Decision on ISO 2025-2026 Transmission Plan

Jeff Billinton
Director, Transmission Infrastructure Planning

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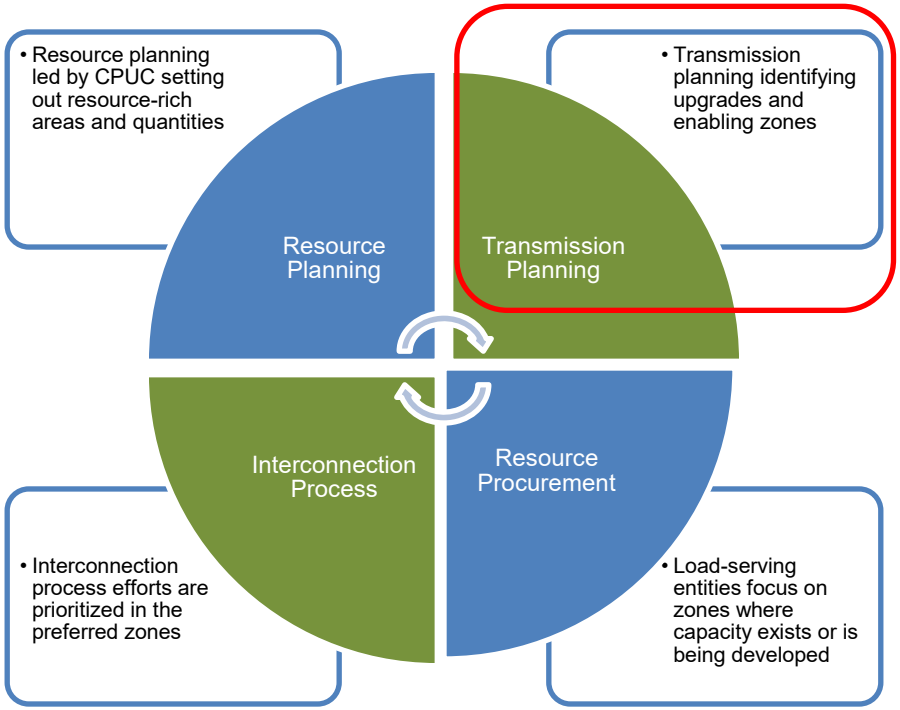
Management is seeking approval of the ISO 2025-2026 Transmission Plan

- The primary drivers of the capital costs within this year's plan are:
  - Increases in the pace of load growth, particularly in the Greater Bay area
  - The additional resources needed to serve load and meet state policy goals in the California Public Utilities Commission (CPUC) resource portfolios
- The ISO is always focused on costs; recommendations are based on the long-term effectiveness and efficiency of solutions

Transmission Planning is coordinated with key state load and resource forecasting

