

California's grid must add roughly 150 GW of clean capacity by 2045. Your capital plan is where that happens.

Record load, the nation's second-highest rates, wildfire hardening, and a 100%-clean-by-2045 mandate are all pulling on the same budget at once. Every new data center, undergrounding mile, and storage project competes for the same capital and the same crews. Invizion helps electric utilities re-sequence a capital portfolio in a click — and defend every decision to the CPUC or a governing board.

52,061 MW¹	+1,944%²	\$65B³	27.04¢/kWh⁴
CAISO's all-time record peak demand, set during the September 2022 heatwave.	Growth in California's battery storage since 2019 — now 15,763 MW online.	Sempra's 2026–2030 capital plan, 95% aimed at its California and Texas utilities.	California's average retail electricity price — second-highest in the nation.

THE CALIFORNIA LANDSCAPE

Four forces are moving your project list at once

None of these is theoretical, and none of them waits for your next budget cycle. Together they mean the capital plan you approved last year may already be the wrong plan.

DEMAND — LOAD GROWTH

New load is stacking up faster than the grid was built for

CAISO already set an all-time peak of 52,061 MW in the September 2022 heatwave and manages roughly 80% of the state's electric flow.¹ Now data centers, transportation, and building electrification are pushing demand higher — CAISO's 2025–2026 transmission plan added 38 infrastructure upgrades specifically to meet growing electricity demands⁵

California already moves about 245 million MWh of retail sales a year;⁴ every large new interconnection is a capacity commitment competing for the same capital.

RELIABILITY — PEAKS & HEAT

Keeping the lights on now runs on storage

Battery storage has gone from 770 MW in 2019 to 15,763 MW today — a 1,944% jump — and it is now what carries California through the evening ramp and extreme-heat events²

That fleet is part of why 2023 statewide generation actually dipped as rooftop solar and storage reshaped the load curve, with non-carbon sources supplying 58% of generations⁶ Reliability now depends on those assets landing on schedule.

GENERATION — THE TRANSITION

100% clean by 2045, on a capital clock

SB 100 requires 60% renewable electricity by 2030 and 100% clean by 2045, which the state estimates means growing generating capacity from about 35,000 MW in 2022 to roughly 73,000 MW by 2030 and 183,000 MW by 2045⁷

Diablo Canyon — 2,256 MW and about 8.6% of California generation — had its retirement pushed to 2030 to hold the line while that buildout catches up.⁸ Natural gas still supplied 36.6% of 2023 generation and solar 17.0%,⁶ so the transition is a decade of overlapping build-and-retire decisions.

CAPITAL — GRID & WILDFIRE

Harden, modernize, and grow — all at once

The dollars are enormous. Sempra alone plans about \$65 billion of capital over 2026–2030, most of it at its California and Texas utilities,³ while PG&E is burying 10,000 miles of distribution line at roughly \$4 million per mile — a program it has worked to bring from a ~\$40 billion price tag toward \$15–20 billions⁹

Wildfire liability sits on top: Southern California Edison paid more than \$2.7 billion for the Thomas Fire and \$2.2 billion for Woolsey, and won a 2025 rate increase to recover \$1.6 billion of it¹⁰ New obligations don't replace the backlog — they stack on it.

WHO RUNS CALIFORNIA'S GRID

Three big investor-owned utilities and the deepest public-power bench in the country

California's grid is carried by three CPUC-regulated investor-owned utilities plus a large set of municipal utilities and irrigation districts. The pressures are shared statewide; the accountability path differs.

Investor-owned utilities

Rates & capital recovery regulated by the CPUC

Pacific Gas & Electric (PG&E) ~5.5M electric customers · ~16M people, central & northern California⁹

Southern California Edison (SCE) ~15M people · ~50,000 sq mi (Edison International)¹⁰

San Diego Gas & Electric (SDG&E) 3.7M consumers · 1.49M electric meters (Sempra)¹¹

Sempra's 2026–2030 capital plan runs about \$65 billion, most of it at its California and Texas utilities.³

Public power & cooperatives

Governed by boards & members, not CPUC rates

LA Dept. of Water & Power (LADWP) Largest U.S. municipal utility · city-governed

Sacramento Municipal Utility District (SMUD) Sacramento region · elected board

Imperial Irrigation District (IID) Imperial Valley · public power

Rural electric cooperatives Anza, Plumas-Sierra, Trinity & others

Every capital dollar has to be defensible

Whether you answer to the CPUC or a governing board, the question is the same: why this project, why now, why at this cost?

