

California planned a nuclear exit. Now it's reconsidering.

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Photographs by Myung J. Chun

Summary

California is reconsidering its plan to close the Diablo Canyon nuclear power plant, extending its operation to 2030 and potentially to 2045. This decision is driven by increasing electricity demand, the need for reliable clean energy, and challenges in replacing Diablo's consistent power output with renewables. While some support the extension for its clean energy benefits, others raise concerns about nuclear waste, seismic risks, and the plant's impact on renewable energy growth.



SAN LUIS OBISPO, Calif. — Diablo Canyon doesn't look like a nuclear power plant that's getting ready to retire.

Beneath its twin concrete domes here on the edge of the Central Coast, neutrons slam into uranium atoms billions of times each second, workers respond to blinking lights in a seafoam-green control room, and thunderous turbines generate steady electricity for nearly 4 million Californians.

At the building's entrance, a massive banner celebrates the plant's [recently renewed federal operating license](#), proclaiming "You Made This Possible" above a photograph of smiling staffers.

It wasn't supposed to be this way. A decade ago, the plant's operator, Pacific Gas & Electric, [agreed to methodically](#) shut down Diablo's reactors in 2025, replacing its 2.2 gigawatts of power with a portfolio of wind farms, solar arrays, battery storage and just plain using less electricity.

But as that deadline neared, state officials, including Gov. Gavin Newsom, [waved a white flag](#). They weren't ready to shut down an energy source that consistently provides up to 9% of California's electricity. They extended its life to 2030.

Now there's a growing movement to extend Diablo's life once again — this time to 2045. Nearly 50 groups have joined a [coalition](#) that includes chambers of commerce, labor unions, nonprofits and the San Luis Obispo County Board of Supervisors to argue that the plant is a critical bridge to the state's clean energy future. Nuclear power produces no greenhouse gas emissions, the primary driver of climate change.



License instructor Dan Stermer gives a tour of a simulated control room identical to the actual control room at Diablo Canyon Power Plant on July 31. It's used to train operators and practice emergency response.



Above: Pacific Gas & Electric operates the power plant.

Below: Spent nuclear fuel is stored in lead and stainless steel casks and bolted into concrete at a specially built pad at Diablo.



Opponents of the plant, many of whom live in the area, are livid and say it is the latest in a string of broken promises. Extending the plant's life through 2045 means 15 more years of nuclear waste and seismic risk as the 1980s-era plant gets older and more brittle.

Experts say the abrupt about-face on California's [once-heralded nuclear exit](#) reflects a broader trend as the state grapples with an electricity future almost no one saw coming.

Like the rest of the nation, California has seen a remarkable explosion in demand for electricity, driven in large part by the rise of artificial intelligence data centers, electric vehicles and building electrification. The California Energy Commission projects that [demand for electricity](#) will increase by roughly 50% through 2045 after decades of remaining relatively flat.

At the same time, the state is legally mandated to switch entirely to [100% carbon-free energy by 2045](#), meaning it must produce more electricity while simultaneously cleaning up the electricity it produces.

The question of how California is going to make major emissions reductions while keeping electricity affordable and reliable "starts in the 2030s and goes all the way to 2045," said David Victor, a professor of innovation and public policy at UC San Diego. "And shutting down Diablo in the middle of all that was always going to be a stretch."

It's a conversation happening across the United States. Three Mile Island in Pennsylvania — the site of the worst commercial nuclear accident in U.S. history — is [slated to reopen in 2027](#) as part of a 20-year deal to power Microsoft data centers. The Duane Arnold plant in Iowa will [start back up in 2029](#), nine years after its closure, to help power data centers for Google.

In California, extending Diablo's life through 2045 requires an act of the Legislature, and Newsom has [punted the question](#) to the next administration. But the plant's federal license, which was [renewed by the Nuclear Regulatory Commission](#) in April, technically gives it permission to power on until 2045, when it would be 60 years old.

"It doesn't make any sense to go through that process of extension and only do it for five years," Victor said. He said he wouldn't be surprised if PG&E requests another 20-year extension down the road, because there are "several reactors in the country that already have 80-year licenses, and there may be life even beyond that."

That's not to say California hasn't made great gains in renewables. The state has added an impressive amount of [solar power and battery energy storage](#) in recent years, surpassing more than 21,000 megawatts of battery capacity, the [largest such fleet in the nation](#), according to the Energy Commission. It used more solar than natural gas during the first half of 2026 for the first time.



1. Jane Swanson, a board member of Mothers for Peace, waits to speak during public comment following a hearing for extending the operation of Diablo on July 30.



2. Signs placed along a service road warn of the presence of the federally threatened California red-legged frog at Diablo.



3. Heather Hoff, a 23-year employee at the plant, said she "could not imagine a scenario where California simply did not need the emission-free electricity from Diablo Canyon," adding that nuclear energy is powerful, robust, clean and safe.

But the grid is missing round-the-clock power to replace Diablo Canyon, said Conor Doyle, chief of strategic initiatives at PG&E, during a recent tour of the plant.

