Decision on 2024-2025 Transmission Plan

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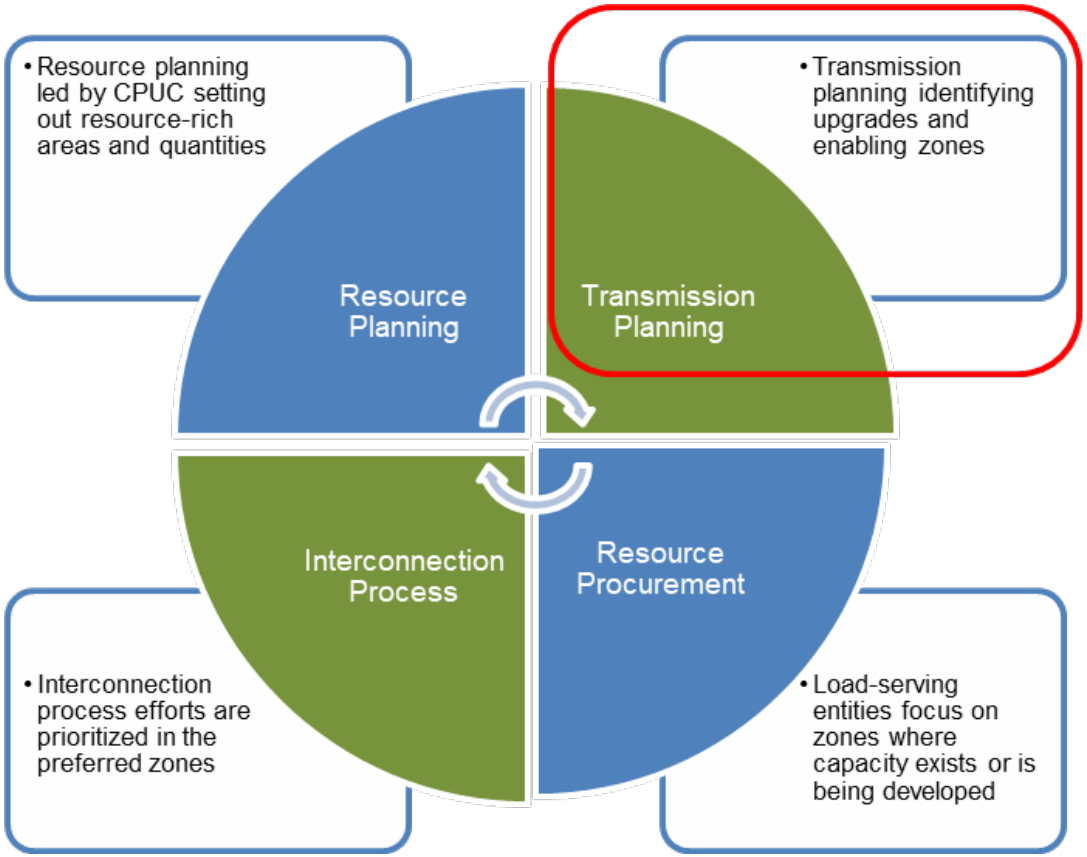
Management is seeking approval of the 2024-2025 Transmission Plan.

- The primary drivers of capital costs in this year's plan include the resources in the California Public Utilities Commission (CPUC) base portfolio to meet state policy goals, and increases in the pace of load growth, particularly in the Greater Bay area.

- The ISO is always focused on costs; recommendations are based on long-term cost-effectiveness and efficiency of solutions.

- For the first time, the ISO has extended the annual planning process to a 15-year horizon, responding to state legislature requests

A 2022 Memorandum of Understanding between the CPUC, California Energy Commission (CEC), and ISO set the course for transformational change

