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*Comment Received From: Rob Koslowsky*
*Submitted On: 3/11/2021*
*Docket Number: 19-BSTD-03*

## Rob Koslowsky Comment re 2022 Energy Code Pre-Rulemaking

To Whom It May Concern:

For Docket #: 19-BSTD-03 Project Title: 2022 Energy Code Pre-Rulemaking

Please repeal the 2019 Building Code making rooftop solar a mandate. Choice for homeowners to use solar, or not, must be restored. Resiliency is best served by allowing residents to enjoy the services of both gas and electric. The attached submission reflects some of the reasons to repeal the rooftop solar mandate â€“ Getting Solar Right and SMUD_RKK_Sept 2020.

Soon, those generous electric bill reductions for selling rooftop energy back to the utility are coming to an end. Utility providers have realized that the majority of their customers, the non-rooftop solar ones, have been subsidizing those that chose to install rooftop solar PV for decades prior to January 1, 2020.

In addition to never being able to recoup their capital investment, the mandated rooftop solar PV system, described by the Building Standards Commission in their 2019 Building Code, is undersized. The specified 2.5 kW system is insufficient to run a single family home, unless itâ€™s installed atop a compact Tuff Shed tiny house.

Please remove rooftop solar and all-electric mandates from the building codes.

Thank you for your consideration,

â€¦.Rob

Rob Koslowsky, Cloverdale, California
Author of The Tubbs Fire.
Also author of The Upstart Startup & Breach of Trust.
Author's page

*Additional submitted attachment is included below.*

## Getting Solar Right Is Beginning to Go Wrong

**"My husband and I visited a new home development in our community today. At the end of our tour, we were advised by the sales agent 'due to the new mandate law' we have the option to lease or purchase solar panels for 18,000 dollars for the model that we were interested in. I've never been a fan of solar panels taking over my roof plus there's only two of us who'll be occupying the home 'Why do we need solar?'"**

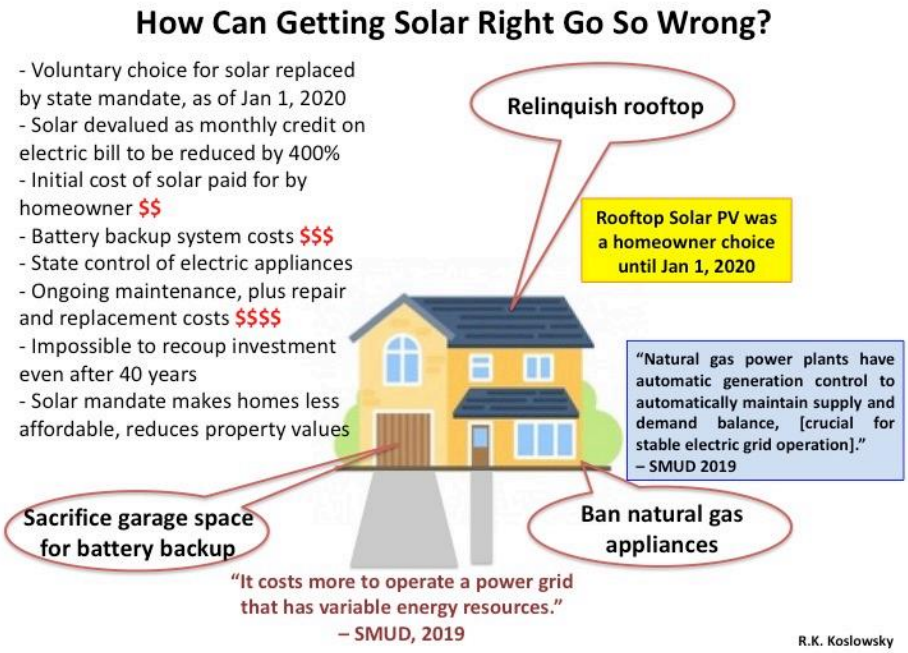
**– Irene, August 20, 2020, posted on Energy Sage**

Californian homeowners took up the challenge to meet Governor Schwarzenegger's goal to put 1 million Solar PV systems on their rooftops. Many voluntarily did so and, in 2019, met this ambitious target to boost the use of renewable energy and continue America's march toward energy independence [1].

Somewhere along the line, progressive environmentalists and green zealots hijacked the idea of property owners willingly seeking to lower their electric bills and turned it into a state mandate forcing new home construction to include rooftop Solar PV. Even unwilling builders and homeowners have been told they must comply with another round of high cost building code regulations, of which rooftop Solar PV is a key green component.

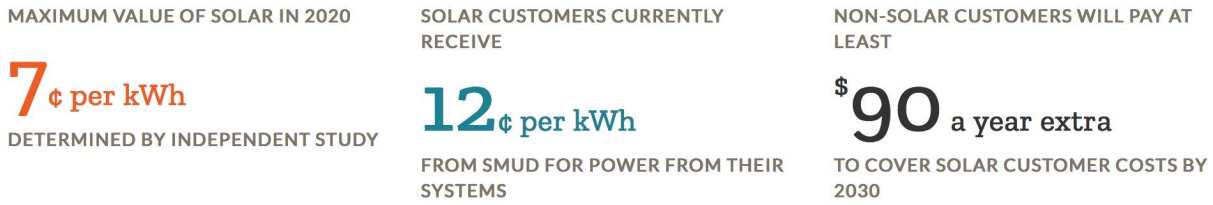
Meanwhile, utility operators are devaluing solar energy production ensuring promised theoretical paybacks of such installations can never occur, not even for a homeowner with a 40-year mortgage who remains in their house for that duration.