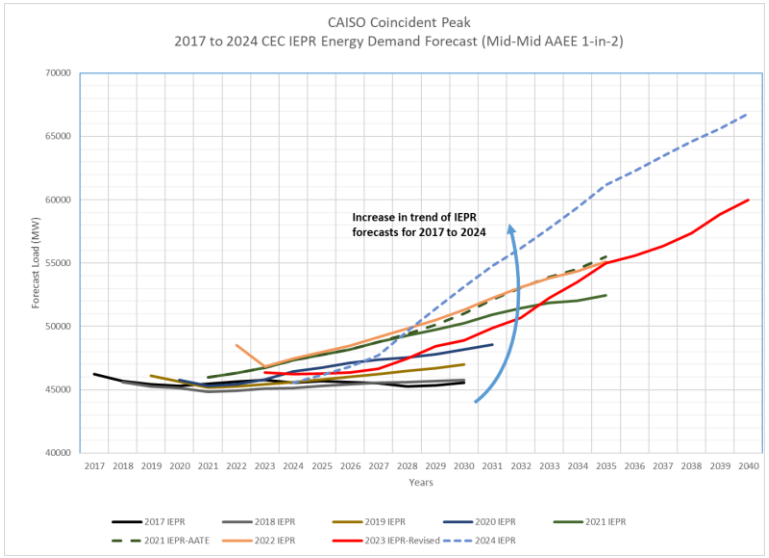


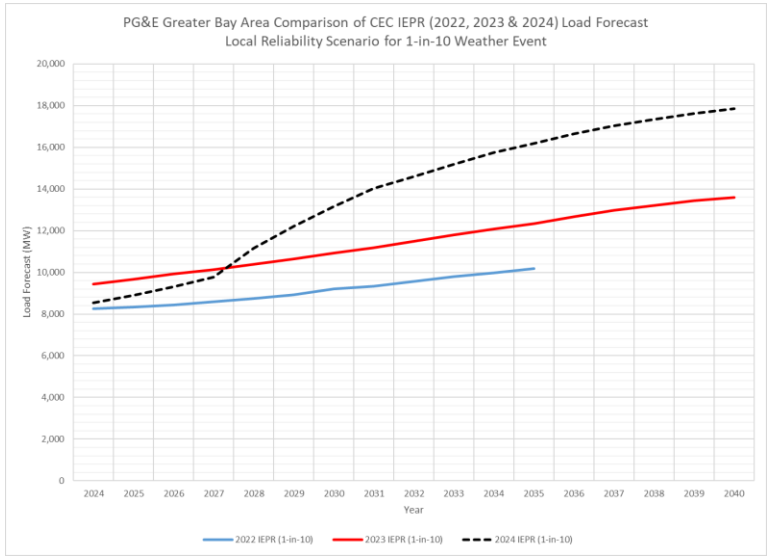
The 2022 Memorandum of Understanding between the CPUC, California Energy Commission (CEC), and ISO:

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

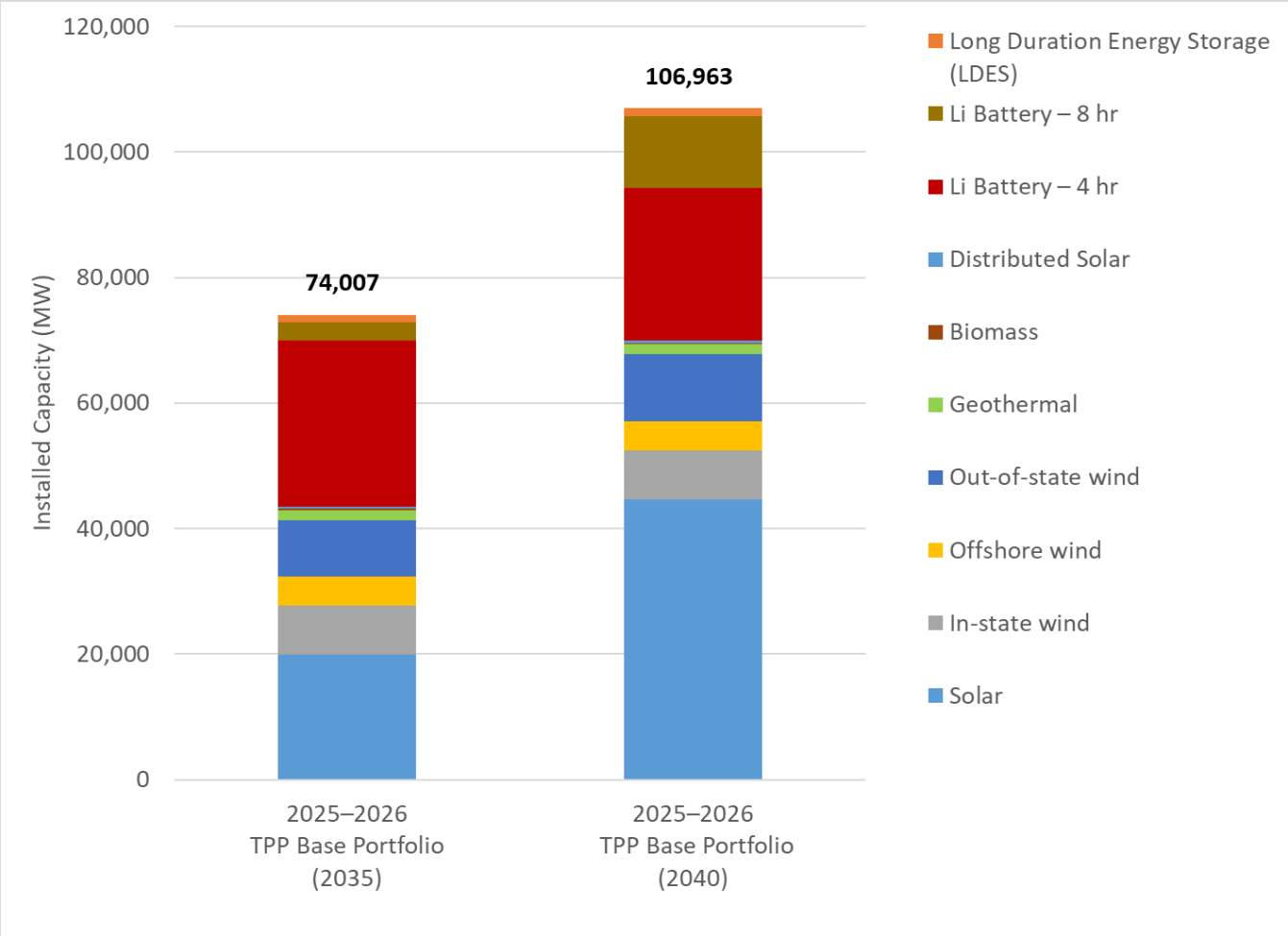
The CEC load forecast for the ISO system continues to increase in 2025-2026 planning cycle

