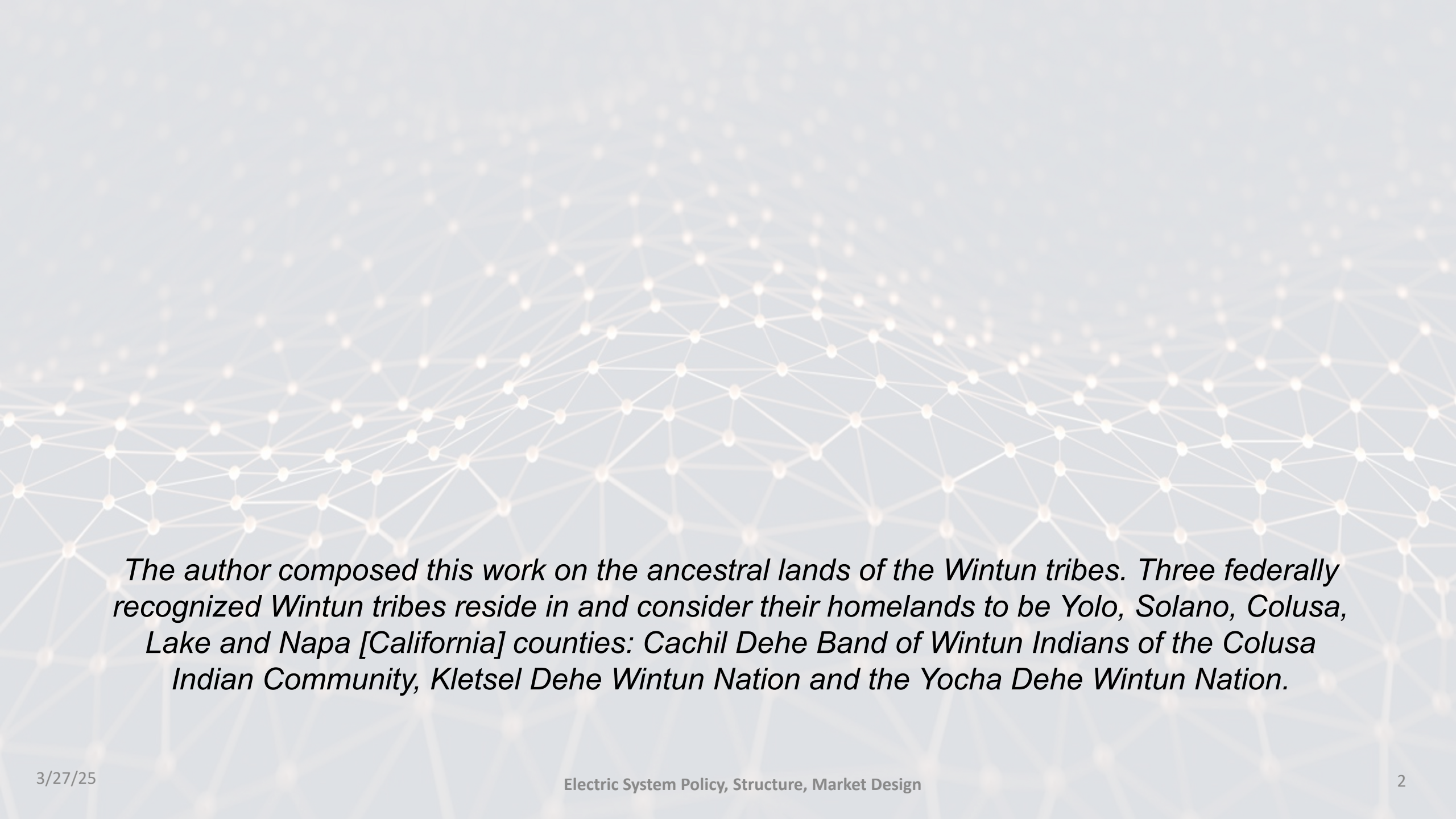


CA Senate Bill 540 — Pathways Initiative CAC Discussion — Part 1

**Valley Clean Energy – Community Advisory Committee Meeting
March 27, 2025**

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Electric System Policy, Structure, Market Design**



The author composed this work on the ancestral lands of the Wintun tribes. Three federally recognized Wintun tribes reside in and consider their homelands to be Yolo, Solano, Colusa, Lake and Napa [California] counties: Cachil Dehe Band of Wintun Indians of the Colusa Indian Community, Kletsel Dehe Wintun Nation and the Yocha Dehe Wintun Nation.