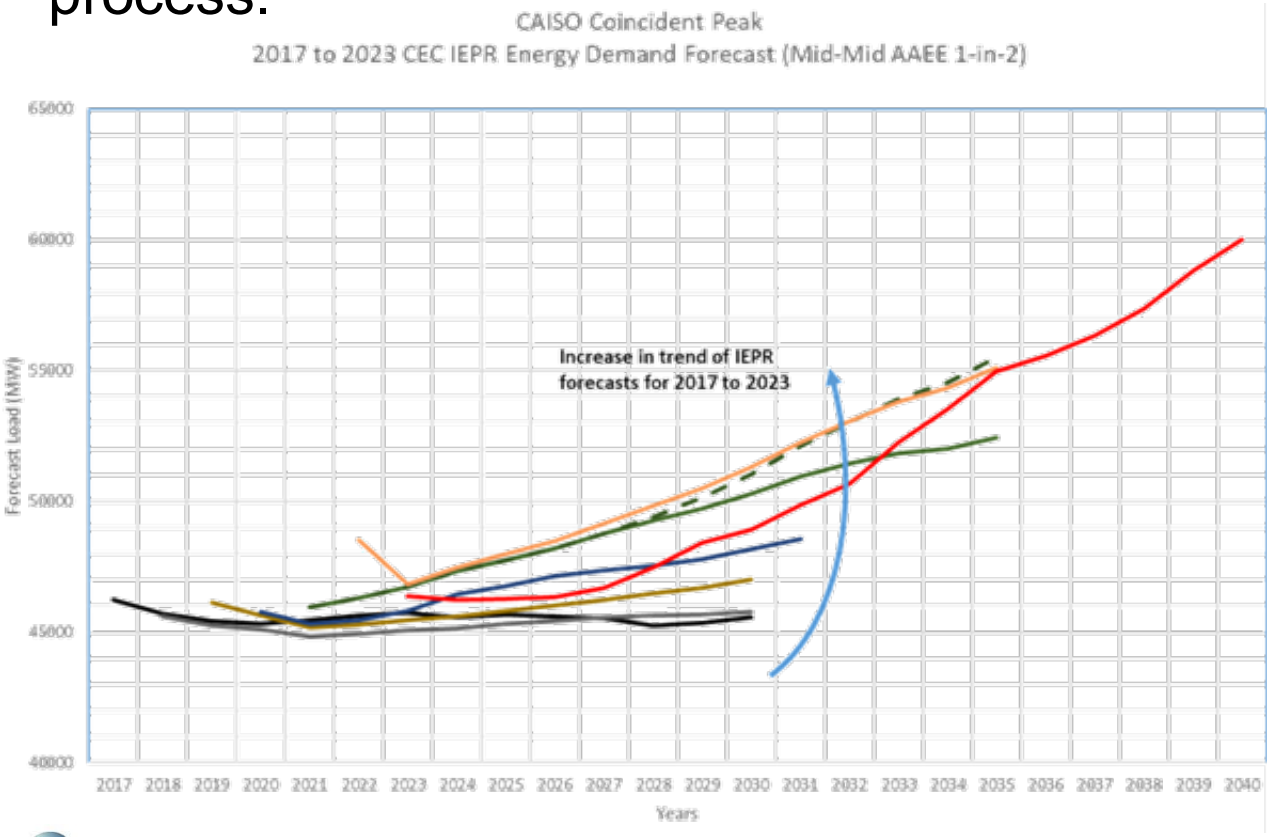


The MOU seeks to:

- Tighten the linkage between resource and transmission planning, procurement direction, and the ISO interconnection process.
- Reaffirm the existing state agency roles and coordination on a single forecast set.

