



California ISO

2026 Summer Grid Reliability

Assembly Utilities and Energy Committee - Oversight Hearing

July 1, 2026

Primary Roles in Energy Supply Planning & Services



CARB

- Scoping Plan
- Air Regulations
- Carbon Market/Cap-and-Invest



CEC

- California Electric Demand Forecast
- Municipal Utility Renewable Portfolio Standard (RPS) Oversight



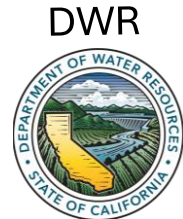
CPUC

- Integrated Resource Planning (IRP)
- Resource Adequacy (RA)
- Load serving entity RPS Oversight



CAISO

- Market Operation
- Transmission Operation and Generator Dispatch
- Transmission Planning



DWR

- Electricity backstop responsibilities such as the Electricity Supply Strategic Reliability Reserve Program and administering the Diablo Canyon Extension Fund



Actions - Grid Reliability & Clean Energy Transition

- **Improving Grid Planning Processes**
 - Improvements to forecasting for climate change-induced weather variability and electrification
 - Ordering sufficient and diverse energy resource procurement
 - Improvements to Resource Adequacy process and requirements
- **Scaling Supply & Demand-Side Clean Energy Resources**
 - Track procurement
 - Improve interconnection & permitting process
 - Opt-In Permitting
 - Transmission Permitting pilot program & dashboard
 - SB 846 (2022) requirements, including demand flexibility goal
- **Preparing for Extreme Events**
 - Agencies developed playbook for extreme events
 - Established dependable contingency resources
 - State funded Strategic Reliability Reserve, including OTCs, DSGS, & DEBA
 - Ratepayer programs, including ELRP
 - Non-programmatic, including emergency transfers & 202c waivers

Procurement Ordered by CPUC

In megawatts,* by year



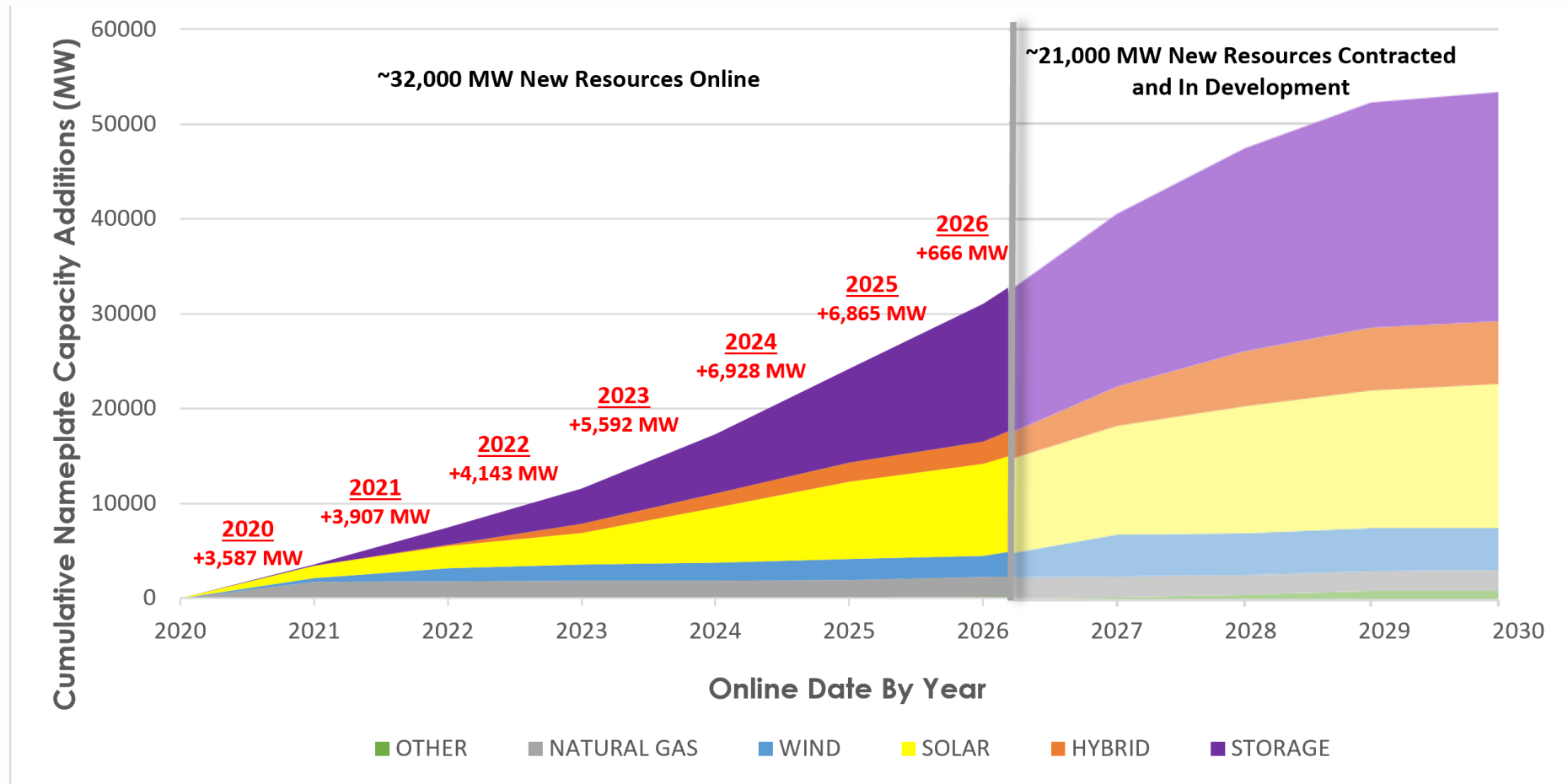
CPUC Orders	Amount (MW)	Time Period
Near-Term Reliability (ordered 2019)	3,300	2021-2023
Mid-Term Reliability (MTR) (ordered 2021)	11,500	2023-2025; 2028 (for LLTs**)
Supplemental MTR (ordered 2023)	4,000	2026-2027
Procurement Order 2026 (ordered in February)	6,000	2030-2032

