

The Sun Also Rises

Making sense of changes to the solar environment in California



Courtesy Sunwork Renewable Energy Projects



Courtesy Sunwork Renewable Energy Projects



Courtesy Black Rock Solar / Creative Commons

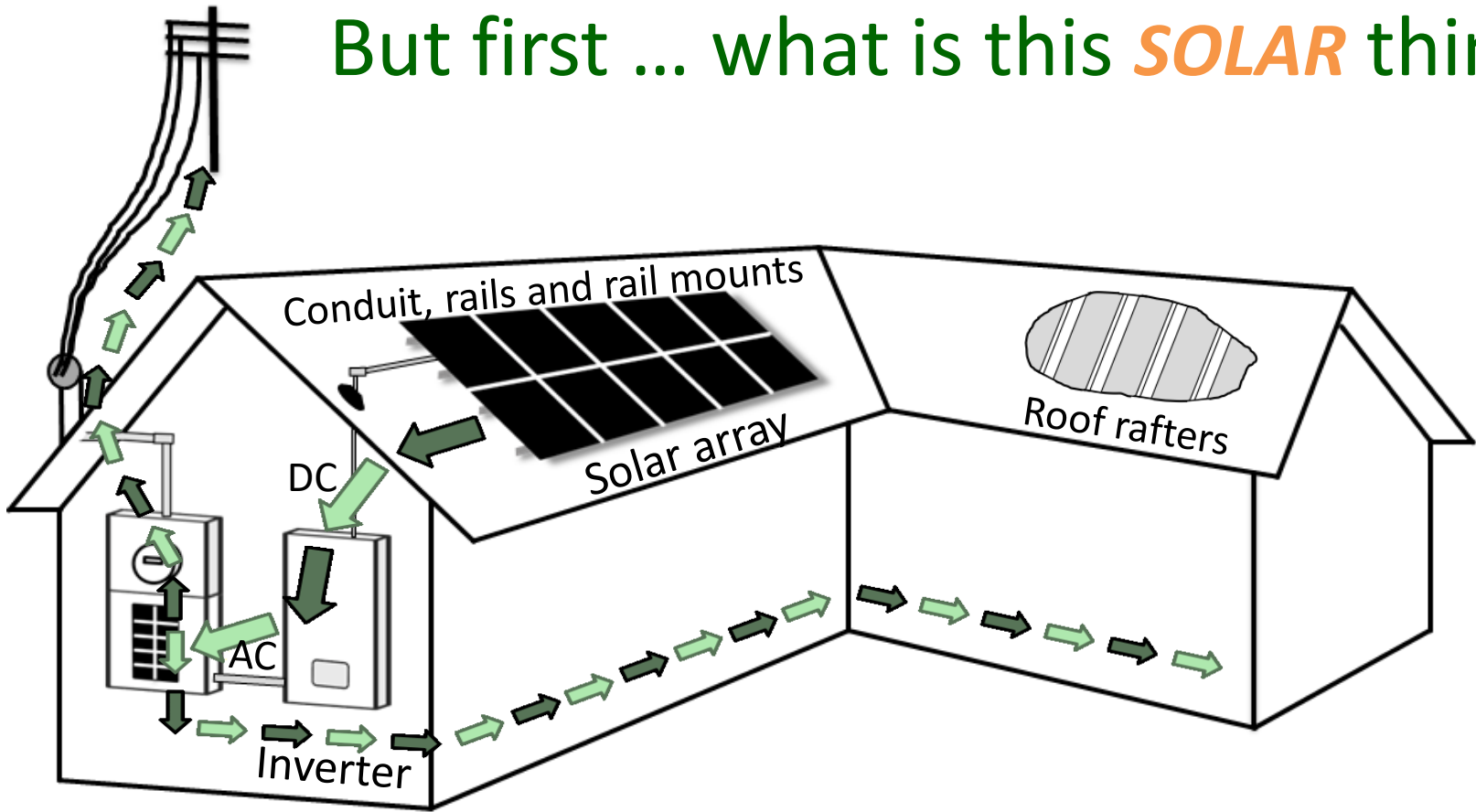
Feb 7, 2022 • Doug McKenzie • RenewableDoug@gmail.com

- 1) What's happening with our rooftop solar?
- 2) What do we do about it?