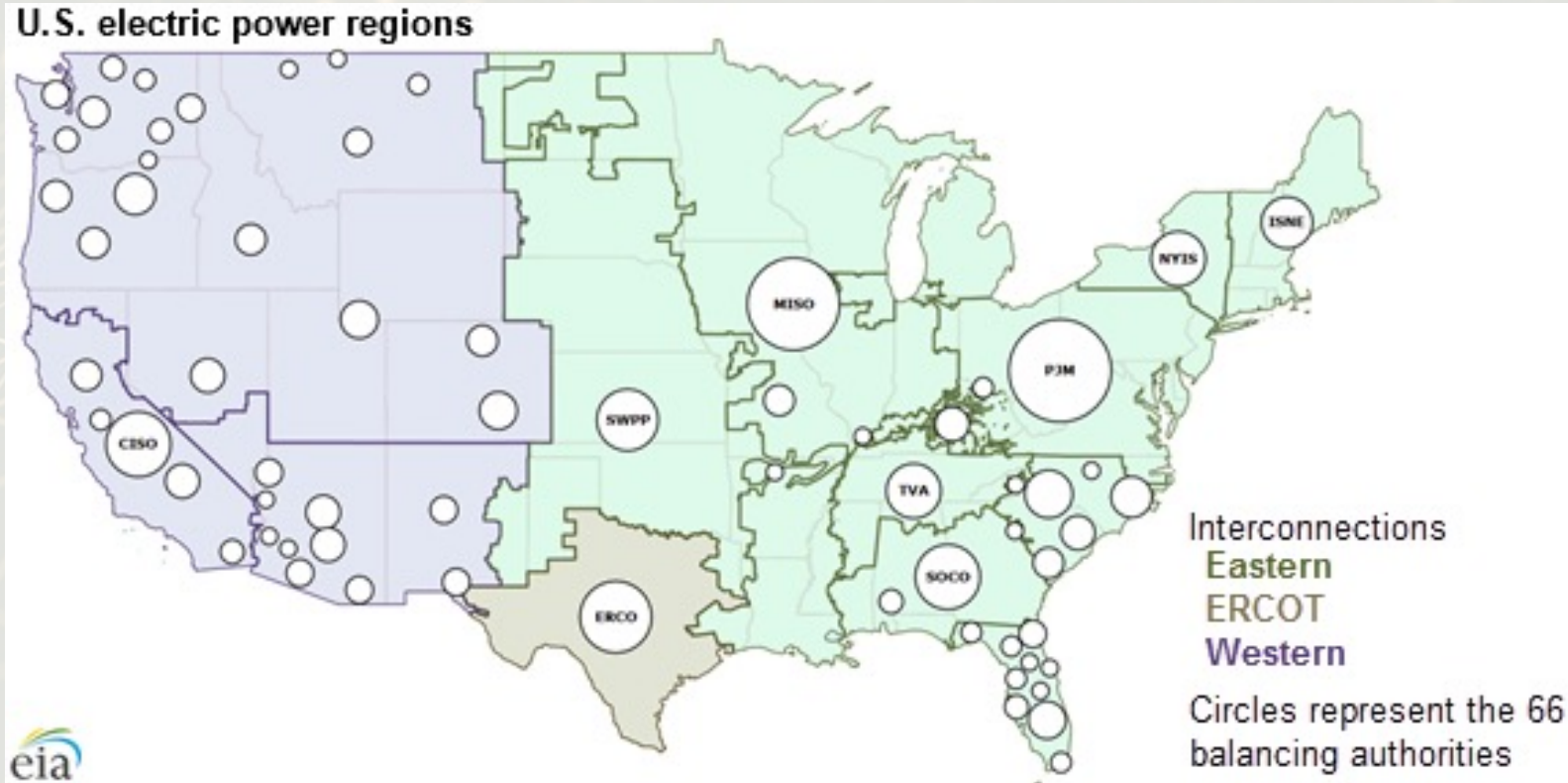


Part 1

Background, Context & Bill Elements

The Western Interconnection

- 14 states, parts of Canada & Mexico, form one electrically connected region
- 38 Balancing Authorities (white circles)
- Most participate in continual energy flows between BAs (imports & exports)
- In the west, energy flows counter-clockwise in winter, clockwise in summer
- California imports ~30% of its energy needs annually