Total Ordered: 24,800 MW

* Megawatts reflect Net Qualifying Capacity (NQC)

** The order requires LSEs to procure 2,000 MW of long lead time (LLT) resources by 2028. Per D.24-02-047, LSEs may request extensions for their required LLT procurement for commercial online dates no later than June 1, 2031.

CAISO Cumulative New Capacity (Nameplate MW)



Note: Data shown here shows a snapshot of new resources added to CAISO grid Q12020 – Q2 2026, including specified CAISO imports. Also shown is a projection of future new resources based on contracts in place by March 2026. "Other" resources includes geothermal, biomass, biogas, and hydropower.

2026 Summer Grid Readiness





2026 Summer - Grid Readiness & Outlook

- **The current 2026 forecast shows a further improved outlook compared to recent years.**
 - No shortfalls projected under traditional planning conditions
 - No shortfalls projected under extreme conditions like those experienced in 2020 and 2022, **largely due to 32,000 MW of new resources that have come online since 2020**
 - Battery storage **is providing 16,000 MW of new capacity since 2020** and continues to scale significantly
 - **Market is highly motivated to bring online new projects in advance of federal tax credit expirations**
- **Long-lasting west-wide extreme heat conditions, if combined with sudden events like a fire affecting key transmission lines, could still create tight conditions on the grid.**
 - Weather forecasts show potential for above normal temperatures and west-wide heat
- **Resources available to serve the grid are sufficient to exceed planning reliability standards, and additional contingency resources reach up to 4,000 MWs.**

2023-2026 Summer Forecast Comparison



*Long lasting west-wide extreme conditions, coincidental or sudden onset events like major fires that can take key transmission lines offline (as seen with the 2021 Bootleg Fire, which cut off 4,000 MW of imports) could still cause severe grid strain, with potential **shortfalls of up to 1,100 MW** during conditions similar to a 2022 extreme event.*