Load forecasts are increasing in pace and scale each year

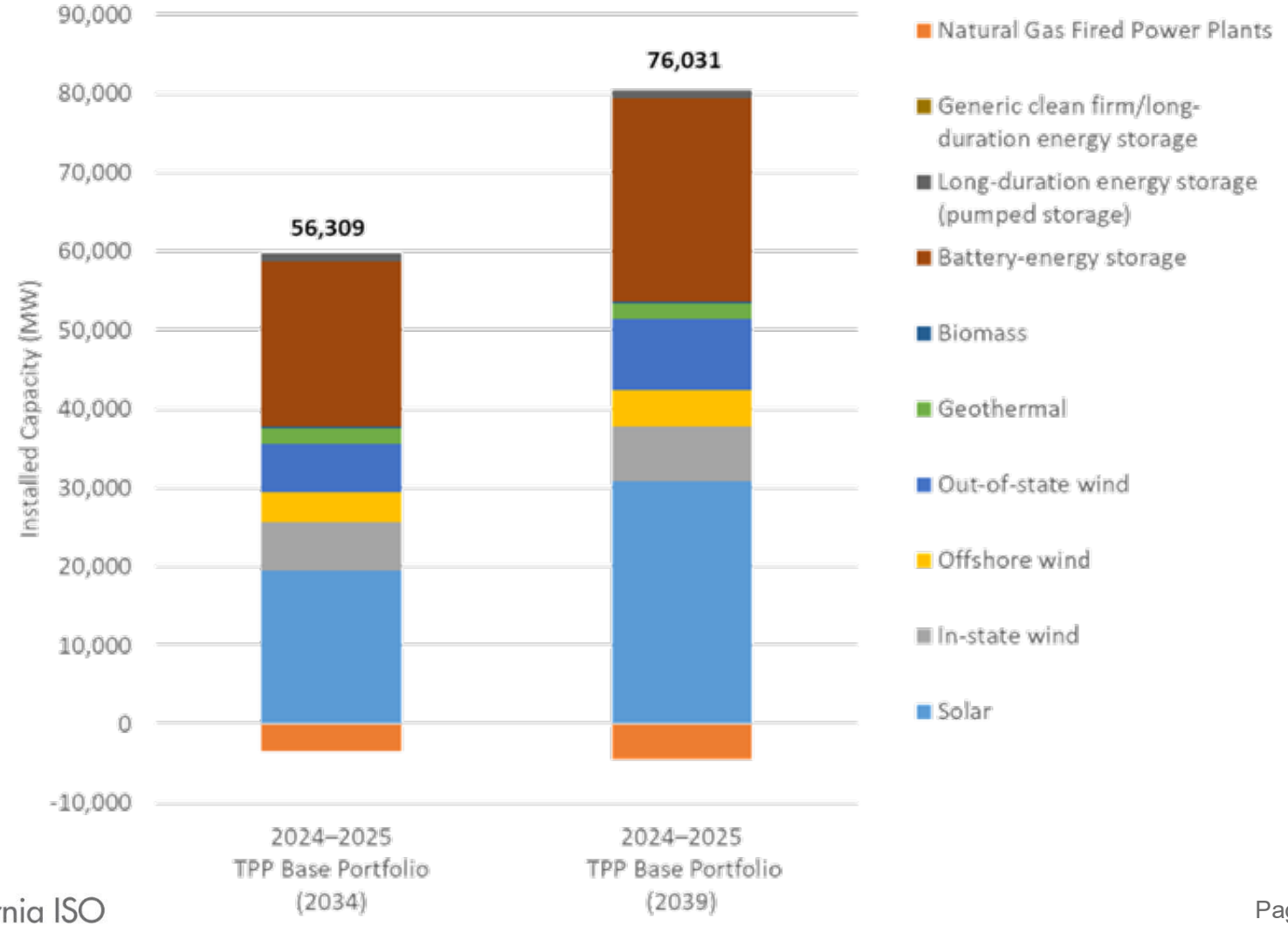
The CEC's load forecast is used in both the CPUC's Integrated Resource Planning process and the ISO's transmission planning process.