Major Industry Structural Change in 1990s

- Pre-1990s dominant industry structure was Vertically-Integrated Utilities => the utility owns everything — generation, transmission, distribution, customers — in its monopoly service territory.
 - Some energy trading among utilities in some areas – PJM & New England power pools
- Desire for competitive power generation => nation-wide structural changes enabled by FERC Orders 888-889 => “Open Access” transmission service required to support competitive wholesale bulk energy market.
- Most US BAs — but not all — formed/joined Independent System Operators (ISOs) — governed by FERC — as the entity to operate transmission systems & bulk power markets, to ensure non-discriminatory transmission & market access
 - ISO must be independent of transmission owners & market participants
 - Most of the west & southeast US did not join ISOs & kept traditional utility structure
 - California ISO is the only ISO in the western region

California's Restructuring — AB 1890

- Legislation authorized formation of California ISO (CAISO) & Power Exchange (PX)
 - Separate functions: CAISO = grid operator + BA; PX = market operator (Europe model)
- Required IOUs to join CAISO & PX => CAISO combined 3 IOU BAs into one
- Gave municipal utilities the option to join — only SMUD joined, but left in 2005
- Authorized retail competition (“Direct Access”) => Electricity Service Providers (ESPs)
 - mostly cherry-picked C&I customers; not much residential action
- Market system started operation April 1998; worked pretty OK until ...

Energy Crisis June 2000

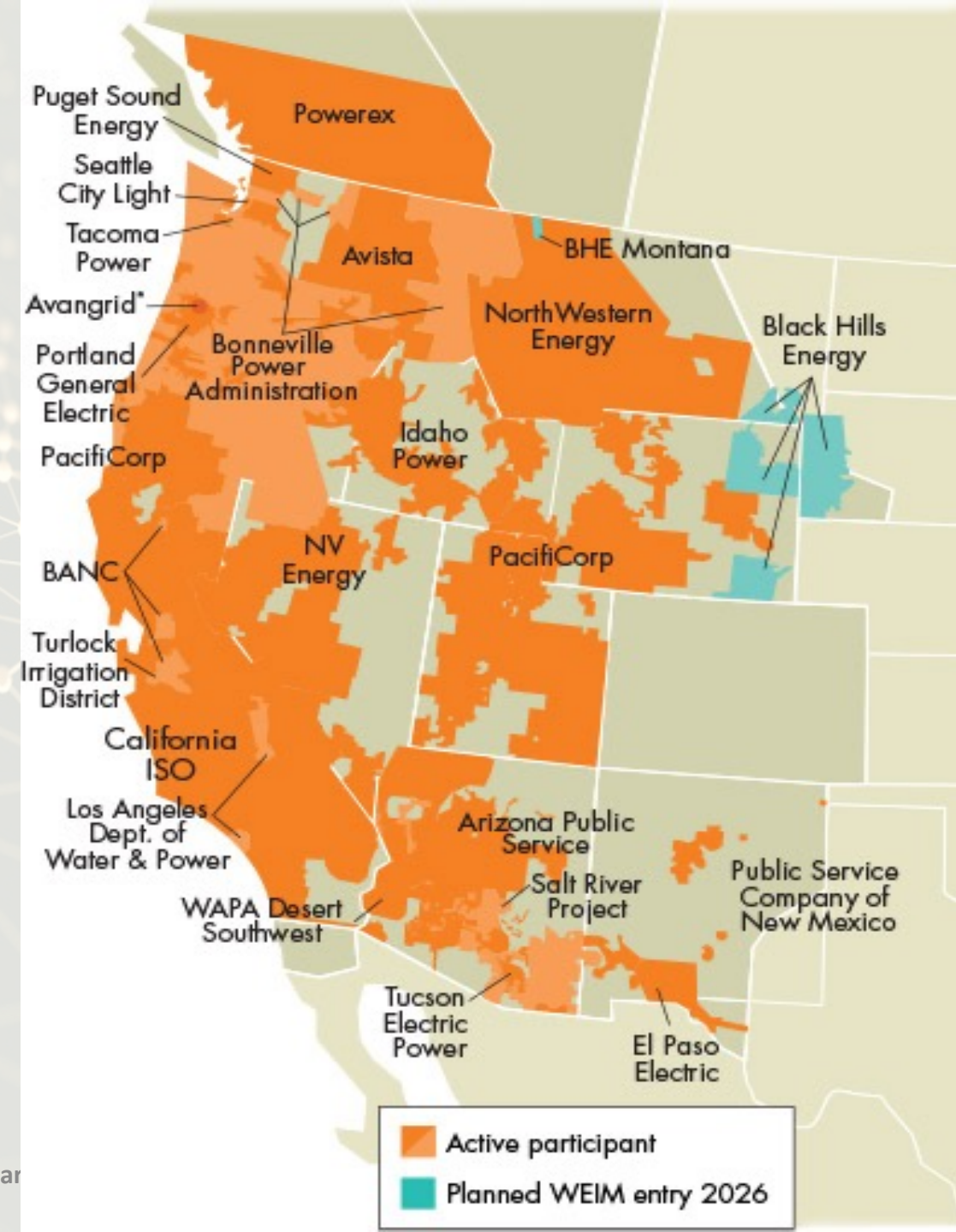
- PX died quickly; CAISO took on market operation in addition to grid operation & BA
- State killed 25-member stakeholder Board, replaced with 5 governor appointees
- Direct Access frozen with existing DA customers
- Governor Gray Davis was recalled & defeated in recall election
- Left permanent traumatic scars in CA politics & other western states