September Forecast	Summer 2023 (Aug 2023 Report)	Summer 2024 (Jan 2024 Report)	Summer 2025 (Q1&2 2025 Reports)	Summer 2026 (Q2 2026 Report)
Demand (MW)				
Total Demand	47,327	45,972	46,152	46,546
Resources (Net Qualifying Capacity) (MW)				
Total Resources	55,533	56,439	63,765	66,625
Potential Surplus/Shortfall Before Contingencies Are Needed (Resources - Demand) (MW)				
Reliability Planning Standard (w/ 18% Planning Reserve)	2,100	4,020	5,500	6,600
2020 Equivalent Extreme Event	-400	1,500	2,900	4,500
2022 Equivalent Extreme Event	-2,000	-90	1,300	2,900



2026 Contingency Resources

Type	Contingency Resource	Estimated MW July	Estimated MW August	Estimated MW September
Strategic Reliability Reserve	DWR Electricity Supply Strategic Reliability Reserve Program and State Power Augmentation Program ¹	3,079	3,079	3,079
	Demand Side Grid Support (DSGS) ²	360	360	360
	Distributed Electricity Backup Assets (DEBA) ³ (under development – anticipated 186 MW in 2027)	0	0	0
CPUC	Ratepayer Programs (Emergency Load Reduction Program, Smart Thermostats, etc.)	128	124	123
	Imports Beyond Stack	0	0	0
	Capacity at Co-gen or Gas Units Above Resource Adequacy	599	599	499
Non- Program	Balancing Authority Emergency Transfers	300	300	300
	Thermal Resources Beyond Limits: Gen Limits Needing 202c	25	25	25
	Total	4,491	4,487	4,386

¹ The Time Schedule Order (TSO) associated with Alamos Generating Stations' National Pollutant Discharge Elimination System (NPDES) permit expired on December 31, 2025. As such, maximum generation from the Alamos Generating Station may be reduced to meet the requirements of the NPDES permit such as high outfall water temperature restrictions, especially between May and October 2026.

² DSGS capacity values are preliminary estimates based on budget assumptions and expected participation; actual capacity may vary due to uncertainties in enrollment and performance.

³ Seven projects, totaling approximately 186 MW, are anticipated to come online in 2027.