“We have an abundance of renewables, and we’re doing good with procurement, but the sun sets, the wind doesn’t blow, and that’s where reliability and stability come into question,” Doyle said. He noted that there is “not one electron” of always-on power, sometimes referred to as base load, in the California Independent System Operator’s interconnection queue.

In his opinion, if Diablo were to shut down in 2030 as currently scheduled, it would largely be replaced with natural gas.

Arne Olson, a senior partner with Energy and Environmental Economics who consults on California’s energy planning, said replacing the plant with clean energy may have looked “eminently doable in 2016,” and is probably feasible today. But it becomes much more challenging as the state gets closer to its 2045 target, when the entire grid must be clean.

Offshore wind power, a complement to solar because it blows overnight, is lagging in California in the face of powerful political opposition. While the state had been aiming for 2 to 5 gigawatts of offshore wind power by 2030, none has yet been built, and the [Trump administration recently struck deals](#) with three of the state’s offshore wind leaseholders to walk away from their plans and instead invest in fossil fuel projects.

Geothermal, which involves tapping into Earth’s underground heat to spin turbines, looks a lot like nuclear in that it can produce clean electricity 24 hours a day. But it’s not yet clear how many geothermal megawatts are available, and few projects are ready, Olson said.

And replacing Diablo’s steady power with a combination of solar and batteries would be technically possible but increasingly expensive, particularly during the periods of highest demand, he said.

The difficulty and expense of the various alternatives increases “the attractiveness of a resource that’s already operating and producing clean energy around the clock,” he said.

But some experts say keeping Diablo online is actually slowing the growth of renewable energy in California. The plant cannot be turned off during periods of high solar power production, so the state ends up cutting back on its solar power or giving it away for free, said Mark Jacobson, a professor of civil and environmental engineering at Stanford.

“So it’s become like an inflexible albatross that causes a lot of waste of electricity,” he said.

Jacobson said the state can — and should — shut Diablo Canyon down on time and still meet its climate goals through a combination of wind, geothermal, rooftop solar and imported supplies. He pointed to the massive [SunZia wind farm in New Mexico](#), which recently came online and is already sending clean electricity to California's grid, and a major Google-backed [geothermal project underway in Utah](#) that aims to supply 500 megawatts by 2028.

"There's nothing necessary about keeping it open," he said.

Some who live in the shadow of Diablo Canyon say a 2045 extension feels increasingly inevitable. At a recent information session hosted by the county, about half of the people who delivered public comments were in favor of keeping the plant open, and half were vehemently opposed.

Among them were plant employees who said they can't imagine a world in which California doesn't need Diablo's electricity, and environmental groups who said they're concerned about [threats to marine life](#). Diablo Canyon uses 2.5 billion gallons of ocean water for cooling each day, discharging hot water directly into the nearby cove.

Others worry about a Fukushima- or Chernobyl-style meltdown. The plant sits near more than a dozen earthquake fault lines.

"It's a low probability, but the consequences are so enormous that you've got to factor it in," said Jane Swanson, president of Mothers for Peace, a San Luis Obispo-based nonprofit, in a recent phone call.

She and the group's vice president, Linda Seeley, question PG&E's arguments for keeping Diablo open, noting that plant officials often point to the [rolling blackouts of 2020](#) as evidence that the state still needs nuclear to meet peak demand. But California hasn't seen rolling blackouts since that year in large part due to its massive increase in battery energy storage, Seeley said.

The push to extend Diablo Canyon's life, she contends, "has nothing to do with whether we need the power. It has everything to do with money, and it has everything to do with political will."

Plant officials maintain that Diablo is safe and subject to constant seismic studies and layers of redundancies to prevent a nuclear meltdown. Its major components, including reactor vessel heads, steam generator parts and low-pressure and high-pressure turbines, were all recently updated as part of the 2030 extension, said Maureen Zawalick, chief risk officer at PG&E.

She said the facility has the capacity for at least 60 years of nuclear waste storage — including 40 years in dry concrete casks and 20 years in spent fuel pools — which

would carry it right up to 2045, although she is optimistic about the prospects of a federal fuel repository offsite.



Maureen Zawalick, senior vice president of PG&E, talks about the safety and productivity of Diablo. She said the plant provides electricity to 4 million people.

Asked if there's any scenario in which a 2045 extension doesn't make sense, Zawalick said no. Given the forecast for future electricity usage and demand, "Diablo is in a unique situation and position to provide and support that," she said.

For now, the ball is in the Legislature's court.

Sen. John Laird (D-Santa Cruz), whose district includes Diablo Canyon, said in a [statement](#) last week that he's not surprised Newsom has pushed the question to next year. Important issues must be addressed before any decisions are made, including [PG&E's repayment of an existing state loan](#), seismic and nuclear reactor safety, spent fuel storage and continued revenues to local government and schools, Laird said.

"I look forward to having the opportunity in 2027, over a full nine-month legislative session, to thoughtfully consider Diablo Canyon's future and ensure that the community is protected during any additional years of operation," he said.