

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to  
Continue Oversight of Electric  
Integrated Resource Planning and  
Procurement Processes.

Rulemaking 25-06-019

**REPLY COMMENTS OF THE  
CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION**

Roger E. Collanton  
General Counsel  
William H. Weaver  
Assistant General Counsel  
Marissa Mercado  
Counsel  
California Independent System  
Operator Corporation  
250 Outcropping Way  
Folsom, CA 95630  
Tel: 916-963-0521  
Fax: 916-608-7222  
Email: [mmercado@caiso.com](mailto:mmercado@caiso.com)

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**I. Introduction**

The California Independent System Operator Corporation (CAISO) submits reply comments on the August 31, 2026 *Administrative Law Judge’s Ruling Seeking Comments on Electricity Portfolios for the 2027-2028 Transmission Planning Process and Potential for Geographically Targeted Procurement* (Ruling).

The CAISO supports adopting the Limited Out-of-State Resources Sensitivity portfolio for the CAISO to study in its 2027-2028 Transmission Planning Process (TPP) in order to better understand the implications of a less diverse resource mix. The CAISO also supports including 3,000 megawatts (MW) of Wyoming wind on the TransWest Express (TWE) project in the recommended base case portfolio and supports consistent treatment of approved out-of-state transmission projects with approved in-state transmission projects in RESOLVE. Regarding potential future reconfiguration of the Humboldt transmission facilities, the CAISO notes that any determinations require additional information and review through the CAISO’s Transmission Planning Process (TPP). In addition, the CAISO recommends the California Public Utilities Commission (Commission) develop a new intake process to gather information on commercial interest for use in both its portfolio development and busbar mapping processes.

The CAISO reiterates the importance of aligning procurement requirements with resource and transmission planning. Lastly, the CAISO recommends geographically-targeted procurement in the Western Los Angeles (LA) Basin.

## **II. Discussion**

### **A. The CAISO Supports Studying the Limited Out-of-State Resources Sensitivity Portfolio to Better Understand the Implications of a Less Diverse Resource Mix.**

Several parties support studying a Limited Out-of-State Resources Sensitivity in the 2027-2028 TPP.<sup>1</sup> The CAISO generally agrees evaluating this sensitivity portfolio can provide valuable insight into the transmission implications of a less diverse resource mix resulting from reduced access to out-of-state resources. The CAISO notes the development and procurement of out-of-state resources is critical to ensuring grid reliability and resiliency. However, these resources have longer lead-times and require transmission infrastructure buildout. If delays continue, future portfolios will rely on increasing volumes of in-state solar and storage, which will provide a declining reliability contribution.<sup>2</sup> The CAISO supports evaluating how transmission system needs could change if future resource portfolios include fewer out-of-state resources.

The CAISO does not view this sensitivity portfolio as a realistic representation of the future resource mix. To the contrary, out-of-state resources are expected to play an increasingly important role in maintaining reliability. Nevertheless, the sensitivity portfolio provides a useful analytical framework for understanding the potential consequences of delayed, constrained, or otherwise unavailable out-of-state resources.

By examining a portfolio with greater reliance on in-state solar and storage resources, the sensitivity can help identify important insights into meeting transmission needs, reliability needs,

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<sup>1</sup> Bay Area Municipal Transmission Group (BAMx) Opening Comments, p. 5; TransWest Express LLC (TransWest) Opening Comments, p. 12; California Community Choice Association (CalCCA) Opening Comments, p. 15; Ormat Technologies, Inc. (Ormat) Opening Comments, p. 9; California Energy Storage Alliance (CESA) Opening Comments, p. 9; EDF Power Solutions (EDF PS) Opening Comments, p. 4; Western Power Trading Forum (WPTF) Opening Comments, p. 19; Terra-Gen, LLC (Terra-Gen) Opening Comments, p. 6; Defenders of Wildlife (DOW) Opening Comments, p. 5; EXG Opening Comments, p. 8; Viridon Opening Comments, p. 18; Middle River Power, LLC (MRP) Opening Comments, p. 8; Environmental Protection Information Center (EPIC) Opening Comments, p. 1; Golden State Clean Energy (Golden State) Opening Comments, p. 4; Large-scale Solar Association and Solar Energy Industries Association (LSA-SEIA) Opening Comments, p. 11; Shell Energy North America, L.P. (Shell) Opening Comments, p. 12; REV Renewables Opening Comments, p. 4; and Sonoma Clean Power Authority (SCPA) Opening Comments, p. 10.