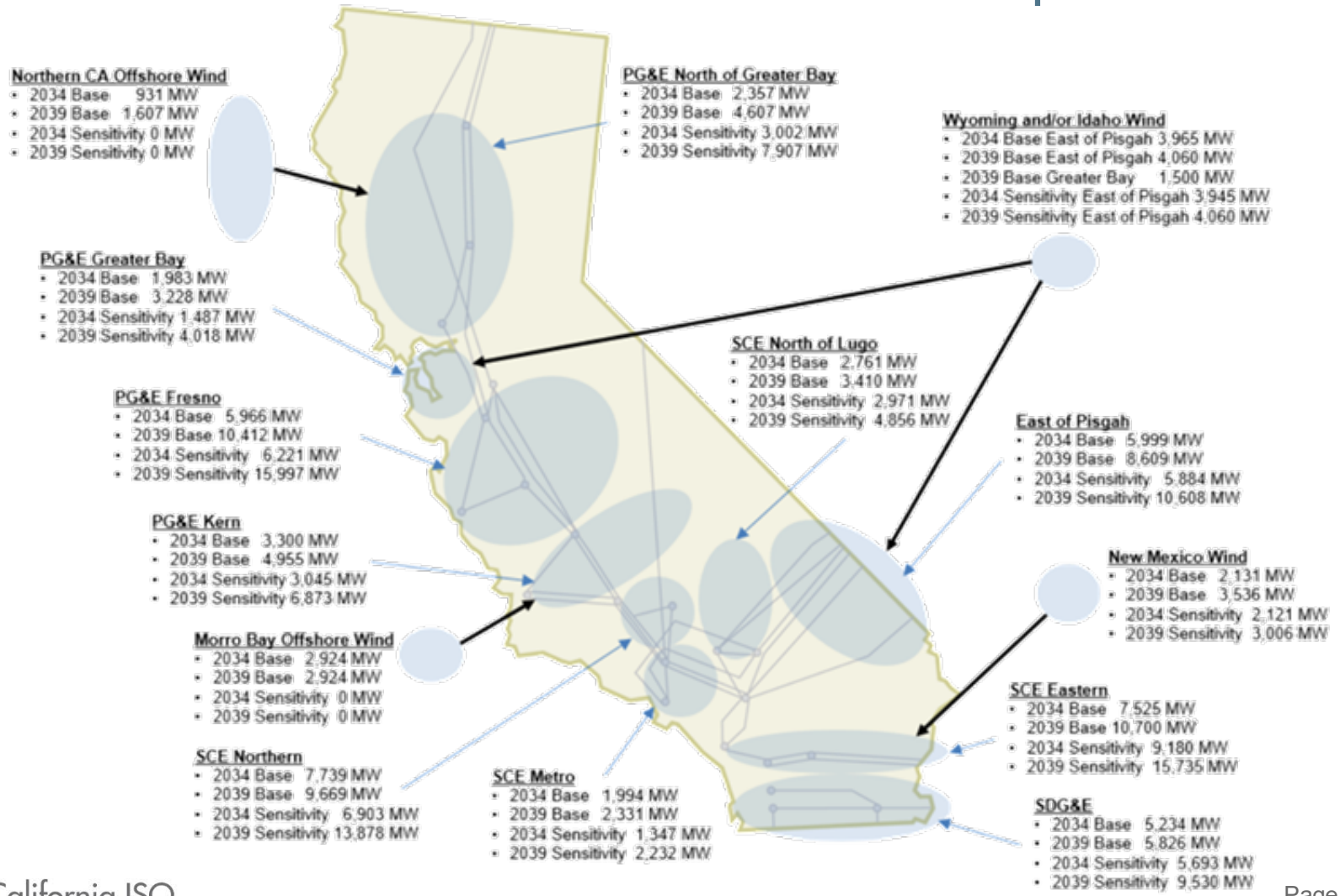
The ISO uses:

- 1-year-in-10 weather event forecast for local reliability studies
- 1-year-in-5 weather event forecast for bulk system reliability-driven and policy-driven studies
- 1-year-in-2 weather event forecast for economic (market efficiency) studies

