Memorandum

To: ISO Board of Governors

From: Neil Millar, Vice President of Infrastructure and Operations Planning

Date: May 12, 2026

Re: **Decision on the ISO's 2025-2026 Transmission Plan**

This memorandum requires ISO Board of Governors action.

EXECUTIVE SUMMARY

Each year the California Independent System Operator Corporation undertakes a comprehensive assessment of the transmission needs of the system over a 10- and 15-year planning horizon to produce an annual transmission plan. The ISO's 2025-2026 Transmission Plan provides a comprehensive evaluation of the ISO's transmission grid to identify upgrades needed to serve growing demand for electricity reliably and cost-effectively, successfully meet California's policy goals, and identify transmission projects that can bring economic benefits to consumers. As per the ISO tariff, Management seeks the ISO Board of Governors' approval of the ISO 2025-2026 Transmission Plan, included as Attachment A.

This year's transmission plan is based on state projections provided to the ISO in 2025 that the California load[1] will grow by 15 gigawatts (GW) by 2035 and 20 GW by 2040 while the installed resource capacity[2] will need to increase by more than 74 GW by 2035 and 107 GW by 2040. This capacity requirement is consistent with the base portfolio amounts that were the basis of the 2024-2025 Transmission Plan and aligns with the ISO's most recent 20-Year Transmission Outlook. This reflects greenhouse gas reduction goals and load growth, including the potential for increased electrification occurring in other sectors of the economy, most notably in transportation and the building industry. An increase in the year-over-year rate of peak demand growth, and in particular, an increase of over 2,000 MW in

[1] https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report-iepr/2024-integrated-energy-policy-report-0
[2] The CPUC-provided portfolio calls for 107 GW of installed capacity, beyond its baseline of existing resources and resources already contracted for and under development.

the Greater Bay Area – some of which will accommodate new data centers – from the previous planning cycle, is driving transmission needs to supply the loads.

The proactive and coordinated strategic direction reflected in this year's transmission plan continues to embrace the joint Memorandum of Understanding (MOU) signed by the three parties in December 2022. The MOU drove process revisions to tighten the linkages between resource and transmission planning activities, interconnection processes and resource procurement so California is fully equipped to meet its reliability needs and clean-energy policy requirements.

The ISO is acutely aware of cost and affordability concerns; as in past plans, the emphasis is on achieving the most efficient and cost-effective solutions to meeting these needs, including through the use of reconductoring and grid-enhancing technologies.

Reliability projects driven by load growth and evolving grid conditions as the generation fleet transitions to increased renewable generation represent 33 projects totaling $4.2 billion. The projects are required to reliably supply the increase in forecasted load related to electrification and electric vehicle transportation loads.

The ISO found the need for four transmission projects that are policy-driven, totaling $2.4 billion. They are needed to meet the renewable generation requirements established in the CPUC-developed renewable generation portfolios.

The ISO is recommending for approval one transmission project that is economic-driven, totaling $150 million. This project is needed to address congestion on Path 15 to accommodate the renewable generation requirements established in the CPUC-developed renewable generation portfolios and the increasing load in the CEC forecast. The economic assessment identified the need for one other project as well, however the ISO needs more time for technical analysis and does not recommend it for approval in this cycle.

The plan also confirms the cancelation of the Del Amo - Mesa - Serrano 500 kV project, earlier approved in the 2022-2023 Transmission Plan, due to cost increases, as well as four other smaller projects, as their requirements were found to be met by new projects otherwise required in this plan. The cancelation of these projects seeks to minimize costs and will have no impact on reliability.

The 2025-2026 Transmission Plan also includes information on the ISO's approach to the following topics:

- Relevant federal rulemakings such as FERC Orders No. 1920 and 1920-A, requiring long-term transmission planning[3];
- Development of an actionable West-wide transmission study through the Western Transmission Expansion Coalition (WestTEC);
- Planning for large loads associated with development of new infrastructure such as data centers or hydrogen facilities;
- Transmission project execution and the importance of addressing barriers to timely siting, permitting, financing, and construction of energy infrastructure;
- Continued consideration of grid-enhancing technologies, not only as a best practice, but as required by FERC Orders No. 1920/1920-A and 2023, and encouraged in California legislation;
- Coordination and consultation with state agencies and local regulatory authorities to meet legislative requirements; and
- Opportunities to continue to lead and innovate in execution of the ISO's transmission planning and interconnection processes.