- The increase in load growth is seen across the entire ISO system,, especially in 10 to 15-year planning horizon, and particularly in the Greater Bay area
- The Greater Bay area is affected by concentration of datacenter loads in addition to other load growth

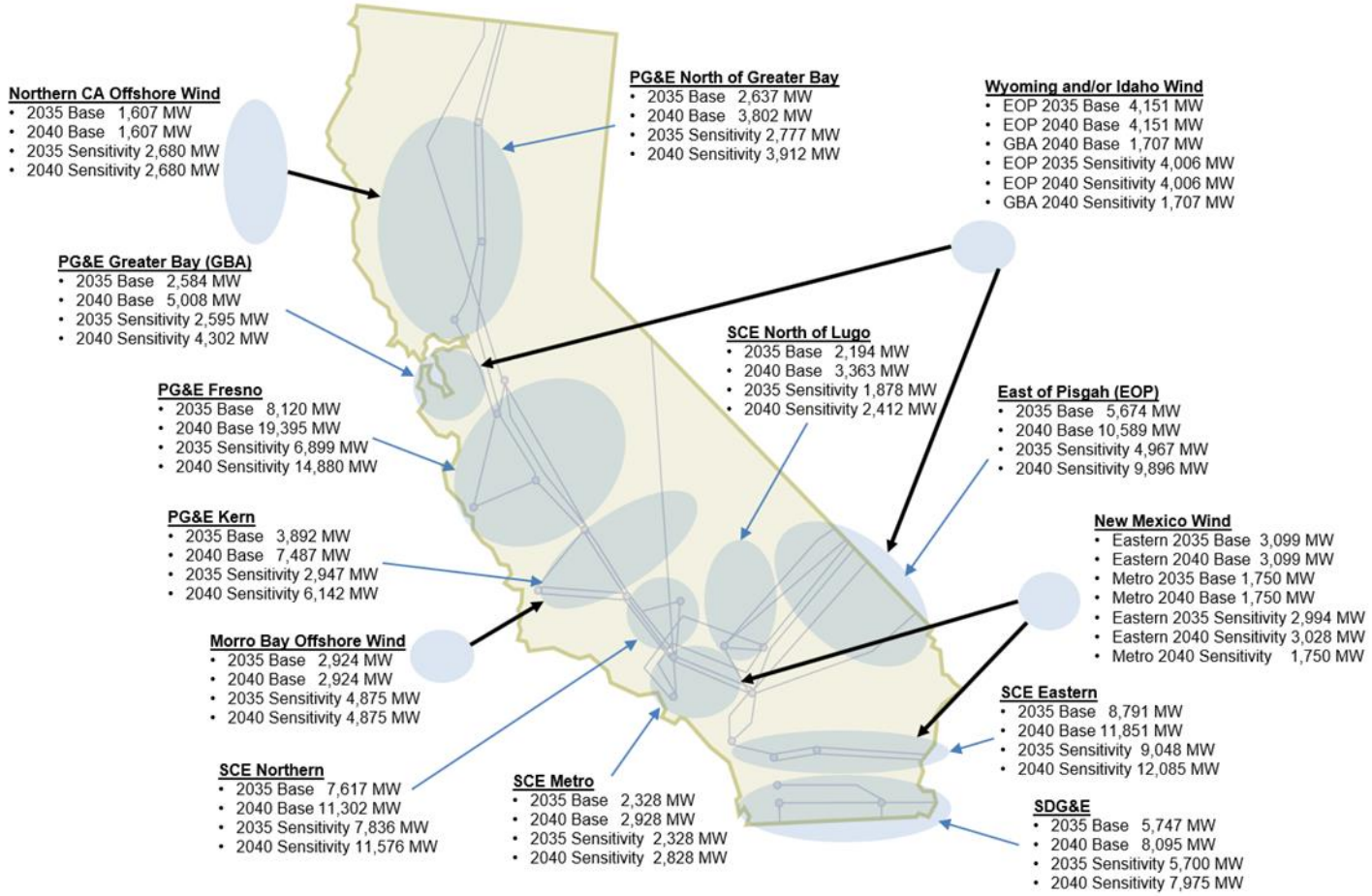




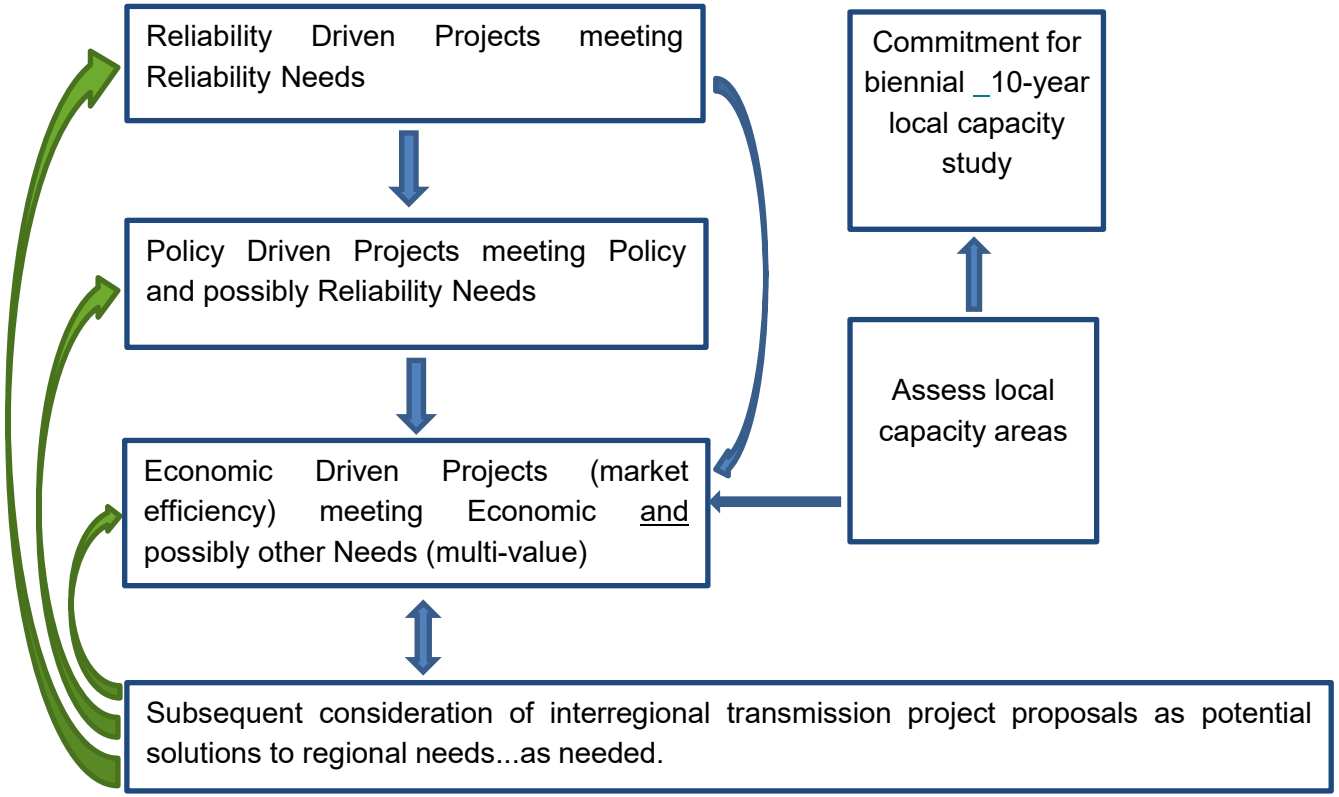
The CPUC resource portfolios have also grown in response to increasing load requirements