2026 Summer Loads & Resources Assessment

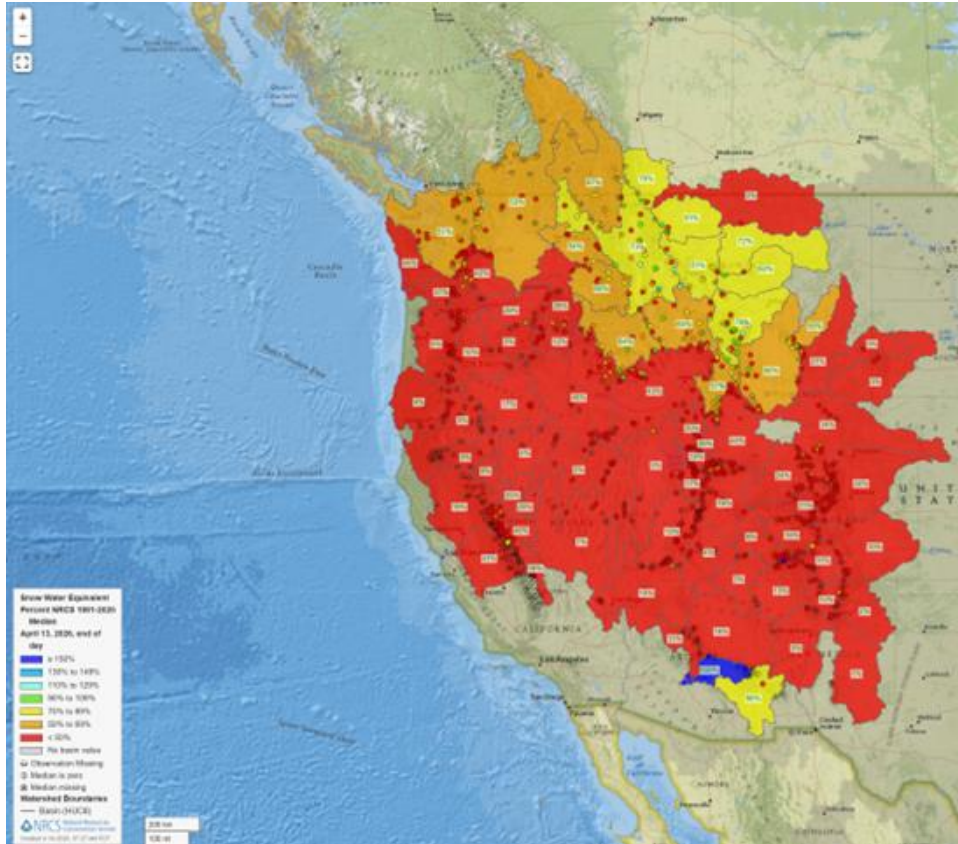


Forecasted summer conditions for 2026 continue to show improvements over previous summers driven by accelerated resource development

- CAISO's probabilistic analyses show a reasonable supply margin to meet forecasted demand and reserve margins
 - The loss of load expectation target of 1-in-10 is forecast to be met with a margin of approximately 2,547 MW
- CAISO also conducted a stack analysis and projects a surplus of capacity to meet projected demand in evening hours
- Abnormally dry conditions, increased wildfire risk, and the continued potential for widespread heat events and related disruptions remain factors that could pose risk to the CAISO grid as the season progresses

Below normal snow water in the mountains west-wide and most reservoirs below capacity

Snow Water Equivalent

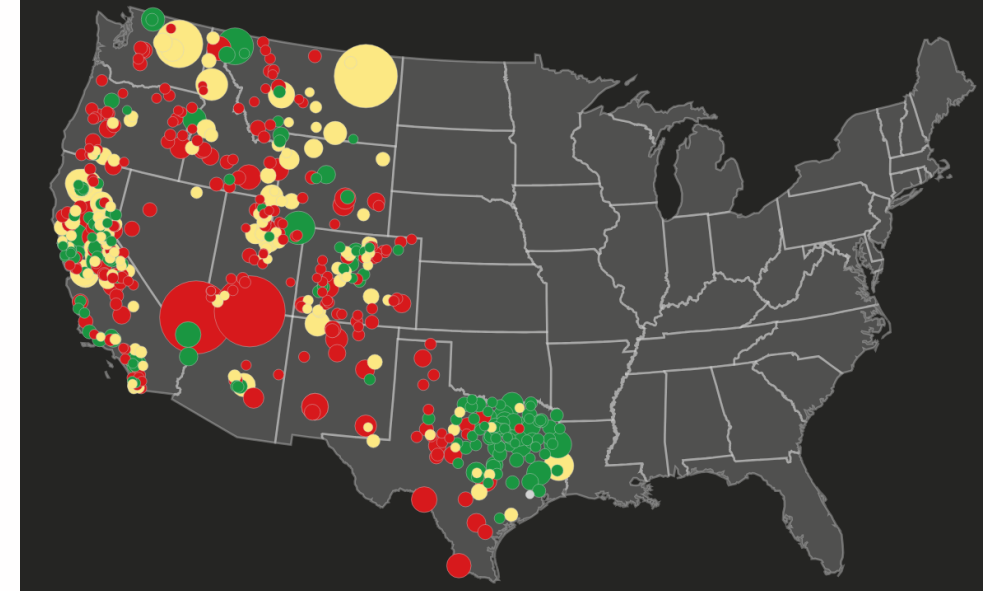
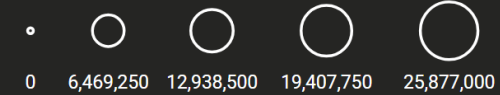