California Public Utilities Commission (CPUC) regulates rates, capital recovery, and resource plans for PG&E, SCE, and SDG&E through general rate cases and cost-of-capital proceedings¹²

Wildfire cost recovery is contested. SCE won a 2025 rate increase to recover \$1.6 billion of Thomas Fire payments — prudence and cost-recovery approvals are not a formality¹⁰

The nation's second-highest rates. California averages 27.04¢/kWh, so every rate-base addition draws affordability scrutiny⁴

Public power sets its own rates. LADWP, SMUD, and the irrigation districts answer to boards and councils, not the CPUC — capital decisions made in front of customers.

Federal and state dollars are moving — can your plan absorb them?

California utilities have more grid capital in play than in a generation.

The constraint is readiness: which projects qualify, which are shovel-ready, and how the timing lines up.

DOE Civil Nuclear Credit: \$1.1B to keep Diablo Canyon running past its original 2024–2025 retirement dates⁸

State of California: a \$1.4B loan to support the Diablo Canyon extension under SB 846⁸

CAISO 2025–2026 transmission plan: \$160M+ of reliability-driven projects for SDG&E alone³

DOE GRIP: \$7.6B across 105 projects nationwide — California utilities compete for grid-resilience and undergrounding dollars in the same program.¹³

IRA clean-energy tax credits — investment and production credits plus direct pay put utility-scale solar and storage in reach for public power and cooperatives.

CALIFORNIA'S GRID, IN BRIEF

Questions California utility leaders are asking

Short, sourced answers — the same facts we dig into with utilities looking at their capital programs.

How fast is California's electricity demand growing?

After setting an all-time peak of 52,061 MW in 2022,¹ California faces new load from data centers, EVs, and building electrification — CAISO added 38 transmission upgrades in its 2025–2026 plan specifically to meet growing demands⁵

What's happening with Diablo Canyon?

California's last nuclear plant — 2,256 MW, about 8.6% of state generation — had its retirement extended to 2030 under SB 846, backed by a \$1.1 billion federal Civil Nuclear Credit and a \$1.4 billion state loan⁸

Why are California's electricity rates so high?

California averages 27.04¢/kWh, the second-highest of any state, as wildfire hardening and clean-energy buildout land in rate bases⁹. The CPUC reviews those costs for PG&E, SCE, and SDG&E¹²

How much battery storage does California have?

About 15,763 MW as of 2025 — up 1,944% from 770 MW in 2019 — now central to riding through the evening ramp and heat events²

What clean-energy targets must California utilities hit?

SB 100 requires 60% renewable electricity by 2030 and 100% clean electricity by 2045, which the state estimates means growing capacity from about 35,000 MW to roughly 183,000 MW⁷

How does Invizion help California electric utilities plan capital?

Invizion is scenario-based capital portfolio optimization for utilities. It lets you model how a load surge, a grant, a wildfire-hardening mandate, or a retirement date reshuffles your whole project list, re-sequence the portfolio automatically, and keep a defensible record of every decision for the CPUC or your governing board.

REFERENCES

Sources

Every figure in this briefing is tied to a primary or authoritative source.

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ABOUT INVIZION

Capital program optimization for utilities

Invizion is a purpose-built capital lifecycle management platform for utilities. It integrates budgeting, CIP, scenario analysis, and funding-source tracking in one system — so utilities can re-sequence a capital portfolio in a click and demonstrate audit-ready, defensible decisions to regulators, boards, and rating agencies.

See how utilities keep capital plans current and defensible with Invizion.

Explore Invizion →