

DOCKETED

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From: ROB KOSLOWSKY <rob.koslowky@sbcglobal.net>
Sent: Wednesday, December 23, 2020 6:30 AM
To: Gallardo, Noemi@Energy <noemi.gallardo@energy.ca.gov>
Cc: Energy - Public Advisor's Office <publicadvisor@energy.ca.gov>
Subject: Re: Another State Mandate Headed for Homeowners

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Noemi,
Thank you for your reply.
Specific request: Please do not add battery back-up storage to the next, 2022, iteration of the California Building Code.

Additional request: Remove the rooftop solar mandate from the current 2019 building code as it violates the CEC's own guidelines on affordability and, according to many local planning departments, it's bad public policy.

Thank you,
...Rob, 707-529-7043

From: ROB KOSLOWSKY <rob.koslowky@sbcglobal.net>
Sent: Monday, December 21, 2020 6:38 AM
To: ROBERT KOSLOWSKY <rob.koslowky@sbcglobal.net>
Subject: Another State Mandate Headed for Homeowners

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"Solar" Batteries Mandated for Homeowners' Garages is Bad Public Policy

"With full sun, the 2.55 MW AC Marshalltown solar system [in Iowa] can fully charge the 548 kWh battery within two hours. When discharged [during the evening], the battery can power nearly 200 homes for two hours."

– Alliant Energy Adds Battery Storage, Matthew Mercure, October 22, 2020

"You and I are in 100% agreement that batteries should be deployed at grid level, not in people's homes unless it's their voluntary option for emergency power."

– Sean Armstrong, Redwood Energy, November 30, 2020 E-mail extract

The cost for utility companies to deploy battery backup systems for the lack of solar energy production on cloudy or smoky days is so prohibitive that the State of California could soon make homeowners responsible for deploying solar backup batteries and contribute their saved power to the larger electric grid in times of need.

Why could this happen?

Because the shift to variable energy sources in California – wind, utility solar, and now (mandated) residential rooftop solar – has been pushed so aggressively [1] that the current state of storage is insufficient to simply accommodate regular electricity demand as the sun sets or is obscured. Just a couple of years ago, nuclear power plants and natural gas generating facilities provided the predictable, steady-state flow of electricity as the sun fell from the sky or the winds calmed.

- *Homeowners Forced to Become Mini-utility Operators*

Energy “experts” believe batteries, augmenting rooftop solar systems, could turn a person’s home into a mini-power plant capable of feeding the electric grid. It’s an expensive experiment for which homeowners are the state’s guinea pigs. The theory: Batteries absorb any of the excess power from rooftop solar panels during the day and provide needed electricity in the evenings. The priority, however, is confiscatory use of a homeowner’s garage-bound [2], battery system to stabilize and feed the grid due to the reduction of power as a result of centralized plant shutdowns. And this trend, under current California energy policy, is leading to a secondary program of warehouses full of centralized batteries managed by utilities in order to accelerate further replacement of both nuclear power plants and those fueled by natural gas. Even hydro-electric power plants, a source of renewable energy, are being shuttered across California [3,4].

- In November 2020, in order to deal with the crisis of the variability of renewable energy resources, a coalition of eight renewable energy aggregators released the state’s first “Long Duration Energy Storage” request for proposal to purchase up to 500 MW of storage and have it in place by 2026. The problem with this idea, based on this past summer’s blackout events, is the more urgent need for nearer-term energy storage. But even better than rushing more batteries into garages or warehouses, might be the reinstatement of nuclear power, additional natural gas generators, and implementation of carbon capture to remove CO₂ from the atmosphere.

- *Costs for Massive Battery Storage are Prohibitive Too*

Energy storage costs for the state and its utilities, provided by Bob Meinetz, an *Energy Central* contributor are as follows:

- California typically consumes 710,959 MWh each day
- The world’s largest battery has a capacity of 730 MWh capacity, which could power California’s grid for 89 seconds
- EIA Cost of Installed Battery Storage (July 2020) = \$1,250,000/MWh
- Cost of world’s largest battery = \$912.5 M
- Cost of Storage to Power California for One Day of Cloudy Weather = \$885,842,696,629. (\$885.8 B, almost \$1 trillion)
- California state budget (2020) = \$202 B
- It would take >4 years of California's state budget to buy enough grid storage to power the CAISO grid for one day of cloudy weather.

- Consequently, homeowners will be faced with footing the bill and sacrificing more garage space.

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At a cost of \$30,000 for 1-day of battery backup (Dec 2019 pricing from Enphase Energy or Tesla) for each all-electric home, California's 10.8 million homeowners could eventually fork over the initial \$324 billion investment required. Businesses, it's suggested, will pay the rest, in theory.

It begs the question, "What happens if there are two cloudy days or three "Spare the Air" days in a row?"

This explains, as Meinetz observes, "Why batteries will never power the California grid."

It's a Conundrum

Besides today's bad public policy of forcing rooftop solar systems, and the planned bad public policy of compelling residential battery backup, regulators and utilities have failed to address the many legal and logistical questions. These questions have reduced acceptance of solar batteries owned by homeowners and businesses alike [5]. For example, "How should battery owners be compensated for the electricity they provide to the grid?" "Can grid managers (aggregators) or utilities force batteries to discharge even if homeowners or businesses want to keep them charged up for their own use during California's rotating blackouts and PSPSs?"