The ISO 2025-2026 Transmission Plan continues to use a zonal approach which enables clear direction and prioritization



The ISO's studies are coordinated as a part of the transmission planning process



Recommended reliability-driven projects

- 33 reliability-driven projects have been identified as need, with an estimated cost of $4.2 billion
- Two reliability-driven projects were approved by ISO management
- 26 additional reliability projects are recommended for approval. These projects are driven by load growth and evolving grid conditions as the generation fleet transitions to increased renewable generation.
- Five previously approved projects with scope changes to address current needs are recommended for approval

#	ID	Project Name	PTO	Area	Est. Cost ($M)
1	1011-R-16	Oro Loma 70 kV Area Reinforcement (Re-scope)	PG&E	GFA	38
2	2526-R-01	Walnut 230 kV CB Upgrade	SCE	Metro	15
3	2526-R-02	Ames 115 kV Short Circuit Mitigation	PG&E	GBA	5
4	2526-R-03	DeAnza 115 kV Substation	PG&E	GBA	260
5	2526-R-04	Lincoln - Pleasant Grove Line Reconductoring	PG&E	CVLY	120
6	2526-R-05	Los Esteros 230 kV Short Circuit Mitigation	PG&E	GBA	20
7	2526-R-06	Mariposa 70 kV Voltage Support	PG&E	GFA	63
8	2526-R-07	Metcalf 230 kV Short Circuit Mitigation	PG&E	GBA	405
9	2526-R-08	Midway 115 kV Bus Upgrade	PG&E	Kern	89
10	2526-R-09	Monta Vista – Loyola – Los Altos 60 kV Line Reconductoring	PG&E	GBA	64
11	2526-R-10	Monta Vista 230/115 kV Transformer Bank Addition	PG&E	GBA	104
12	2526-R-11	Newark 115 kV Short Circuit Mitigation	PG&E	GBA	60
13	2526-R-12	Newark 230/115 kV Bank Upgrade	PG&E	GBA	63
14	2526-R-13	Nortech 115 kV Short Circuit Mitigation	PG&E	GBA	5
15	2526-R-14	San Jose B 230/115 kV Transformer Bank Addition	PG&E	GBA	69
16	2526-R-15	Saratoga-Vasona 230 kV Line Reconductoring	PG&E	GBA	178
17	2526-R-16	South Oakland Reinforcement (Phase 2)	PG&E	GBA	86
18	2526-R-17	Tesla – Trimble – Metcalf 230 kV Corridor Expansion	PG&E	GBA	1424
19	2526-R-18	Trimble 115 kV Short Circuit Mitigation	PG&E	GBA	16
20	2526-R-19	Lugo 230 kV CB Upgrade	SCE	NOL	5
21	2526-R-20	Devers 230 kV SCD Upgrade	SCE	Eastern	186
22	2526-R-21	Lugo 500 kV Reactive Power Reinforcement	SCE	Bulk	450
23	2526-R-22	Mesa - Laguna Bell 230 kV #2 Upgrade	SCE	Metro	56
24	2526-R-23	Etiwanda and Mira Loma 230 kV SCD Upgrade	SCE	Metro	55
25	2526-R-24	Penasquitos- Mira Sorrento 69 KV #2 line	SDG&E	SDG&E	115
26	2526-R-25	TL600B Reconductor	SDG&E	SDG&E	8
27	2526-R-26	TL623C Reconductor	SDG&E	SDG&E	5
28	2526-R-27	TL690B & TL 697 Reconductor	SDG&E	SDG&E	33
29	2425-R-02	Ames Distribution – Palo Alto 115 kV line (Re-scope)	PG&E	GBA	52
30	1314-R-17	Morgan Hill Area Reinforcement project (Re-scope)	PG&E	GBA	28
31	2425-R-25	South Bay Reinforcement Project (Re-scope)	PG&E	GBA	0
32	1819-E-01	East Marysville 115/60 kV Project (Re-scope)	PG&E	CVLY	69
33	2324-R-20	Short Circuit Mitigation for Imperial Valley 230 kV Circuit Breakers (Re-scope)	SDG&E	SDG&E	33
				TOTAL	4178