This transmission plan was developed through extensive stakeholder engagement. We communicated preliminary results through stakeholder presentations on September 24 and 25, and on November 19, 2025. The ISO released a draft plan on April 7, 2026, and presented it to stakeholders on April 15, 2026. Based on stakeholder comments received, the ISO conducted additional review and made further revisions, culminating in the revised draft ISO 2025-2026 Transmission Plan.

Management proposes the following motion:

> ***Moved, that the ISO Board of Governors approves the ISO 2025-2026 Transmission Plan attached to the memorandum dated May 12, 2026.***

BACKGROUND

A core responsibility of the ISO is to plan and approve additions and upgrades to transmission infrastructure as conditions and requirements evolve over time to ensure a well-functioning wholesale power market through reliable, safe and efficient electric transmission service. Board approval of the transmission plan is required. Tariff section

[3] The ISO submitted its compliance filing for Order No. 1920 in December 2025 and expects to implement a new transmission planning process under the order beginning in April 2027.

24.4.10 states that upon approval of the plan, all needed transmission additions and upgrade projects and elements will be deemed approved by the ISO Board of Governors.

Collaborative planning efforts

The ISO's 2025-2026 Transmission Plan reflects a strategic and proactive approach to synchronize power and transmission planning, interconnection queuing and resource procurement, and is put forward in close coordination with the state's primary energy planning and regulatory entities, the California Public Utilities Commission (CPUC) and the California Energy Commission (CEC).

As set out in the MOU, expectations are that the CPUC[4] will continue to provide resource planning information to the ISO. The ISO will develop a final transmission plan, initiate the transmission projects, and communicate to the electricity industry specific geographic zones that are being targeted for transmission projects along with the capacity being made available in those zones. The CPUC will in turn provide clear direction to load-serving entities to focus their energy procurement in those key transmission zones, in alignment with the transmission plan. To bring this more coordinated approach full circle, the ISO will also give priority to interconnection requests located within those same zones in its generation interconnection process.

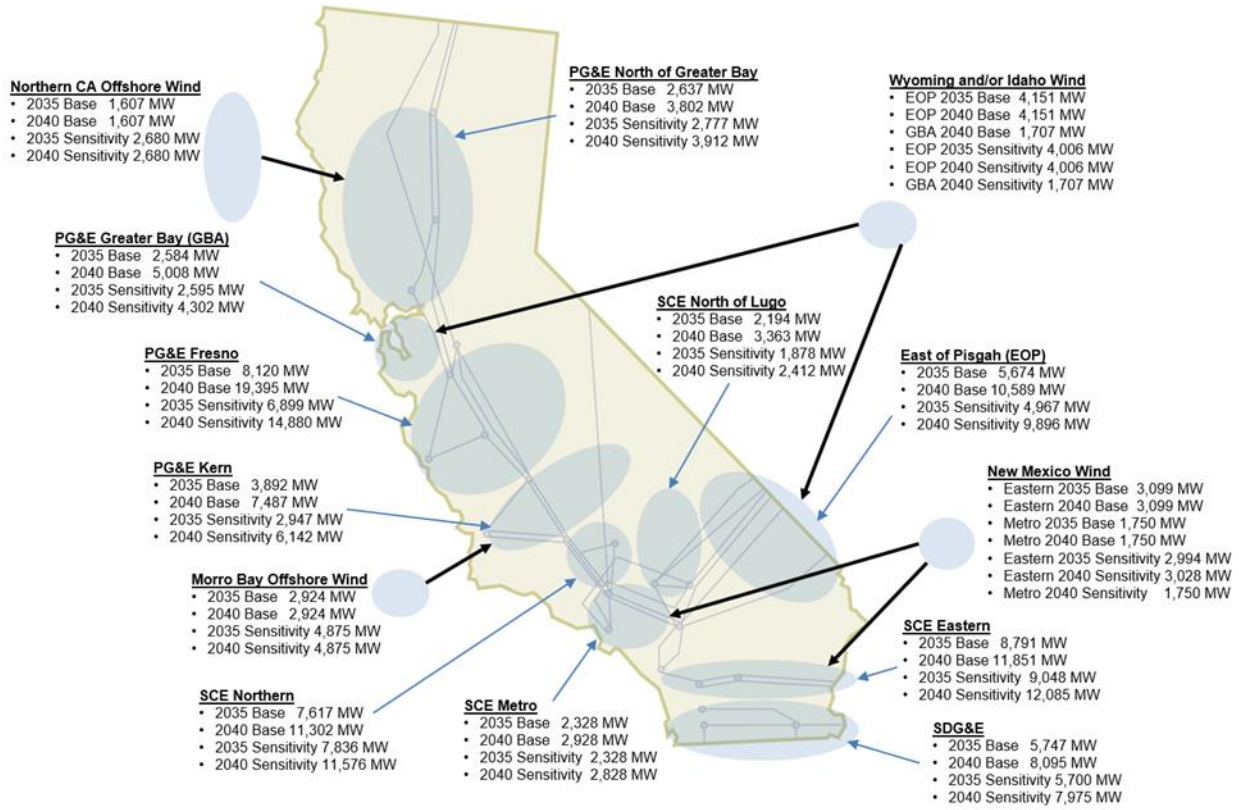
[4] In addition to the needs of the jurisdictional load serving entities in the ISO's footprint, the CPUC currently works to include the needs of the publicly owned utilities and other non-CPUC-jurisdictional utilities in its resource planning efforts for the ISO balancing authority area, and this is an issue that will be receiving additional attention in future planning cycles to ensure the needs of these parties are being addressed.