<sup>2</sup> Notably, this sensitivity portfolio excludes additional Wyoming wind that can come to the CAISO through the TWE project as well as most Idaho wind resources, due to inconsistent treatment of SWIP-North, an approved project. This results in a greater reliance on in-state resources, which are primarily solar and storage.

and state objectives with a less geographically diverse resource mix. This analysis may also highlight the value of out-of-state resources and transmission infrastructure that enables their delivery, such as TWE and SWIP-North.

Accordingly, the CAISO supports adopting the recommended Out-of-State Resources Sensitivity portfolio to transmit to CAISO for study in its 2027-2028 TPP, while continuing to recognize the critical role that out-of-state resources are expected to play.

**B. The CAISO Supports Including 3,000 Megawatts of Wyoming Wind Delivered Through the TransWest Express Project in the Base Case Portfolio.**

In its opening comments, TransWest clarified that “the TWE project’s previous configuration was designed to interconnect 1,500 MW of transmission capacity to CAISO, whereas its current configuration will interconnect the full approximately 3,000 MW (3 GW) of transmission capacity to CAISO.”<sup>3</sup> TWE also indicated that its proposed configuration can deliver all 3,000 MW, with a proposed in-service date of 2032.

The CAISO believes it is reasonable and appropriate to include the 3,000 MW associated with TWE in the portfolio analysis based on the information TWE provided in opening comments. At present, TWE remains the only transmission project in the public domain capable of providing access to Wyoming wind resources at scale, and the project appears to be at an advanced stage of development. TWE has also provided updates regarding both the transmission project and the associated Chokecherry and Sierra Madre Wind Energy Project. Given the maturity of the project and the information submitted into the record, the CAISO believes the Commission should reflect these updates in its evaluation of resource portfolios and planning assumptions.

The CAISO recognizes uncertainty exists for all major transmission and generation projects under development. However, the CAISO believes TWE has demonstrated meaningful progress toward addressing risks within its control. The Commission should consider remaining uncertainties in the broader context of project maturity and the potential value of accessing Wyoming wind resources. Consistent with the CAISO's opening comments, the Commission can further reduce development uncertainty for long-lead-time transmission and resource projects by

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<sup>3</sup> TransWest Opening Comments, pp. 2-3.

providing clear locational procurement signals that support investment and resource development decisions.

**C. The CAISO Clarifies That Any Determinations on Humboldt Transmission Projects Require Additional Information and Review Through the Transmission Planning Process.**

In opening comments, several parties recommended that, if the Commission adopts a zero offshore wind assumption in the 2027-2028 TPP base portfolio and that development does not materialize, the CAISO should evaluate whether the transmission facilities approved to support Humboldt offshore wind development could be reconfigured to deliver resources from Northern California and other regions.<sup>4</sup>

The CAISO clarifies that although it will need to evaluate whether reconfiguration of the approved transmission facilities is appropriate under such circumstances, it is premature, at this stage. Such an evaluation would require the CAISO to reassess transmission needs and the associated transmission solutions in the TPP, including a reassessment of the transmission solutions required to support the delivery of other resources in the portfolio, such as geothermal.

**D. Approved Out-of-State Transmission Projects, Such as SWIP-North, Should be Treated Consistently with Approved In-State Transmission Projects in RESOLVE Modeling.**

In its opening comments, TransWest recommended the Commission distinguish its treatment of transmission projects that have “demonstrated concrete development progress” from conceptual projects in RESOLVE modeling.<sup>5</sup> The CAISO agrees with this recommendation, noting CAISO-approved transmission projects are distinctly different from conceptual projects with uncertain development timelines.

LS Power noted construction on SWIP-North began in summer 2026 and the project is expected to be operational in 2028.<sup>6</sup> Despite SWIP-North being an approved transmission project that has made significant progress towards reaching commercial operation, SWIP-North is treated as a prospective cost in RESOLVE. The CAISO reiterates its concern that treating

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<sup>4</sup> CalCCA Opening Comments, p. 3; Viridon California, LLC (Viridon) and California Grid Holdings, LLC (CalGrid) Opening Comments, p. 19; Natural Resources Defense Council (NRDC) and Union of Concerned Scientists (UCS) Opening Comments, p. 9.

<sup>5</sup> TransWest Opening Comments, p. 8.

<sup>6</sup> LS Power Opening Comments, p. 2.

approved transmission projects intended to deliver out-of-state resources as prospective costs is inconsistent with how approved in-state transmission projects are treated in RESOLVE. This can materially affect the quantity and timing of selected out-of-state resources, with significant variance across planning cycles. This treatment may also prevent RESOLVE from fully considering opportunities to use approved transmission facilities to deliver out-of-state resources to California, creating uncertainty regarding their future utilization.