Courtesy Sunwork Renewable Energy Projects

But first ... what is this *SOLAR* thing?

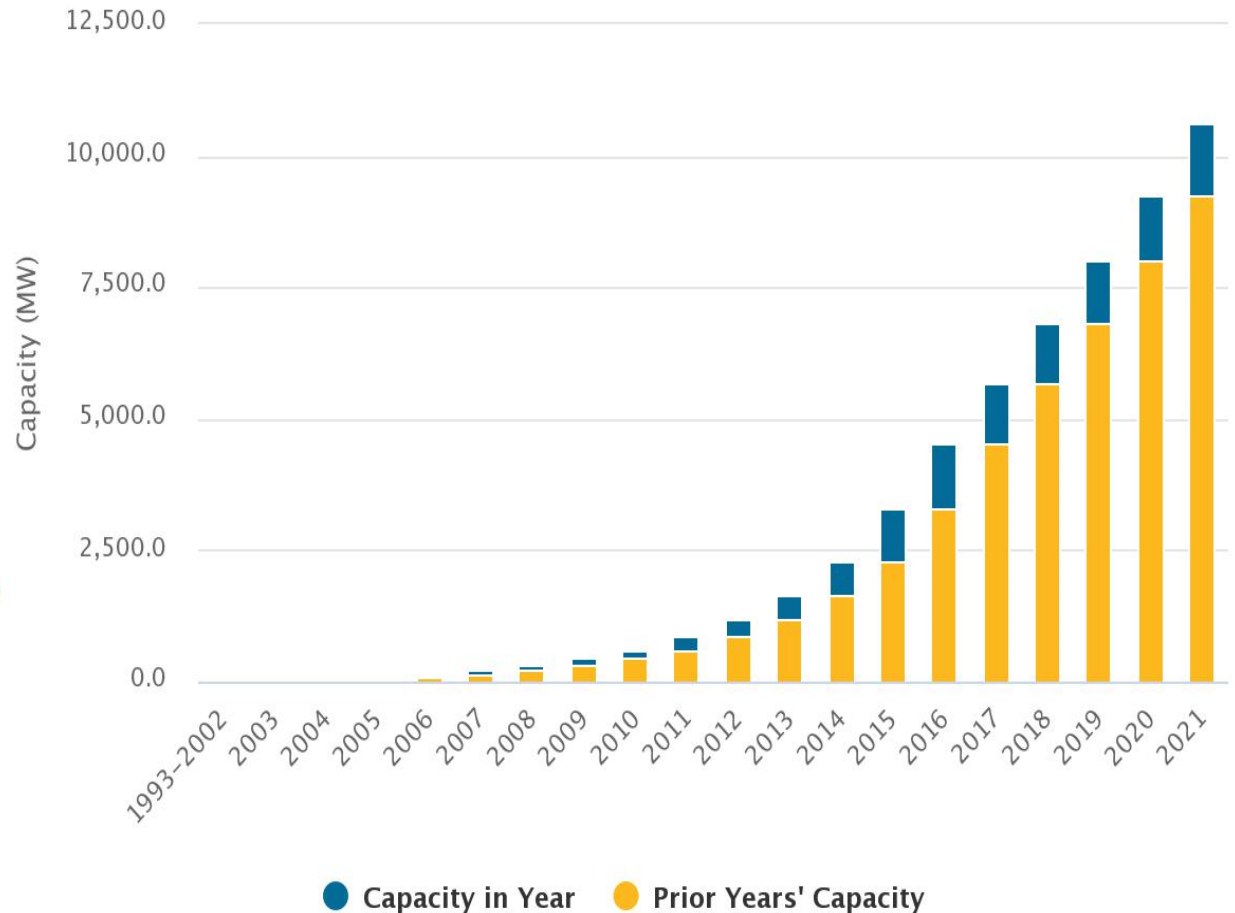
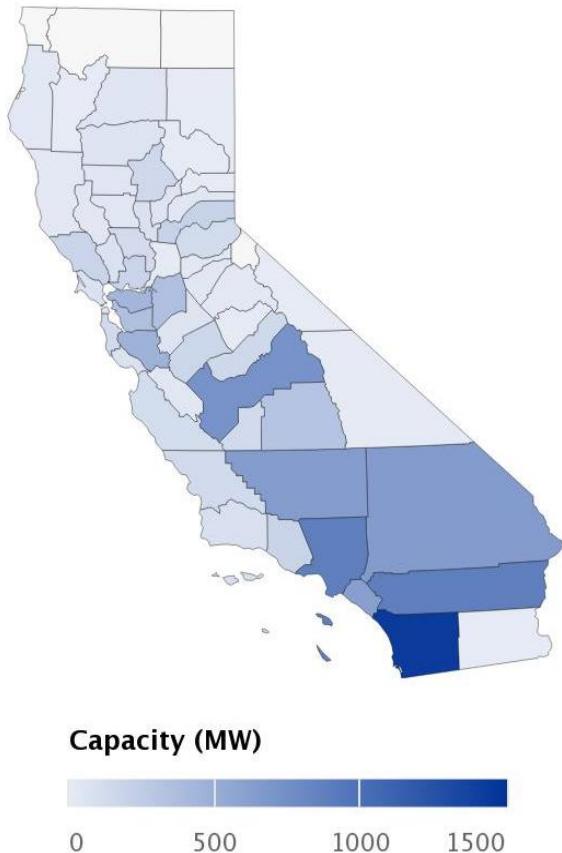