Resource Planning
Resource planning based on CEC forecasts and led by CPUC identifies optimal areas for adding new resources.

Transmission Planning
Using CEC forecasts and CPUC resource portfolios, the ISO recommends best geographic zones for upgrades and expansion.

Interconnection Process
ISO interconnection process prioritizes requests in zones targeted for transmission upgrades

Resource Procurement
Load-serving entities focus on areas where transmission capacity exists or is being developed



This year's transmission plan is based on state projections[5] provided to the ISO in 2025 that California needs to add more than 107 gigawatts (GW) of new capacity[6] by 2040. As in the past, the ISO continues to explore with stakeholders cost-effective solutions to meeting long-term needs and will continue to do so in the future.

Grid-Enhancing Technologies

Grid-enhancing technologies encompass a range of technologies with specific benefits and opportunities that have to be considered on a case-by-case basis and the ISO supports appropriate application and deployment of these technologies. The ISO has also considered several of them – advanced conductors and flow control devices - as potential alternatives in the annual transmission planning process for many years, with particular success in selecting flow controllers in a number of cases in past plans. In this plan, three of the twelve projects that include reconductoring specifically call for the use of advanced conductors. In addition, two projects will be evaluated in the utilities' engineering phase to determine if advanced conductors can be used in those applications as well. The ISO will continue to explore opportunities for grid-enhancing technologies in future planning processes.

Advancing preferred resources

The ISO's transmission planning efforts focus not only on reliability and meeting the state's policy objectives through advancing policy-driven transmission, but also on helping transform the electric grid in an environmentally responsible way. Preferred resource assumptions are also incorporated into the load forecasts adopted through state energy agency activities that the ISO supports and which provide an additional opportunity for preferred resources to address transmission needs.

The ISO assessed preferred resources to address specific reliability needs within each of the planning area assessments. These are described in Appendix B of the Transmission Plan. The ISO is also continuing to work with local utilities to fine-tune preferred resource requirements identified in earlier transmission plans, including battery storage, which in

[5] In planning for the new resources required to meet system-wide resource needs, CPUC portfolios also took into account the announced retirements of approximately 3700 MW of gas-fired generation to comply with state requirements for thermal generation relying on coastal water for once-through cooling, and the planned retirement of the Diablo Canyon Power Plant. The ISO is not relying on the gas fired generation or Diablo Canyon Power Plant to meet any local capacity or grid support purposes beyond the planned retirement dates. However, the ISO must continue to ensure that they are reliably interconnected and can continue to operate through any potential extension period, so the resources are modeled in the ISO's studies for those purposes only.