Post-Crisis Changes

- CAISO began market redesign early 2002; new market system start-up April 2009.
 - CAISO retained grid operation, BA & market operation functions. The separate PX was never revived.
- CPUC created Resource Adequacy (RA) program (2004-5), requiring all Load-Serving Entities (LSEs = IOUs & ESPs & later CCAs) to contract for generating capacity collectively sufficient to ensure CAISO would almost never have a supply shortage for real-time balancing
- Legislature passed AB 117 authorizing Community Choice Aggregation (2002)
- FERC Order 890 (2007) added transmission planning to ISO core functions
- Today ISOs/RTOs have three main core functions
 - 1) Grid operation / BA / provide open-access transmission service
 - 2) Market operation / day-ahead & real-time bulk power markets
 - 3) Transmission planning / generator interconnection

Western Market Integration 1

- Lots of ideas, conferences, initiatives to explore western RTO since late 1990s
 - 2000-01 crisis trauma; mistrust of California
 - Traditional transmission scheduling & cost recovery at odds with CAISO market
 - Strong interest in building G&T assets outside CA to sell to CA
- First major achievement — **Energy Imbalance Market (EIM, WEIM) — started 2014 by CAISO**
 - CAISO market operation & software systems
 - Easy entry/exit for BAs
 - Real-time energy trades only
 - Footprint grew gradually as BAs joined
 - Significant \$\$ benefits — \$6.6 Billion