Previously approved reliability-driven projects to be placed on-hold

- Management recommends four previously approved projects be placed on-hold for further review in the next planning cycle:
  - Alamitos 230 kV short circuit duty upgrade;
  - Lone Tree – Cayetano – Newark Corridor Series Compensation;
  - Coolwater 115 kV Line Looping into Tortilla 115 kV Substation; and
  - Julian Hind-Mirage 230 kV Line Upgrade Project

Previously approved reliability-driven projects recommended to be canceled

- Management recommends the following three previously approved reliability driven projects be cancelled:
  - East Shore bus re-configuration;
  - Metcalf 230/115 kV transformers circuit breaker addition; and
  - Moraga-Sobrante 115 kV line re-conductor.

Recommended policy-driven projects

- To meet the renewable generation requirements established in the CPUC-developed renewable generation portfolios, four transmission projects that are policy-driven are recommended, totaling $2.4 billion
- One project is eligible for competitive procurement

ID	Project Name	PTO	Area	Est. Cost ($M)
2526-P-01	Drum - Higgins 115 kV Line Reconductoring	PG&E	CVLY	308
2526-P-02	East Shore 230 kV Area Reinforcement	PG&E	GBA	257
2526-P-03	Oleum Area Reinforcement	PG&E	GBA	144
2526-P-04	Trout Canyon - Lugo 500 kV Line	SCE	EOP	1685
			TOTAL	2395

Previously approved policy-driven projects recommended to be canceled

- Management recommends the following two previously approved projects be cancelled:
  - Serrano–Del Amo–Mesa 500 kV Transmission Reinforcement project; and
  - Helm 230/70 kV Bank project