Accordingly, the CAISO continues to recommend the Commission provide a clear and consistent planning framework for out-of-state resources and the transmission projects approved to deliver these resources. Transmission projects that have received approval through the CAISO's TPP should be represented in a manner that reflects their expected availability and capacity in RESOLVE, consistent with the representation of all approved in-state transmission projects. A consistent planning approach would support the effective utilization of approved transmission projects, improve the evaluation of out-of-state resource opportunities, and better inform decisions regarding resource portfolios.

#### **E. The Commission Should Develop a New Process for Evaluating Commercial Interest.**

Several parties expressed concern regarding the Commission's reliance on the CAISO interconnection queue as an indicator of commercial interest.<sup>7</sup> In particular, XGS noted that reliance on the interconnection queue may be creating "an unintentional but severe negative-feedback loop for in-state geothermal development."<sup>8</sup> XGS further stated that "a lack of transmission plan deliverability (TPD) assigned to in-state geothermal" limits the amount of additional in-state geothermal projects that can now enter the interconnection queue.<sup>9</sup>

The CAISO agrees that following implementation of the Interconnection Process Enhancements (IPE), the interconnection queue no longer serves as a reliable standalone indicator of commercial interest. Under the IPE reforms, projects entering the interconnection queue have already been screened based on available and planned transmission capacity. Consequently, the composition of the interconnection queue may not fully reflect commercial

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<sup>7</sup> XGS Energy Inc (XGS) Opening Comments, p. 7; Invenergy Geothermal, LLC (Invenergy) and Maravillosa Solar Energy, LLC (Maravillosa), pp. 1-2; CalCCA Opening Comments, pp. 16-17; SCPA Opening Comments, p. 12.

<sup>8</sup> XGS Opening Comments, p. 7.

<sup>9</sup> *Id.*

interest in resource areas where transmission capacity is constrained or where additional deliverability has not yet been identified. Reliance on queue data alone could therefore underrepresent interest in otherwise viable development opportunities.

To ensure that commercial interest is assessed accurately and that viable resources are not unreasonably constrained in the Commission’s Integrated Resource Planning (IRP) process, the CAISO supports party recommendations that the Commission develop a separate process for gathering and evaluating commercial interest rather than relying primarily on the interconnection queue. The Commission could also consider developing a separate process for gathering and evaluating transmission development interests that could help inform the future integration of out-of-state resources.

#### **F. Procurement Direction is a Critical Component of Supporting Transmission and Resource Development.**

In its opening comments, Southern California Edison Company (SCE) characterized the challenge facing California’s resource and transmission planning processes as “a recurring ‘chicken-and-egg’ dynamic: transmission is delayed due to resource development uncertainty, while resource development is delayed because transmission availability remains uncertain.”<sup>10</sup>

The CAISO agrees that timely coordination between resource and transmission planning is critical, but clarifies the policy-driven transmission framework has been successful in largely addressing this challenge. Under this framework, proactive transmission planning has provided greater certainty for many resources, supporting the successful development of resources across transmission planning areas to meet reliability and policy needs. Coordination between the California Energy Commission (CEC), the Commission, and the CAISO on load forecasting, resource planning, and transmission planning has supported proactive resource and transmission development. At the same time, California’s resource and transmission planning processes do face challenges related to long lead-time and out-of-state resource development, as well as challenges regarding resource development in local areas. In that regard, the CAISO believes that decisive and timely resource planning coupled with coordinated resource procurement is essential to achieving the state’s reliability and policy goals.

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<sup>10</sup> SCE Opening Comments, p. 3.

In its opening comments, CalCCA asserted that although TPP portfolios serve as a transmission planning tool, the resource quantities reflected in the TPP portfolio should not translate directly into procurement obligations.<sup>11</sup> The CAISO does not support CalCCA's recommendation. This approach contributes to ongoing challenges regarding resource development in local areas and resource development for long lead-time and out-of-state resources. Although TPP portfolios serve as a transmission planning tool, the transmission solutions identified through the TPP are developed based on the resource assumptions adopted by the Commission, which reflect individual load serving entities' IRPs and procurement efforts, and are mapped to specific geographic areas. When the Commission maps resources to specific areas, the CAISO plans transmission solutions to ensure those resources can reliably interconnect and deliver energy to load. As a result, the resources identified and mapped in the TPP portfolios are not merely hypothetical constructs. Rather, they represent resource development assumptions that form the basis for transmission planning and investment decisions.

Because these resource assumptions drive real transmission investments and infrastructure decisions, there should be reasonable alignment between the resources assumed in the portfolio and the procurement actions necessary to support their development. Without corresponding procurement direction, transmission investments may not reflect the location of actual resource development and associated transmission needs.