Reservoirs

Percent Full for Month Ending (May 2026), or Most Recently Available Month

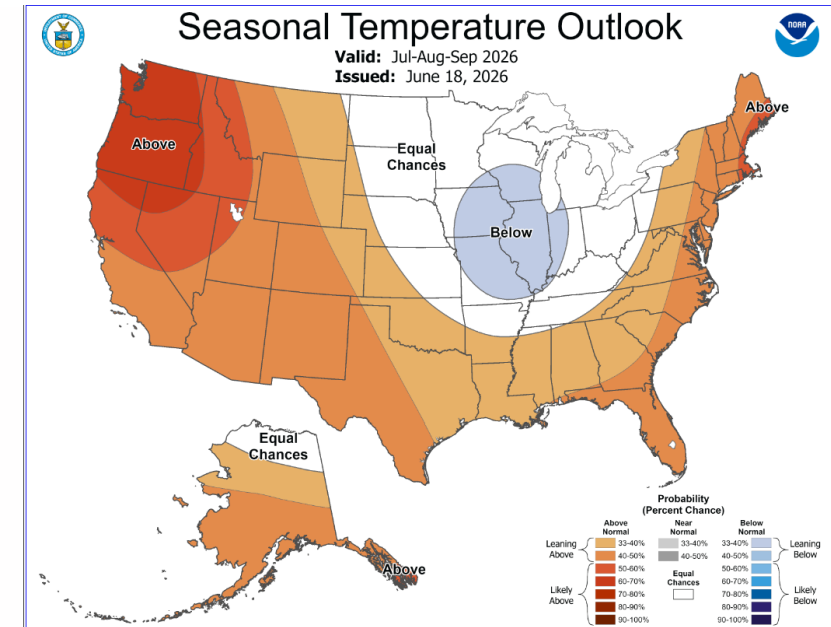
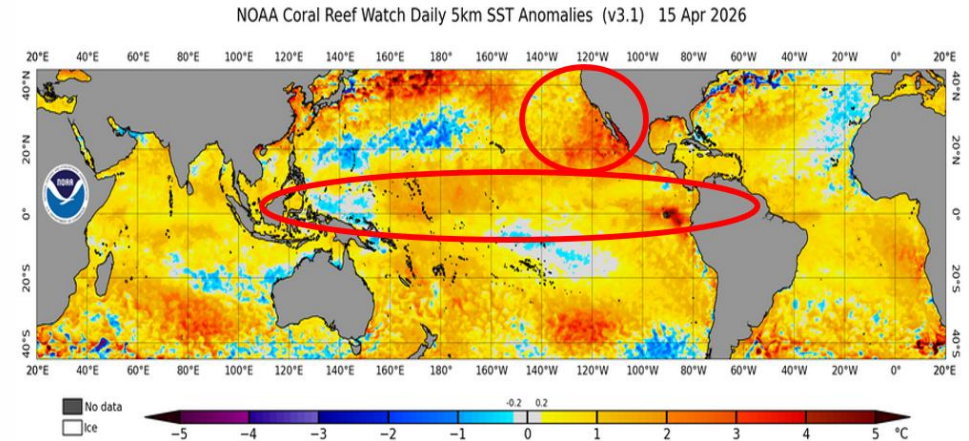
■ 75%+ ■ 50%+ ■ Less than 50%

Reservoir Capacity (acre feet)



Weather forecast guidance shows an increased chance of above normal temperatures across northern & interior CA

- July – September 2026:
 - Above-normal temperatures likely west wide (strongest in Pacific NW and Northern California)
 - Well above normal coastal sea surface temperatures are a critical driver increasing the likelihood of a warmer coastal summer and fall
 - Increased monsoonal-drive storm activity for SE California and the Desert SW
- Late Fall 2026:
 - Forecasts continue to show above-normal temperature potential across the West, with highest risk for the Pac NW and Northern California