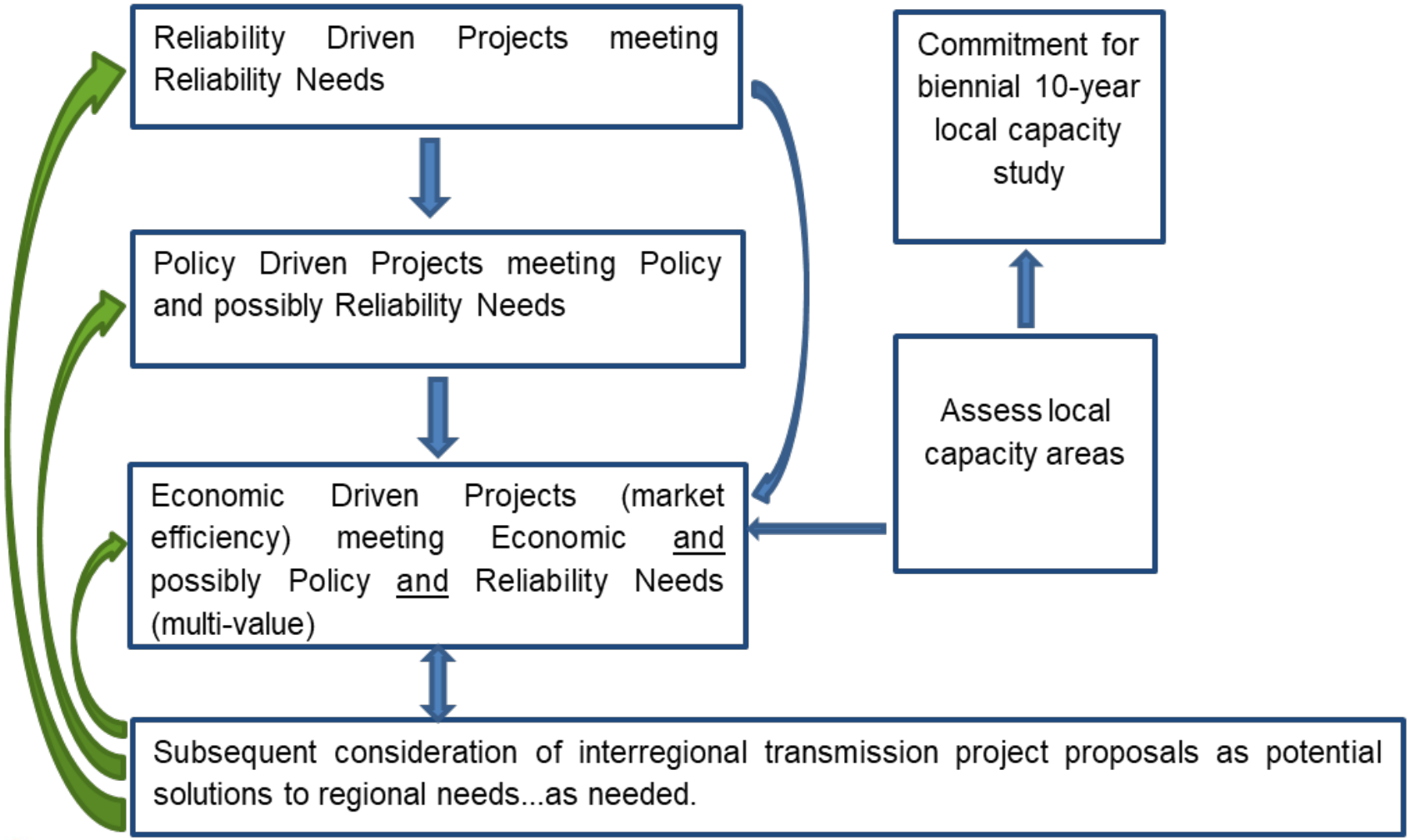
The CPUC and Local Regulatory Authority resource portfolios are the basis of the transmission plan.



The 2024-2025 Transmission Plan continues to uses zonal approach which enables clear direction and prioritization.



Studies are coordinated as a part of the transmission planning process.



Recommended reliability-driven projects

- Total of 28 reliability projects included in the 2024-2025 transmission planning process, with an estimated cost of $4.6 billion.
- 7 reliability driven projects were approved by ISO Management following the intent to approve as presented in the November transmission planning process stakeholder meeting and review of stakeholder feedback.
- 21 additional reliability projects have been recommended in the draft transmission plan. These projects are driven by load growth and evolving grid conditions as the generation fleet transitions to increased renewable generation.