Solar electricity goes to the nearest load

1. Home loads
2. Out the meter to the grid and neighbors' loads
3. Over the grid to the substation and beyond

What's happening – On the roof!

California has 1.3 million solar rooftops
More than 3 times the solar of the #2 state (Texas)



What's happening? – What's Changing?

<https://www.californiadgstats.ca.gov/charts/nem/>

NEM = Net Energy Metering

= How PG&E pays you for solar energy you send to the grid

- **NEM 1 (to Dec 2016)**
 - PG&E pays you the same rate as you pay them
 - Excellent economic incentives to go solar
- **NEM 2 (Dec 2016 to ??May?? 2022)**
 - PG&E pays you almost the same rate as you pay them
 - Very good economic incentives to go solar
- **NEM 1+2 took California to rooftop-solar leadership**
- **NEM 3 (from ??May?? 2022) - ???**



Courtesy Wikimedia Commons

What's happening?

NEM 3 CPUC Proposed Decision

- Based on widely varying inputs
 - AARP, CALSSA¹, Sierra Club, SEIA², ...
 - IOUs³, NRDC⁴, CPUC Public Advocates office⁵, TURN⁶, ...
- Dec 13, 2021 Proposed Decision: summary from the CPUC
 - Modernize NEM to incentivize customers to install storage with solar.
 - Out with ~~NEM-3~~, in with *Net Billing tariff*
 - Equity fund for low-income customers
 - Grid access charge of \$8 per kilowatt
 - Shift compensation from roughly retail to roughly wholesale
 - “Instantaneous netting”
 - Shrinks NEM 1 & 2 grandfathering from 20 to 15 years
 - Much sausage-making

1 California Solar & Storage Association

2 Solar Energy Industries Association

3 Investor-Owned Utilities; PG&E is one

4 Natural Resources Defense Council

5 CPUC's “independent” consumer advocate

6 The Utility Reform Network

What's happening? – Perspectives

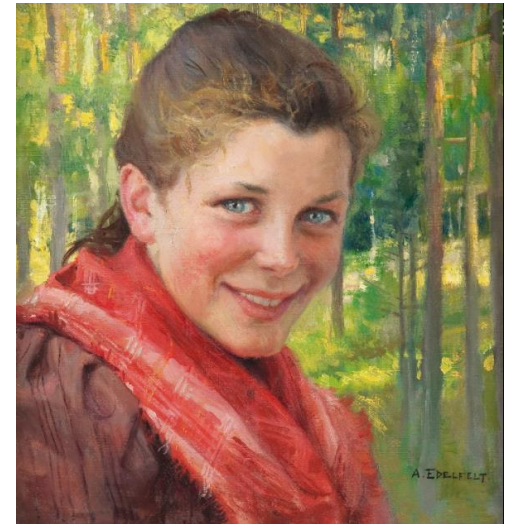
- PG&E/CPUC and allies on the Proposed Decision
 - Balances the needs of electric grid, environment, consumers
 - Changes are overdue. “Rooftop solar program robs from the poor and gives to the rich”
(SJ Mercury Editorial Dec 22, 2021)
 - Helps California decrease dependency on fossil fuels during the early evening when the sun is down and energy demand is high
 - Repairs social injustice, gives incentives for solar and batteries for lower incomes
 - Rooftop solar is not the best way to reach state clean-energy goals.



