America
Glendale Water and Power
Google
Independent Energy Producers Association
Lassen Municipal Utility District
Leap
Marin Clean Energy
MCE Community Choice Energy
Microsoft Corporation
Mitsubishi Cement Corporation
Modesto Irrigation District
Natural Resources Defense Council
Northern California Power Agency
Offshore Wind California
Orange County Power Authority
Pacific Gas and Electric Company and Its Affiliated Entities
Pacific Power
Pacific Steel Group
Pattern Energy
Peninsula Clean Energy
Renew Home

Rivian
Sacramento Municipal Utility District
San Diego Community Power
San Diego Gas and Electric Company
Sierra Nevada Brewing Company
Silicon Valley Clean Energy
Silicon Valley Leadership Group
Solar Energy Industries Association
Southern California Edison
TechNet
The Climate Reality Project - Silicon Valley Chapter
The Nature Conservancy
Union of Concerned Scientists
Western Freedom Energy Action
Western Power Trading Forum
Western Resource Advocates
Western States SMART Council

OPPOSITION:

350s: Bay Area, Conejo/San Fernando Valley, Contra Costa Action, Long Beach, San Diego, SoCal, South Bay LA, Southland Legislative Alliance, and Ventura County Climate Hub
Ballona Wetlands Institute
Ban Sup (Single Use Plastic)
Cal Poly Initiative for Climate Leadership and Resilience
California Alliance for Community Energy
California Climate Voters
California Solar & Storage Association, unless amended
California State Counsel of Laborers
Californians for Energy Choice
Californians for Green Nuclear Power, Inc.
Center for Biological Diversity
Change Begins With Me
Chino Valley Democratic Club
Clean Coalition
Coastal Lands Action Network
Consumer Watchdog
Contra Costa Moveon
Defend Ballona Wetlands
Democrats for Neighborhood Action
District Council of Iron Workers

El Dorado Progressives
Electric Vehicle Association, CA Central Coast Chapter
Environmental Working Group
EPAA Environmental and Political Action Group
Extinction Rebellion SF Bay Area
Feminists in Action Los Angeles
Food and Water Watch
Fresnans Against Fracking
Glendale Environmental Coalition
Green Party of California
Haight Ashbury Neighborhood Council
Hammond Climate Solutions
Hang Out Do Good
Indivisibles: 36, 41, CA-14,CA-25 Simi Valley Porter Ranch, CA-43, CA-45, Alta Pasadena, Auburn CA, Beach Cities, California Green Team, Claremont/Inland Valley, Cloverdale, Colusa County, East Bay, East Valley, El Dorado Hills, Elmwood, Euclid, Fremont, Hillcrest, Indian Valley, Lakewood, Livermore, Los Angeles, Manteca, Marin, Media City Burbank, Mendocino, Mid-Peninsula, Monterey, Normal Heights, OC 46, OC 48, Of the Desert, Orchard City, Palo Alto Plus, Petaluma, Redlands, Resisters Walnut Creek, Ross Valley, Sacramento, San Diego Central, San Jose, San Pedro, Santa Barbara, Santa Cruz County, Sausalito, Sebastopol, San Francisco, San Francisco Peninsula, SFV, Sonoma County, South Bay LA, Stanislaus, Stockton, The Resistance Northridge, Tracy, Tri-Valley, TWW - Los Gatos, Ventura, West Side LA, Yalla, and Yolo
International Brotherhood of Boilermakers
Local Clean Energy Alliance
Long Beach Alliance for Clean Energy
Long Beach Environmental Alliance
Mill Valley Community Action Network
Napa Climate Now
Our City San Francisco
Our Revolution Long Beach
Progressive Democrats of America
Progressive Democrats of California
Progressive Democrats of Santa Monica Mountains
Queers 4 Climate
Reclaim Our Power Utility Justice Campaign
Reclaim Our Power!
Recolte Energy
Rooted in Resistance
San Joaquin Valley Democratic Club

Santa Cruz Climate Action Network
Santa Cruz for Bernie
Santa Monica Democratic Club
Sequoia Forestkeeper
SLO Climate Coalition
SoCal Americans for Democratic Action
Sunflower Alliance
Sustainable Rossmoor
Sustainable Systems Research Foundation
The Clean Coalition, unless amended
The Climate Alliance of Santa Cruz County
The Protect Our Communities Foundation
The Utility Reform Network, unless amended
Together We Will-Contra Costa
Urban Ecology Project
Valley Women's Club of San Lorenzo Valley
Venice Resistance
Women's Energy Matters
Women's Alliance Los Angeles
Four Individuals

ARGUMENTS IN SUPPORT: The Natural Resources Defense Council and Environmental Defense Fund state:

> SB 540 represents a significant step toward modernizing California's energy infrastructure and enhancing collaboration across state lines to achieve a more resilient and sustainable energy future. By improving grid reliability, reducing electricity costs for Californians, and making significant strides toward our decarbonization goals, this legislation promises substantial benefits for all Californians.

The California State Association for Electrical Workers and Coalition of California Utility Employees state:

> SB 540 provides the California Independent System Operator (CAISO) the authority necessary to implement the Pathways Initiative Proposal if it determines a new independent regional organization meets specific, stringent requirements. The bill allows CAISO’s energy markets to include a wider market of electricity resources which studies have shown would provide significant benefits to California consumers, including cost savings, enhanced grid reliability, and reduced air pollution.

ARGUMENTS IN OPPOSITION: The Utility Reform Network (TURN) states:

> Despite the incremental nature of this new approach, TURN remains concerned that SB 540 currently contains insufficient safeguards to protect California consumers if the RO adopts market rules that frustrate key state environmental, resource planning, reliability or other public interest policies. These adverse outcomes have become more likely given recent announcements by the Trump administration indicating an intention to prioritize coal-fired generation, devalue clean energy resources, and challenge the legitimacy of state climate policies.

A coalition of environmental organizations, including Center for Biological Diversity, Reclaim Our Power, the Environmental Working Group, and others, state:

> …SB540 does not include sufficient safeguards. Participating in or operating the energy markets would also be "in lieu of . . . subdivision (b) of Section 345.5. …The removal of these statutory safeguards with several provisions that are either unenforceable or illusory. …California must avail itself of all available safeguards to limit the damage that could flow from FERC. For example, FERC could require the RO to devalue clean energy resources in favor of fossil fuels or other combustion resources and eliminate California's ability to apply critical environmental standards to imports. This includes the social costs of carbon pollution and protections for biodiversity.

-- END --