#### **G. The CAISO Provides Clarifying Information on Geographically-Targeted Storage Procurement in the Western LA Basin.**

Several parties requested clarification on the amount of storage resource procurement the CAISO recommended in the Western LA Basin.<sup>12</sup> As explained in opening comments, the CAISO recommended in its 2025-2026 Transmission Plan the procurement of 2,405 MW or 12,075 MWh of storage resources in the Western LA Basin to address reliability and deliverability need by 2032.<sup>13</sup> The CAISO identified storage procurement, which had been mapped to the region by the Commission in previous TPP portfolios, as the only solution capable

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<sup>11</sup> CalCCA Opening Comments, p. 8.

<sup>12</sup> PG&E Opening Comments, p. 16; SCE Opening Comments, pp. 16-17; Alliance for Retail Energy Markets (AREM) Opening Comments, p. 5; California Energy Storage Alliance (CESA) Opening Comments, p. 12.

<sup>13</sup> CAISO Opening Comments, p. 10.

of addressing both the reliability need identified in 2032 within the required timeframe and the deliverability need.

Several parties questioned the feasibility of successfully procuring the recommended level of storage in the Western LA Basin.<sup>14</sup> Pacific Gas and Electric Company (PG&E) specifically commented it “does not believe proposed procurement is feasible because all of the storage in the queue would need to materialize.”<sup>15</sup> As of October 5, 2026, the CAISO interconnection queue contains approximately 4,850 MW of storage projects located in the Western LA Basin, of which 1,000 MW are Cluster 15 projects.<sup>16</sup> There are also 3,150 MW of storage projects in SCE’s Wholesale Distribution Access Tariff (WDAT) queue sited in the Western LA Basin.<sup>17</sup> Together, there is a total of approximately 8,000 MW of proposed storage projects in the Western LA Basin, substantially exceeding the 2,405 MW storage need identified in the 2025-2026 Transmission Plan.

Although additional transmission solutions may be necessary over the longer term to address reliability and deliverability needs in the Western LA Basin, geographically targeted storage procurement represents the most effective near-term solution capable of addressing both the identified reliability need within the required timeframe and the deliverability need. Absent additional storage procurement, the Western LA Basin area would face reliability risks beginning in 2032 until the new transformer at the Mesa substation could be placed in service by mid-2034 to address the reliability need.

Moreover, without geographically targeted procurement, the misalignment between resource planning and transmission planning is likely to persist. The portfolios transmitted to the CAISO for transmission planning contain specific geographic assumptions regarding where resources will be developed. When procurement outcomes diverge materially from those assumptions, transmission solutions identified through the TPP may no longer align with actual resource

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<sup>14</sup> PG&E Opening Comments, p. 17; SCE Opening Comments, p. 16; CalCCA Opening Comments, p.18; Cal Advocates Opening Comments, p. 31.

<sup>15</sup> PG&E Opening Comments, p. 17.

<sup>16</sup> California Independent System Operator, *California ISO Controlled Grid Generation Queue for All: Active*, [Excel spreadsheet](#).

<sup>17</sup> Southern California Edison Company Wholesale Distribution Access Tariff (WDAT) and Rule 21 - Interconnection Queue  
<https://edisonintl.sharepoint.com/:x:/t/Public/Misc/ERXM06BW3xZFqXfsXSzAfaQBJ1hlk1FNeRX7IrUhkYPwQ?e=pHltT8>

development patterns. This can result in transmission investments being developed for resources that may not materialize, while transmission needs emerge in locations not reflected in planning portfolios. Conversely, in areas where Commission identified portfolio resources result in the CAISO deferring reliability or policy-driven transmission development, failure to procure those resources could result in reliability constraints or require additional transmission investments beyond those reflected in the relevant transmission plan.

Targeted procurement requirements help ensure resource development aligns with the geographic assumptions embedded in the portfolios transmitted to the CAISO for study in the TPP. Thus, ordering storage procurement in the Western LA Basin is essential to support the 2032 reliability need and better align procurement outcomes with resource and transmission plans.

### **III. Conclusion**

The CAISO appreciates the opportunity to provide reply comments on the Ruling.

Respectfully submitted

**By: /s/ Marissa Mercado**

Roger E. Collanton

General Counsel

William H. Weaver

Assistant General Counsel

Marissa Mercado

Counsel

California Independent System

Operator Corporation

250 Outcropping Way

Folsom, CA 95630

Tel: 916-963-0521

Fax: 916-608-7222

Email: [mmercado@caiso.com](mailto:mmercado@caiso.com)

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