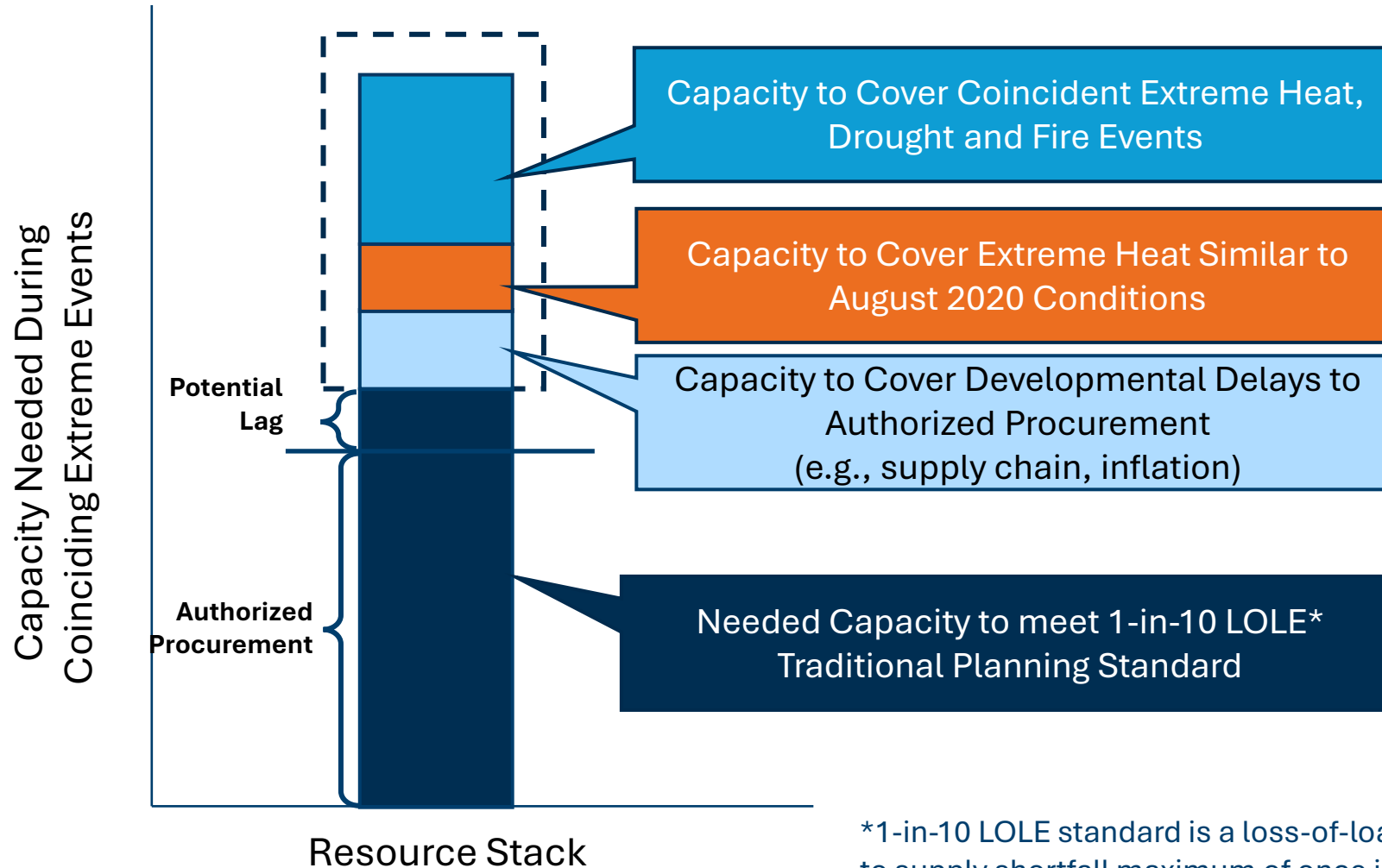
2020-2025 Grid Conditions Summary

Alerts	2020	2021	2022	2023	2024	2025
Flex Alerts	10	8	11	0	0	0
Restricted Maintenance Operations	20	24	16	6	18	2
Transmission Emergencies	2	0	10	2	24	1
Energy Emergency Alerts						
Energy Emergency Alert Watch	16	4	9	2	1	0
Energy Emergency Alert 1	0	0	6	1	0	0
Energy Emergency Alert 2	6	1	5	0	0	0
Energy Emergency Alert 3	2	0	1	0	0	0
Total Emergency Alerts in CAISO Area	24	5	22	3	1	0
Total Emergency Alerts across RC West	47	17	42	29	61	23