Soon, those generous electric bill reductions for selling rooftop energy back to the utility are coming to an end. Utility providers have realized that the majority of their customers, the non-rooftop Solar PV ones, have been subsidizing those that chose to install rooftop Solar PV for decades prior to January 1, 2020.



*Solar Devalued by 400 Percent*
SMUD, for example, identified that its non-solar-producing customers are paying $45 a year extra in costs, a cost that will continue to grow. If nothing else happens, this added cost to those customers *without* rooftop solar will see their utility bills double to $90 annually by 2030 [2]. It's been recognized that solar is nowhere near as advantageous as it once was. SMUD's study reveals the current value of solar is 3-7 cents per kWh. This is about 50-75% lower than the utility's reimbursement paid to its solar customers under the current NEM rate, currently pegged at 12 cents per kWh. SMUD notes, "In 2030, that increases to 16 cents per kWh . . . This means the under-collection of our fixed costs will increase substantially and the costs will be shifted to non-solar customers."

It's likely that 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.




**Graphic courtesy SMUD, August 2020**

*Mandated Solar System is Too Small*
In addition to never being able to recoup their capital investment, the mandated Solar PV system, described by the Building Standards Commission in their 2019 Building Code, is undersized. The specified 2.5 kW system is insufficient to run a single family home, unless it's installed atop a compact Tuff Shed tiny house [3].

One argument for under-sizing solar, pushed by coerced builders, is to ensure upfront costs of the system are not 'too high to stomach' for buyers of new homes [4]. Another argument for under-sizing, pushed by green new dealers, is that homeowners can separately purchase a solar battery backup system for their new home that can store solar energy when its sunny and use that excess energy when its nighttime or cloudy [5], providing the loss of sun is "not too long." This is another theoretical argument that has yet to be realized in practice.

If the required Solar PV system (and soon to be required battery backup) was sized accordingly, it becomes impossible to recoup the upfront investment, even without the reduced monthly savings on the property owner's electric bill.

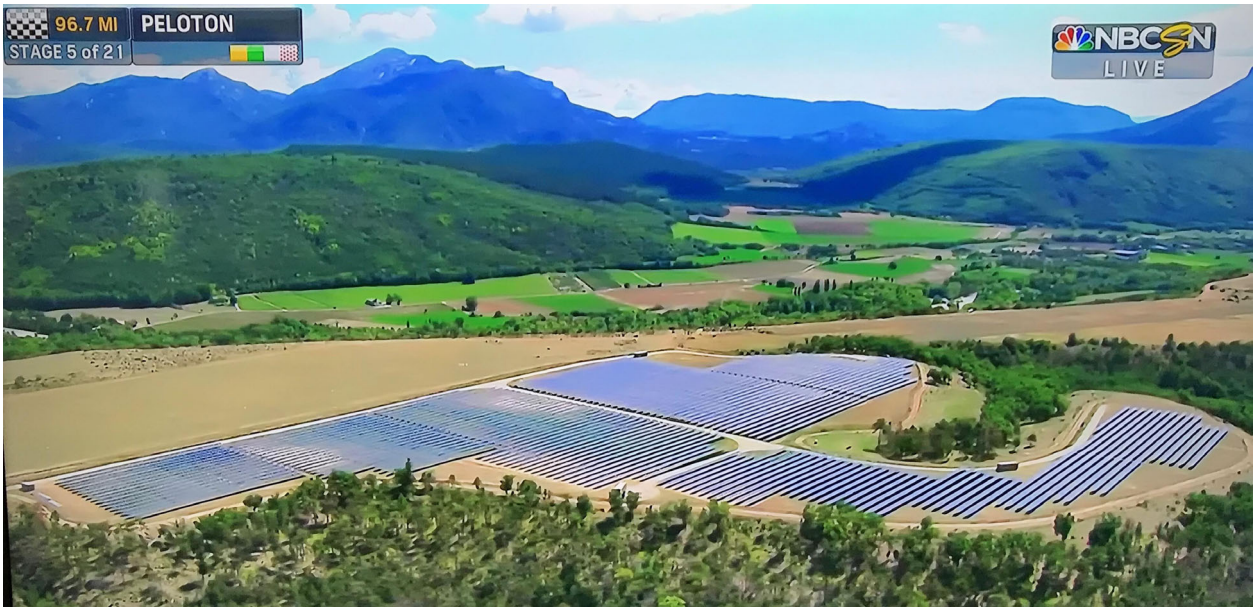
*Maintenance Costs Excluded in Many Theoretical Studies*
Excluding the reduced electric bill savings being implemented by utilities and operating an under-sized Solar PV system and forgoing a battery backup system (for now), payback is all but impossible to achieve due to the repair and maintenance costs associated with rooftop solar.