[6] The CPUC-provided portfolio calls for 107 GW of installed capacity, beyond its baseline of existing resources and resources already contracted for and under development.

conjunction with conventional transmission upgrades, will meet reliability needs in several areas.

KEY RECOMMENDATIONS

Our comprehensive evaluation of the areas listed above is discussed in the following sections.

Reliability-driven transmission projects

Reliability projects driven by load growth and evolving grid conditions as the generation fleet transitions to increased renewable generation represent 33 projects totaling $4.2 billion. The reliability assessment also identified one previously-approved project to be placed on hold pending reassessment in future cycles.

In arriving at these projects, the ISO and transmission owners performed power system studies to measure system performance against the NERC reliability standards and ISO planning standards, as well as to identify reliability concerns that included, among other things, facility overloads and voltage excursions. The ISO then evaluated mitigation measures and identified cost-effective solutions.

Transmission elements supporting renewable energy goals

The CPUC issued Decision 25-02-026 [7] on February 20, 2025, adopting a base and a sensitivity portfolio for use in the 2025-2026 Transmission Planning Process (TPP). The portfolios are based on the 25-million metric ton greenhouse gas target by 2030 and the 2023 Integrated Energy Policy Report demand forecast. The resource portfolios were relatively consistent with those provided for the 2024-2025 transmission planning process.

The ISO found the need for four policy-driven transmission projects totaling $2.4 billion to meet the renewable generation requirements established in the CPUC developed renewable generation portfolios. The ISO also recommends canceling both the previously approved Serrano–Del Amo–Mesa 500 kV Transmission Reinforcement project and the Helm 230/70 kV Bank project.

[7] https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M557/K879/557879249.PDF

Economic-driven (market efficiency) transmission projects

The objectives of the ISO's economic studies is to identify transmission congestion and analyze cost-effective mitigations through network upgrades. Generally speaking, transmission congestion increases consumer costs because it prevents lower-priced electricity from serving load. Resolving congestion bottlenecks is cost-effective when projected ratepayer savings are greater than the cost of the project. In such cases, the transmission upgrade can be justified as an economic project. Further, the ISO's tariff and Transmission Economic Assessment Methodology enables review of other economic benefits, including the reduction of local capacity costs, as a consideration in assessing the benefits of potential transmission upgrades.

In the economic planning analysis performed as part of this transmission planning cycle in accordance with the unified planning assumptions and study plan, approved reliability and policy network upgrades and those recommended for approval in this plan were modeled in the economic planning database. This ensured that the results of the analysis would be based on a transmission configuration consistent with the reliability and public policy results documented in this year's transmission plan.

The ISO recommends approval of one economic-driven transmission project, the Gates – Los Banos #3 500 kV Line Series Compensation project, totaling $150 million. This project is needed to address congestion on Path 15 to accommodate the renewable generation requirements established in the CPUC-developed renewable generation portfolios and the increasing load in the CEC forecast.

While the Gates – Los Banos #3 500 kV Line Series Compensation project is the sole economic-driven project recommended for approval in this planning cycle, the ISO also identified and confirmed the need for additional new transmission on the 500 kV corridor in the San Joaquin Valley, encompassing the Path 15 corridor and portions of Path 26. The ISO has identified a preferred option to meet these needs, extending as far north as Tesla and south to Midway and Windhub, however given the magnitude and impact on the 500 kV backbone grid, the ISO has identified the need for additional engineering details to be completed before a functional specification can be completed and a competitive process launched. Therefore, the ISO plans to seek Board of Governors approval and move forward with this transmission reinforcement in the 2026-2027 transmission planning cycle.

Interregional Transmission Coordination Process

The ISO is required to coordinate its examination of potential interregional projects submitted by stakeholders into the ISO's process and the processes of the ISO's

neighboring planning entities in the western interconnection - WestConnect and NorthernGrid. The ISO considered all interregional transmission project (ITP) proposals in its 2024-2025 transmission planning process and did not identify an ISO need for the proposed ITPs. WestConnect and NorthernGrid did not evaluate the submitted ITPs to determine if they meet any regional transmission needs because the planning regions determined that there are no regional transmission needs in their 2024-26 regional planning cycle.

Informational Studies

As in past transmission planning cycles, the ISO undertook additional technical studies to help inform future transmission or resource planning activities. These are informational only but may be of interest to stakeholders. They include frequency response analysis and examination of viability of congestion revenue rights.