Economic-driven (market efficiency) projects

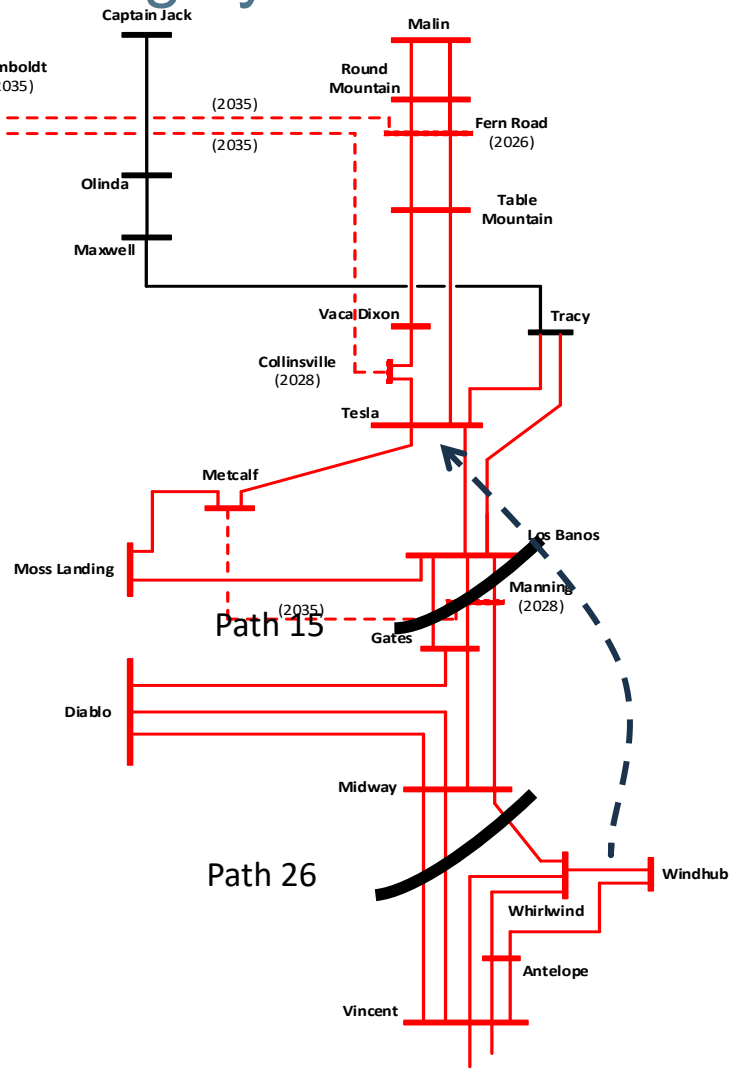
- Each year the ISO studies and monitors expected levels of congestion on the transmission system through detailed production cost modeling, and prioritizes study areas to assess if the benefits of alleviating that congestion exceed the cost of additional transmission upgrades
- One project driven solely by economic considerations is recommended for $150 Million

ID	Project Name	PTO	Area	Est. Cost ($M)
2026-E-01	Gates – Los Banos #3 500 kV Line Series Compensation	WAPA	Fresno	150

- The need for upgrades on Path 15/26 has been established, but additional time is needed for engineering detailed analysis that will be undertaken in the next planning cycle.

Economic-driven projects requiring engineering detail and cost estimating in next planning cycle

- Path 15
  - Need identified for addressing congestion
  - Potential 500 kV line from Whirlwind/Windub area to Tesla substation
  - Bulk system studies required and adoption of new congestion cost allocation will be undertaken in next planning cycle
- Path 26
  - Need identified for addressing congestion
  - Further assessment of feasibility of RAS for south-north flows (similar to north-south flows) for the common corridor outage of Midway-Vincent 500 kV #1 and #1 lines to be explored in next planning cycle



FERC Order 1000 Interregional Coordination Process

- The ISO considered all interregional transmission project proposals in its 2024-2025 transmission planning process and did not identify an ISO need for the proposed interregional transmission projects
- WestConnect and NorthernGrid also determined that there were no regional transmission needs in their 2024-2026 regional planning cycle, their precursor step to considering if there is a need for an interregional project
- No further assessment was needed within the 2025-2026 transmission planning process

Stakeholder comments

- General support for reliability, policy and economic assessment

Summary

- 38 projects totaling $6.7 billion were found to be needed
- One project is eligible for competitive procurement:

Project	Need
Trout Canyon-Lugo 500 kV Transmission Line	Policy-driven

Management recommends the ISO Board of Governors approve the ISO 2025-2026 Transmission Plan

- 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 focusing on the most efficient and cost-effective solutions