Energy consultants have been less than forthcoming about the newly required role of property owner as utility operator. Coincident with having to own a complex energy production system, maintenance is required and repairs will have to be performed by the homeowner.

By the time the typical home mortgage comes to an end, a homeowner would have already gone through four different sets of solar inverters and made two sets of solar panel changeouts.

The authors of one economic study acknowledge that they did *not* account for these required 'maintain, then replace' cost elements of Solar PV required for an all-electric house, "We do not include any difference in maintenance or removal costs."

This begs the question, "Why not spare the homeowner from becoming a mini-utility operator in the first place?" Instead, California homeowners should insist the established utility operators (Sonoma Clean Power in Sonoma County and/or PG&E across the North Bay) provide more renewable energy through wind farms, further geothermal production (in the Geysers of Sonoma County), and larger fields of solar panels. Most homeowners would prefer to pay for energy services, not become renewable energy producers [6].




**The French utilize fields of solar arrays. Here, 10 hectares of solar panels maximize their energy output with sunflower-like tracking. Image courtesy NBC, Sept 3, 2020.**

Then there's the practical difficulty of finding someone to fix the solar system when it breaks. Robert Range, in March 2020, posted on Energy Sage, "What about when the solar panel system breaks down or needs repairs . . . My mom's system needs a new main board and although it is under warranty the company hasn't been so fast to replace it." Mr. Range reported that after 3 months there was still no solar energy production at his mother's residence. He goes on, "But I tell you what is still working . . . the interest rate and the loan she needed to purchase the darn thing."

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.

I guess the *new green deal* means homeowners **fork over the green** for this mandated energy deal concocted by state government employing unelected commissions.

**At the retirement party in 2016 for Diane Sugimura, the planning director for the city of Seattle, she chastised we builders in the audience about our "unwillingness" to create affordable housing.**
**I asked: "Why did you think high-cost regulations would create low-cost housing?" After a moment of silence, she asked me: "What do you mean?"**

**Mike Nykreim, Bellevue, Wash.**

**{RKK: Solar mandates make homes less affordable and reduce property values, with new Reach Codes that ban natural gas, which will drive down property values further.}**

**"As far as your position on mandatory residential PV, I agree with you that it is much more expensive to put PV on individual residences than having large centralized systems. Currently, residential PV is mandatory unless the site makes PV infeasible, in which case the PV requirement must be met via a long-term contract for offsite renewables. I think this offsite alternative should be made available as an option in all cases as an alternative to mandatory on-site PV."**

**– Michael Winkler, Mayor of Arcata, December 7, 2020**

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[1] On December 19, 2019, California celebrated the one millionth home to install a Solar PV system, a target established by Governor Arnold Schwarzenegger in 2005. He launched a program that would ultimately set aside more than $3 billion for solar rebates. The former governor credited those rebates with growing the Solar PV market. "Exactly what we predicted would happen did happen, which is that the price of solar came down. So now we don't need any more subsidies," he said.
[2] Source: https://www.smud.org/en/Rate-Information/Getting-solar-right
[3] Source: https://www.tuffshed.com/tuff-shed-tiny-houses/
[4] A new subdivision in Windsor, California features natural gas and the more cost-effective tankless water heater to help keep utility costs down. The builder of "Portello" recognizes the Town of Windsor's obsession for all-electric, and has relented somewhat by offering the State's prescribed, under-sized rooftop solar system. However, for a few extra dollars, the builder offers an upgrade, marketed as super-efficient, solar-powered: "While solar energy may not offset all homeowners' personal usage, buyers will have the option to upgrade and optimize their solar system." Ka-ching, ka-ching, as the tally for housing rises, and places to live become less affordable in Sonoma County. https://www.jkbliving.com/communities/windsor
[5] The cost for utilities to deploy battery backup systems for the lack of solar energy production on cloudy days is so prohibitive that the State of California will soon make homeowners responsible

for deploying solar backup batteries and contribute their power to the electric grid in times of need. Why? Here are the costs for the state and its utilities, provided by Bob Meinetz, an Energy Central contributor:
– 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)
– 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 foot the bill. At a cost of $30,000 for 1-day of battery backup (Dec 2019 pricing) for each all-electric home, the 10.8 million homeowners will fork over the initial $324 billion investment required. Businesses will pay the rest, in theory. It begs the question, "What happens if there are two cloudy days in a row?" This explains, as Meinetz observes, "why batteries will never power the California grid."
[6] "The Sacramento Municipal Utility District, which provides electricity to 1.5 million people, has proposed a plan where builders could satisfy the [all-electric reach code] law if they sign a 20-year contract with SMUD to provide solar energy to new homes from one of several large solar farms miles away, including a 160-megawatt solar farm that SMUD is building now on the site of the former Rancho Seco nuclear plant near Sacramento."
https://www.mercurynews.com/2019/12/15/solar-power-required-for-all-new-california-homes-starting-jan-1/