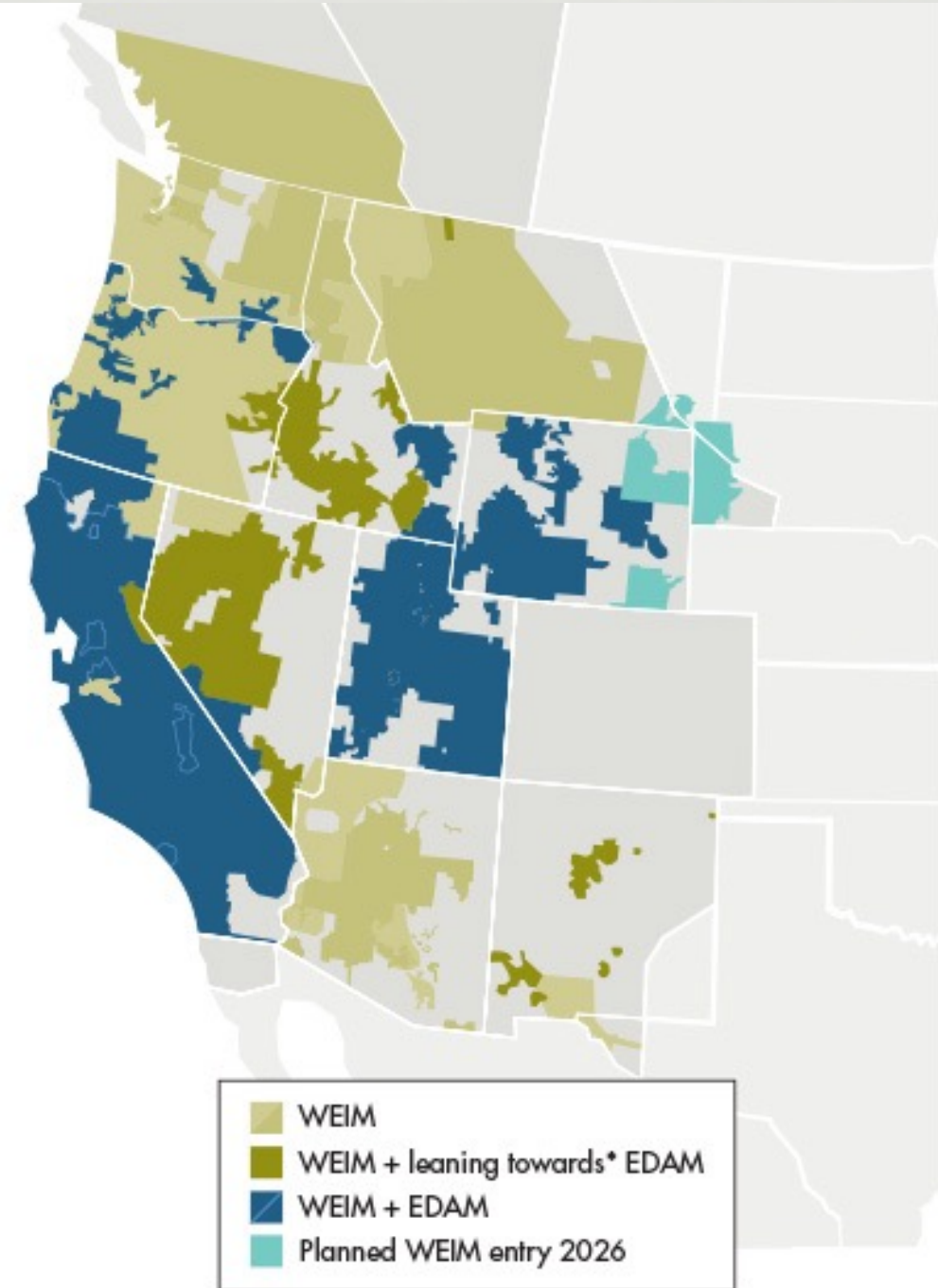
Western Market Integration 2

Extended Day Ahead Market (EDAM)

- Day-ahead scheduling & settlement – financial commitments by buyers & sellers at DA prices
- Unit Commitment — DA decisions about which resources will operate next day
- EDAM + WEIM replicates CAISO DAM + RTM and extends to multiple participating BAs
- CAISO market operation & software systems
- Scheduled operation to start May 2026

Details on WEIM and EDAM — history, structure, WEIM benefits, etc.

- <https://www.westerneim.com/pages/default.aspx>



**These entities have publicly indicated a leaning towards EDAM as their preferred day-ahead market.*

Existing WEIM + EDAM (“WEM”) Governance Structure

- 5-member “WEM Governing Body” — stakeholder nominating committee, etc.
<https://www.westerneim.com/Documents/Selection-Policy-WEM-GoverningBody.pdf>
(initiated 2015; updates effective July 2024)
- **Section 205 Authority:** “The WEM Governing Body will have joint authority with the [CAISO] Board of Governors to approve or reject a proposal to change or establish a tariff rule applicable to the WEIM/EDAM Entity balancing authority areas, WEIM/EDAM Entities, or other market participants within the WEIM/EDAM Entity balancing authority areas, in their capacity as participants in the WEIM/EDAM.”
- **Federal Power Act Sec. 205** => Filing of proposals at FERC to modify CAISO tariff provisions, currently exclusive to CAISO Board of Governors, except as above.
- Other roles: Joint approval of Market Surveillance Committee members; contracting independent markets expert; Body of Regulators; Regional Issues Forum
- <https://www.westerneim.com/Documents/Charter-for-WEIM-and-EDAM-Governance.pdf> (adopted December 2015)

SB 540 — Regional Organization (RO)

SB 540 Section 2: “... the Independent System Operator and the electrical corporations that are participating transmission owners whose transmission systems are operated by the Independent System Operator **may use *voluntary* energy markets governed by an independent regional organization** if all of the following requirements are satisfied:”
[followed by 12 requirements to be met.]

- SB 540 does not define “governed by an independent regional organization.”
- CAISO Board will determine whether the requirements have been met; after conducting a stakeholder process to present its findings and receive & respond to comments.
- SB 540 preserves current CAISO grid operation, BA & transmission planning functions

Meanwhile — Pathways Step 1 to RO revises current WEM Section 205 authority

- CAISO FERC filing 11/22/24: (1) Elevate WEM Governing Body from “joint authority” to “primary authority”; (2) Add a rule authorizing a “dual filing” when no single proposed amendment is supported by both the CAISO Board and the WEM Governing Body. A dual filing presents two alternative amendments from which FERC can choose.



Thank you.

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