Long-Term Reliability Planning



2022 Context - Why a Reliability Reserve?

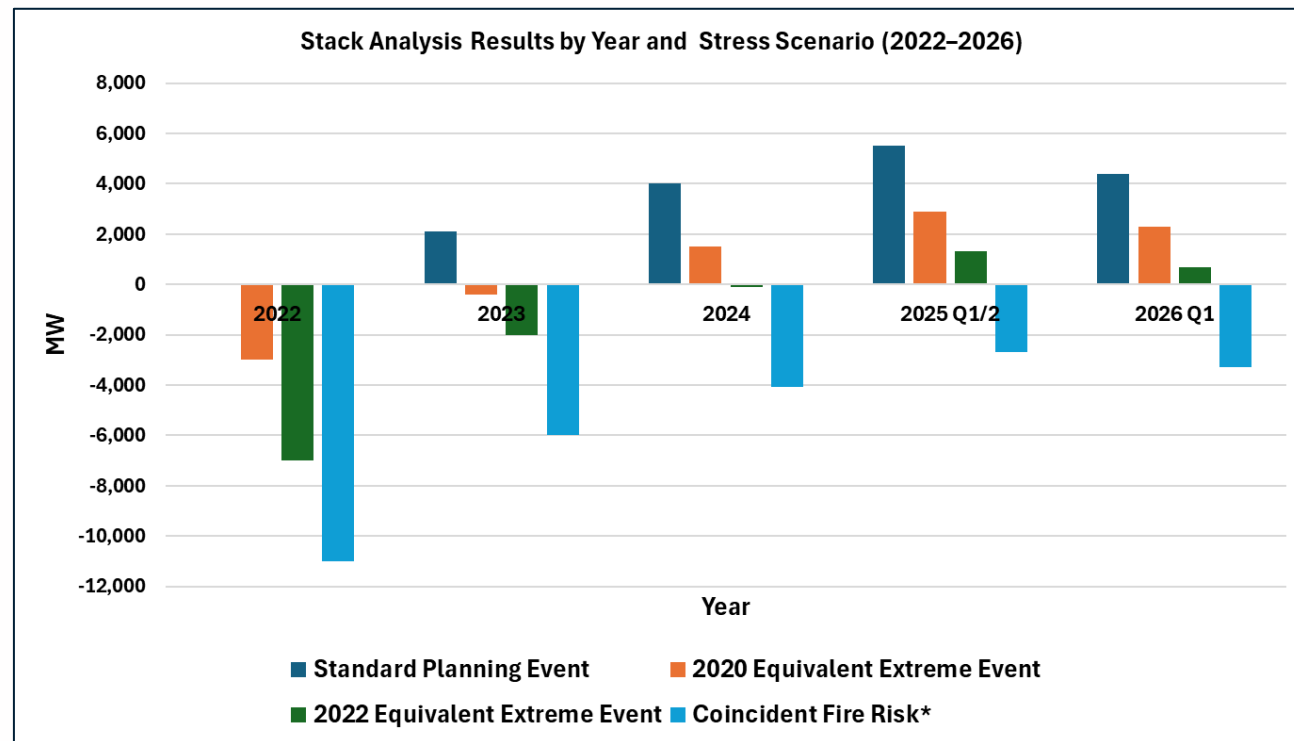


*1-in-10 LOLE standard is a loss-of-load (outage) expectation due to supply shortfall maximum of once in ten years.



Reliability Has Improved Since 2022

- Preliminary 2026 summer outlook is cautiously optimistic
 - No shortfall events expected through a Loss of Load Expectation analysis
 - Surplus margins expected under extreme heat events
 - Some risk remains:
 - Coincident fire with a heat event can cause shortfalls
 - Uncertainty around known loads coming online this year
 - Hydropower conditions will be known closer to the start of summer
 - Contingency resources are available to cover extreme events
- Less risk in heat events like 2020 and 2022
 - Risk remains with heat event and coincident wildfire impacting transmission
 - **Potential shortfalls of up to 1,100 MW**





Long-Term Tracking

- **Significant progress in planning and procurement – structurally better position**
 - Forecast improvement to factor in climate change
 - Historic procurement over the last five years, and CPUC monitoring needs
- **Ongoing agency coordination in tracking and planning under evolving conditions**
 - Large loads and transportation and building electrification
 - Uncertainty due to federal policies
- **Continue to build on strong emergency planning**
 - Emergence of Extended Day Ahead Market (EDAM) supporting reliability in the west
 - Existing contingencies beyond strategic reserve

Thank You!

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