The CPUC resource portfolios included a sensitivity scenario to be assessed in the 2025-2026 TPP that was based on elevated levels of offshore wind, long-duration storage and geothermal generation. The assessment was for informational purposes with detailed reliability, policy and economic analysis undertaken. The detailed analysis is included in the applicable Appendices G and F of the plan.

STAKEHOLDER FEEDBACK

Stakeholders have provided feedback on the draft ISO 2025-2026 Transmission Plan that was released on April 3, 2024, and presented at a stakeholder meeting on April 9, 2024. The ISO has reviewed all of the stakeholder comments carefully and concluded that the recommendations made in the transmission plan are appropriate. The complete list of comments and the ISO responses will be posted on the ISO's stakeholder initiative page upon completion.[8] The more significant stakeholder concerns, and our response to those concerns, are summarized below.

- **General support for the transmission plan:** Stakeholders generally provided supportive feedback on the transmission plan.

  ISO response: The ISO appreciated the positive feedback, has reviewed all of the stakeholder comments carefully, and has concluded that the recommendations made in the transmission plan are appropriate.

[8] https://stakeholdercenter.caiso.com/RecurringStakeholderProcesses/2025-2026-Transmission-planning-process

- **Concerns with assessment of alternative submitted into the request window:** Some stakeholders commented on consideration of the alternatives that they submitted into the request window.

  ISO response: The ISO reviewed all of the submissions into the request window when determining need for the project and which projects are recommended for approval.

- **Concerns regarding the overall cost of the projects on rates:** A number of stakeholders commented on the impacts of recommended projects on the transmission access charge.

  ISO response: The ISO appreciates the concern expressed by stakeholders. In the assessment of alternatives to mitigate the identified constraints, the ISO seeks to recommend cost effective projects that maintain the required reliability performance of the transmission system.

- **Concerns regarding the cancelation of the Serrano–Del Amo–Mesa 500 kV Transmission Reinforcement:** A couple of stakeholders expressed concerns with the impacts of the cancelation of the project based on the most recent transmission plan deliverability allocation reports and potential impact to the Cluster 16 intake process and Cluster 15 projects currently in queue.

  ISO response: The ISO understands the concerns and will be making methodology changes when determining the available deliverability in future processes, subject to the approval of the Trout Canyon-Lugo 500 kV Line project. Part of the issue is related to the CPUC base portfolio which includes significant battery resources within the SCE Metro area, as well as identified as needed for local area reliability assessment in the 10-year planning horizon. When assessing the available deliverability, only existing resources and those seeking deliverability have historically been included in the study. The ISO is planning to modify the transmission plan deliverability availability assessment methodology to include the battery storage in the SCE Metro area as that storage is being relied on to address a known transmission system need. In addition, the ISO will continue to assess the impacts of the cancelation of the project on interconnection requests within the ISO queue"

- **Concerns of application of eligibility of competitive solicitation:** One stakeholder indicated that the Lugo 500 kV Reactive Power Reinforcement project should be considered eligible for competitive solicitation.

ISO response: The ISO has reviewed the project and while the ISO generally supports as much competition as feasible, this needs to be an integrated component of the substation advanced originally through the generation interconnection process.

CONCLUSION

The ISO 2025-2026 Transmission Plan provides a comprehensive evaluation of the ISO's transmission grid to identify upgrades needed to adequately meet California's policy goals, address grid reliability requirements and bring economic benefits to consumers. The combination of continued projections of renewable generation and load forecast growth are driving an increase in transmission requirements. The ISO found the need for 38 projects totaling $6.7 billion. The projects developed in this year's planning cycle represent a proactive transition to expected additional growth in next year's transmission planning process, providing reliability, access to renewable generation needed to meet state goals, and effective economic benefits into the future. Further, the plan recommends that four previously approved projects be placed on hold pending further review in the next planning cycle and that five previously approved projects be cancelled, with no risk to affordability.

Based on the findings that the transmission solutions listed above are the most cost-effective, feasible solutions for meeting the identified transmission needs in the ISO's system, Management recommends that the ISO Board of Governors approve the attached ISO 2025-2026 Transmission Plan.