Déjà vu strikes, even as rooftop solar homeowners, who previously volunteered to install solar panels for relief on their electric bills, wrestle with the utilities' plans to significantly reduce the true-up credits [6]. What will the credit scheme look like for backup battery discharges? And how long will that NEM-like credit survive?

On September 3, 2020, one industry observer wrote for the *New York Times*, "[Battery critics] argue that it would be far better to build and maintain natural gas power plants because utilities have decades of experience with them and gas is abundant and relatively cheap. Batteries, they argue, are expensive and can provide electricity only for short stretches—typically four or five hours."

Widespread Solar Raises Electricity Prices for All

- Solar panel and component pricing down (**that's good**), but it's only the 1/3 part of the story per economists.
- Electricity prices increasing \$
- Solar devalued: monthly credit on electric bill to be reduced by 400% \$
- Initial cost of solar paid for by homeowner instead of utility \$\$
- Battery backup system costs \$\$\$
- Ongoing maintenance, plus repair and replacement costs \$\$\$\$
- Solar mandate makes homes less affordable, less safe, reduces property values, and compromises energy security



Sacrifice garage space for battery backup, heat pump water heaters, & EV hookups

Relinquish rooftop

Rooftop Solar PV was a homeowner choice until Jan 1, 2020

Ban natural gas appliances

"The costs that renewables impose on the generation system, including those associated with their intermittency, higher transmission costs, and any stranded asset costs assigned to ratepayers [must be considered]." – *Do Renewable Portfolio Standards Deliver?* Michael Greenstone and Ishan Nath, May 2019

R.K. Koslowsky

Forcing homeowners to install garage-based, battery backup systems that the state controls is the continuation of a series of bad public policies, invoked by unelected commissioners, that should be nixed.

"In California, residential and small commercial storage solutions continue to remain out of reach for most customers . . . Adding a backup storage component to a typical residential system could easily tack on an additional 50% to 100% to the price of grid-tied solar."
 – Penn Martin, Solar Designer, Sustainable Energy Group, December 13, 2020

"A lot of people are out in La-La-Land with fanciful views of how it all works," one county planning representative told me. Coupled with that 'green-colored' view are the rooftop solar business interests who have been hiring like mad to take advantage of this bad public policy to line their pockets for the initial install, ongoing monthly costs, future repair and replacement costs, and reaping money from their trafficking in Renewable Energy Credits or RECs.
 – R.K. Koslowsky September 23, 2020 interview
 {Now the backup battery business interests are getting in line.}

[1] The obsessive focus on renewable energy in California has sacrificed investment in the state's electrical infrastructure, as well as giving up for decades on vegetation management, which has been a major contributor to the proliferation of wildfires during 2017 thru 2020.

[2] Confiscation of Rooftops, submitted by R.K. Koslowsky, March 15, 2020. First, rooftops are being confiscated for energy production. Then, plans are afoot to confiscate yards by mandating ADUs to increase California's housing density. And soon, garages will be confiscated to house battery backup systems, EV chargers, and heat pump water heaters.

[3] Klamath dam removal project is back on track, *The Press Democrat*, November 21, 2020, page A10. The dams were built solely for power generation, now considered a negative, whereas fields of solar panels are built solely for power generation, now considered a positive.

[4] Scott Dam slated for removal in plan by Sonoma County and partners to control hydropower project, *The Press Democrat*, May 13, 2020. The power plant generates about nine megawatts of power continuously, which will be lost and replaced by, for example, floating solar panels in Healdsburg offering three megawatts of power intermittently (typically operating for only 20 to 25 percent of the year).

[5] Acceptance for battery backup systems has been very low in Northern California. "Eighteen battery storage systems were installed in Sonoma County homes in 2017, increasing to 113 in 2018 and 225 in 2019," says PG&E spokesperson Deanna Contreras. "And in the unincorporated areas of Sonoma County, 174 battery permits were issued in the first half of 2020," says Domenica Giovannini of the county's Permit and Resource Management Department.

[6] Getting Solar Right is Beginning to Go Wrong, submitted by R.K. Koslowsky, September 14, 2020. For example, SMUD and other utilities will begin to value rooftop generation at 3 cents per kWh, or less, going forward, thereby rectifying the issue of the too-generous credits. That translates into a 400% reduction in solar production credits for electric bills of owners of rooftop solar homes. During 2020, new homebuyers across California are finding out they're the early targets for becoming utility operators, while also inheriting the costs of upfront capital expenditures (\$\$), realizing a reduced ability to recoup their investments for generating solar energy, facing a near future requirement to add a battery backup system (\$\$\$), and unknowingly agreeing to maintain, repair, and replace components of a renewable energy system (\$\$\$\$) that was once the domain of large utility providers. For them, the *green new deal* means homeowners **fork over the green** for mandated energy deals concocted by state government employing unelected commissions.

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Rob Koslowsky

Author of [The Tubbs Fire](#).

Also author of [The Upstart Startup & Breach of Trust](#).

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