

*According to the CPUC, the current net metering program costs California ratepayers over \$3 billion per year. The California PUC issued a decision in December 2022 ending new entry into the program, effective April 15, with a replacement program that pays 75% less compensation than the present one.*

## Batteries or bust: Calif. rooftop solar firms pivot as net metering sunsets

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*Market Intelligence*

Net energy metering, the 27-year-old ratepayer-funded incentive that fueled California's rooftop solar revolution, is expiring for customers of the state's major investor-owned utilities who wish to equip their homes and businesses with onsite arrays.

The new "net billing tariff" takes effect April 15, which the California Public Utilities Commission adopted in [December 2022](#) in response to concerns about the mounting multibillion-dollar cost of the program. Except for systems exempted under the old rules, which award exports of excess solar at retail electric prices, solar fed into the grid will be compensated at prices utilities could pay for energy elsewhere on the market. That means, on average, a 75% cut in the value of distributed solar sent back to the grid, according to some solar industry estimates.

Installers, many of whom reproached the move as draconian, are looking largely to batteries to save the economics of harvesting sunlight from rooftops. Regulators hope this shift better aligns with the evolving needs of the grid.

"Solar alone is great. Solar plus storage is a killer app," said Michael Grasso, chief revenue officer at [Sunnova Energy International Inc.](#), which sees California's rooftop solar reform as a significant growth opportunity. To stoke consumer interest, Sunnova is advertising a "free" battery, valued at \$8,000, for homeowners who sign up for its battery-backed solar lease offering.

"We want consumers to really understand all the benefits that come with the storage product," Grasso said. "That's why we're pushing this promotion out there. ... We want to remove one more reason not to buy."

Sunnova, [Sunrun Inc.](#), [SunPower Corp.](#), [Enphase Energy Inc.](#) and other behind-the-meter solar specialists are rapidly expanding their storage solutions. Using batteries, they can bank photovoltaic (PV) generation in the middle of the day, when wholesale market prices often go negative, and cash in during the late afternoon and into the evening, when prices spike. Customers can consume their cheap homemade electrons themselves, offsetting peak price; export them at premium peak rates; or do both.

Given the overall drop in export value, many companies are emphasizing offerings aimed at helping their clientele maintain as much independence as possible.

"Simply put: The utilities aren't interested in buying electricity from homeowners," said Linh Tran, vice president of product marketing for FranklinWH Energy Storage Inc. Funded by venture capital firm [Sequoia Capital](#), the San Jose, Calif.-based upstart is working with Sunnova to offer home

batteries. "Whatever energy a homeowner can produce, they themselves will get the most value from it."

### **'Mass market appeal'**

Federal tax credits and California's Self-Generation Incentive Program, which supports batteries, could soften the blow of the state's distributed solar reboot. So could ever-rising electric bills, strongly linked to volatile natural gas prices and major capital expenditures. California utilities, for instance, plan to spend \$26 billion over the [next three years](#) to keep their infrastructure from igniting catastrophic wildfires.

"Utilities are dealing with a lot in California and all of [that] is costly," said Mary Powell, CEO of San Francisco-based Sunrun and a former utility executive.

Sunrun, the largest US home solar and storage supplier, has launched a no-money-down leasing service to take advantage of the new rules.

"It provides just enough storage so that it's still fast to install, it's relatively inexpensive ... so that we're making sure that we're meeting the new regime in California and sending energy back to the grid for when it can be optimized from a financial perspective," Powell said.

Called Sunrun Shift, the offering is designed with smaller batteries than are needed to back up an entire home during outages. Demand for batteries has surged in recent years amid heat waves that push the grid to, and sometimes beyond, its limits and wildfires that prompted power shut-offs for public safety.

Overall, Powell believes that 2023 will be the "[year of the battery](#)" in which solar-only systems supplied by Sunrun will become a rarity.

The company will continue to couple solar arrays with energy storage systems large enough to power whole homes for multiple days. But its "storage lite" offering is aimed at attracting a bigger pool of customers who "don't want to pay for home backup," Powell said. "This has more of what I would consider mass-market appeal."

Such battery-backed systems could also be networked into a remote-controlled virtual power plant Sunrun is working on with [PG&E Corp.](#) utility subsidiary [Pacific Gas and Electric Co.](#) to support grid reliability.

### **Swan song**

California's net metering reform marks the end of an era for one of the state's marquee renewable energy programs. Launched in 1996 and updated in 2016, the program transformed the state's electric power sector with more than 1.5 million self-generators and 13 GWdc of PV capacity entering March, according to the California Public Utilities Commission.

That is over four times more peak generating capacity than the US nuclear power industry has added since net metering started, S&P Global Market Intelligence data shows. It also makes behind-the-meter PV the third-largest type of electric resource in California, behind natural gas and large-scale solar.

Market participants say net metering went out with a bang, as customers raced to lock in full retail rates for their excess solar exports to the grid for the next 20 years.

Powell declined to reveal how much demand Sunrun had in the first quarter but pointed to the perennial rush of applications ahead of a major policy change.

Officials at [Aurora Solar Inc.](#), a PV sales and design software firm, say California projects within its widely used online platform more than doubled in the first quarter compared with a year ago.

"We've anecdotally heard of solar companies seeing [double to quadruple] their Q1 2022 volume in Q1 2023," said Andrew Gong, senior researcher at Aurora.

### **Consolidation wave on the horizon?**

Gong does not expect a hangover once the California solar industry has fully entered the new paradigm.

"What remains the same is solar is a great investment in California, even if payback takes a little longer under the [new] rules," the researcher said. "In general, payback periods can be kept under 10 years with [net billing] with just solar and can be shorter when solar is paired with storage."

But equity analysts at Roth Capital Partners who cover distributed solar companies anticipate a hiccup after the industry works through what could be a dramatic pull forward of demand. By the final quarter of 2023 and in 2024, they expect demand could drop 30% year over year.

"Many have tried to talk to us about why the solar demand may not fall as much, but our contacts with hundreds of MW of annual California volume continue to see weakness once we are fully into [net billing]," they said in a March 28 note to clients.

That could induce a "tremendous amount of market consolidation in [residential] solar in 2023," they said, citing Sunrun, Sunnova and SunPower as key beneficiaries. "We expect these companies to accelerate through this industry turmoil."