

To the California Independent System Operator (CAISO) Board of Governors:

Re: Support for the 2025-2026 Transmission Plan and a Proposal for Granular Scenario Planning

Dear Members of the Board of Governors,

I am writing to express strong support for the innovative work demonstrated in the Draft 2025-2026 Transmission Plan and to recommend its adoption. The CAISO staff continue to make commendable strides in navigating an incredibly complex energy transition. As we look beyond this current planning cycle, the challenge of integrating highly concentrated load growth requires the CAISO to refine how it plans for uncertainty.

Currently, treating rapidly growing load associated with edge-computing for autonomous vehicles and for smart cities as well as the rapid electrification of transportation as smooth, dispersed load growth masks the stresses that will occur at specific locations on the grid. When resource planners rely on a single, deterministic load forecast to plan for these "lumpy" loads, they are at risk for either overbuilding with increased costs to ratepayers or underbuilding and degrading reliability.

To better manage this uncertainty and secure a "least-regrets" grid over time, the Board should direct CAISO staff to adopt a **Granular Scenario Planning** approach for localized load pockets in future planning cycles. Evaluating a matrix of localized scenarios—such as a Base Case, a Moderate Grid-Edge Growth case, and an Extreme "Lumpy" Growth case—would allow CAISO to identify localized infrastructure upgrades that provide value in the face of uncertainty.

This approach can be achieved through a targeted, three-step approach:

1. Establish a "Vulnerability Baseline" using Historical Shadow Pricing

Historical shadow prices pulled from CAISO's OASIS platform could be utilized as a diagnostic filter to identify future localized needs. If a specific node has a history of high Locational Marginal Price (LMP), it indicates the sub-area may be operating near its thermal limit. This analysis can pinpoint which sub-areas on the grid require granular scenario testing.

2. Predictive Shadow Pricing

Once vulnerable sub-areas are isolated, planners can apply the three load-growth scenarios into CAISO's Production Cost Models. When the model encounters a transmission line that reaches its limit under a future load scenario, it generates a simulated future shadow price, calculating the cost of dispatching out-of-merit generation to avoid a thermal overload.

3. The "Least-Regrets" Matrix

This predictive data generates a decision matrix that shifts planning to testing the resilience of

an investment. If a simulated shadow price at a specific node spikes across *all three* load scenarios, deploying a targeted non-wires alternative (NWA), hybrid battery, or reconductoring project would be a "no-regrets" investment. Conversely, if a node only shows severe congestion under the most extreme scenario, committing ratepayers to a large transmission reinforcement project would represent a "high-regret" financial risk.

Proposal for a Special Study: The LA Basin

To operationalize this approach, we recommend the Board support a **Special Study focusing on the Los Angeles Basin** in the upcoming planning cycle. The LA Basin represents the confluence of rapid grid-edge load growth and dense existing infrastructure. Applying this Granular Scenario Planning framework to the LA Basin can demonstrate how targeted, hybrid storage and transmission solutions can cost-effectively relieve congestion without overcommitting capital. This would be an opportunity to collaborate with the Los Angeles Department of Water and Power.

We commend the Board and CAISO staff for their continued leadership and look forward to supporting the evolution of a proactive, least-regrets transmission planning framework.

Sincerely,

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