No.	Project Name	PTO Area	Planning Area	Est Cost ($M)
8	Sloan Canyon Tertiary Reactors	GLW	VEA	10
9	Ames Distribution – Palo Alto 115 kV transmission line	PG&E	GBA	84
10	Cortina #3 60 kV Reconductoring	PG&E	CVLY	55.5
11	Gold Hill-El Dorado Reinforcement	PG&E	CVLY	127
12	Greater Bay Area 500 kV Transmission Reinforcement	PG&E	GBA	700
13	Metcalf Substation 500/230 kV Transformer Bank Addition	PG&E	GBA	182
14	Metcalf-Piercy & Swift and Newark-Dixon Landing 115 kV Upgrade Re-scope	PG&E	GBA	135
15	North Oakland Reinforcement Project	PG&E	GBA	1,127
16	San Jose B – NRS 230 kV line	PG&E	GBA	200
17	San Mateo 230/115 kV Transformer Bank Addition Project	PG&E	GBA	110
18	South Bay Reinforcement Project	PG&E	GBA	434
19	South Oakland Reinforcement Project	PG&E	GBA	250
20	West Fresno 115 kV Voltage Support	PG&E	Fresno	60
21	Alamitos 230 kV SCD Upgrade	SCE	SCE Main	5
22	Julian Hinds-Mirage 230 kV Advanced Reconductor	SCE	Eastern	76
23	Kramer-Coolwater 115 kV Line Looping into Tortilla 115 kV Substation	SCE	NOL	37
24	Serrano 230 kV SCD GIS Bus Split	SCE	SCE Main	28
25	Serrano 500 kV SCD Mitigation	SCE	SCE Main	183
26	Tortilla 115 kV Capacitor Replacement	SCE	NOL	5
27	Coronado Island Reliability Reinforcement Phase II	SDG&E	SDG&E	66
28	Downtown Reliability Reinforcement	SDG&E	SDG&E	500
			Total	**4,574.2**

The ISO recommends the following actions for previously approved transmission projects on hold from the previous planning cycle:

- Keep the Moraga- Sobrante 115 kV Line Reconductor project on hold; and

- Cancel the Ravenswood 230/115 kV Transformer #1 Limiting Facility Upgrade project.

Recommended policy-driven projects:

To meet the renewable generation requirements established in the CPUC-developed renewable generation portfolios, three policy-driven transmission projects are recommended, totaling $289.5 million.

No.	Project Name	PTO Area	Planning Area	Est. Cost ($M)
1	Eagle Rock- Fulton- Silverado 115 kV Line Reconductor	PG&E	NCNB	92.9
2	Reconductor of GWF – Kingsburg 115 kV line	PG&E	Fresno	81.6
3	New Helm 230/70 kV Bank #2	PG&E	Fresno	115
			Total	**289.5**

The ISO does not recommend any economic-driven projects in this cycle.

- The ISO conducted economic studies investigating opportunities to reduce total costs to ratepayers through transmission upgrades not otherwise needed for reliably accessing renewables and serving load.

The plan pays significant attention to uses of grid enhancing technologies

- Grid enhancing technologies encompass a range of technologies with specific benefits and opportunities; such as
  - advanced conductors
  - power flow controllers
  - dynamic line ratings
  - topology optimization
- The use of grid enhancing technologies in this planning cycle consists of the use of advanced conductors in 5 applications.
- The transmission plan also summarizes the use of grid enhancing technologies in past years' transmission plans.
- The ISO will also submit a report on the use of grid enhancing technologies in this cycle to the state legislature, pursuant to Assembly Bill 2779 (Petrie-Norris, 2024), after the transmission plan has been approved.

FERC Order 1000 Interregional Coordination Process

- Five potential projects were submitted into the ISO's 2024 interregional transmission project submission window in the first quarter of 2024.
- The ISO considered all interregional transmission project proposals in its 2024-2025 transmission planning process and did not identify an ISO regional need for the proposed interregional transmission projects.

Stakeholder comments

- General support for reliability, policy and economic assessment
- Concerns with assessment of alternatives submitted into the request window
  - In particular, concerns with the ISO not recommending certain proposals for approval
  - The ISO will continue to explore the Warnerville-Newark Transmission Expansion Project submitted by Hetch Hetchy Water and Power as a possible extension of the 2024-2025 planning cycle
- Concerns with transparency of transmission plan deliverability reservation for long lead-time resources
- Concerns with assessment of grid enhancing technologies

Summary

- 31 projects totaling $4.8 billion were found to be needed

- Two projects eligible for competitive procurement:

Project	Need
Greater Bay Area 500 kV Transmission Reinforcement	Reliability-driven
San Jose B – NRS 230 kV line	Reliability-driven

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Management recommends the ISO Board of Governors approve the 2024-2025 Transmission Plan.

- Ensures reliability in the face of increasing load growth
- Continues to use a zonal basis for resource development as a foundation for interconnection process prioritization and focus for procurement activities
- Continues to pursue low emission strategies in addressing reliability needs on the ISO controlled grid
- Sets a foundation for higher renewable energy goals
- Provides for prudent and economic development of the transmission system