Courtesy Wikimedia commons

What's happening? – Perspectives

- Rooftop-solar advocates on the Proposed Decision
 - Imposes severe economic penalties for going solar
 - Crippled solar economics hurts all income levels & all installers.
 - Favors PG&E centralized-infrastructure cash cow, sabotages locally-resilient, climate-friendly grid
 - Rooftop solar **IS** one of the best ways to reach clean-energy and climate goals; climate change hits lower-income people first and hardest.
 - Moves residential customers from annual to monthly billing to help us avoid “unexpectedly large” annual true-up bills.
 - Accepts most of PG&E’s proposal
 - \$8/kilowatt per month => \$500/year average!
 - PG&E will pay you ~80% less than you pay them.
 - Retroactive cut to promised grandfathering



Courtesy

<http://gandalfgallery.blogspot.co.uk/2012/07/albert-edelfelt-girl-from-porvoo.html>

What's happening? – Doug's Assessment

- We (California) raced to solar leadership
 - Well-designed *volumetric* incentives
 - California Solar Initiative
 - Million Solar Roofs Initiative (Gov Schwarzenegger)
 - Permit cost capped; Expedited Permit Process adopted
 - Starting Jan 1, 2020, new homes must have solar
 - Result: #1 solar state: 40% of US capacity, 30% of US installations
- Causes of the *Proposed-Decision* retreat from leadership
 - Misleading but compelling “cost-shift” messaging
 - Inordinate complexity repelled normal people from engaging.
 - IBEW (electrical workers union) support swayed progressive union advocates.
 - CPUC's close♥relationship with PG&E
 - Petitions/calls/emails against anti-rooftop-solar proposals & Proposed Decision vastly outnumbered those for, but ...

What's happening? – Timeline

NEM 3 decision

- Dec 13, 2021: Proposed Decision announced
- Starting Dec 13: Petitions and > 100,000 calls and emails to Gov Newsom demanding he stop the carnage
- Jan 11: Gov. Newsom: “More work to be done”
- Feb 3: Final decision vote postponed *until further notice*
Formal reason: new CPUC President Alice Reynolds wants all recent commission appointees to be seated.
 - *Contributing*: Pressure on Gov Newsom
- Doug's guesses
 - At least 3 months until final decision
 - 4 months from decision to implementation



Questions?

(about What's happening)



If no questions, beware,
I will tell a math joke!

Next: What do we do about it?

What do we do about it? - Alternatives

- NOW: Continue pressuring Newsom and the CPUC
- SOON: Initiate targeted effort to reverse NEM 3
- KEEP THE FAITH: Install grid-independent solar+batteries
- VISION: *MicroGrids!*

What do we do **NOW**?

Continue pressuring Newsom and the CPUC

- We're not sure where Newsom stands or what he wants or will accept.
- So we need to tell him where to stand and what to accept from the CPUC.
 - We want forward-looking, local, decentralized resilient power, not the century-old centralized power model.
 - We want *much* more rooftop solar, not *much* less.
- Contact Gov Newsom:

916-445-2841

<https://govapps.gov.ca.gov/gov40mail/>

What do we do **SOON**?

Targeted effort to reverse NEM3

(assumes the final decision is unacceptable)

- Precedent! – Nevada PUC retroactively cut rooftop solar
“Nevada’s bizarre decision to throttle its own solar industry, explained” (*David Roberts / Vox / Jan 2016*)
- Massive public backlash caused the ruling to be reversed, by *unanimous* vote of the PUC
“Nevada Regulators Restore Net Metering for Existing Solar Customers” (*Julia Piper / Greentech Media / Sep 2016*)
- Campaign to *Nevadaradicate* NEM 3
and/or
- Campaign for a California Proposition to reinvigorate rooftop solar!

Don't let rooftop
solar go dark!



What do we do to **KEEP THE FAITH?**

Install grid-detached solar and batteries

- Home stays grid-connected
 - Off-grid solar charges off-grid batteries, avoids PG&E penalties for grid-tied solar
 - Batteries can be stationary, portable and/or EVs
 - EVs have **large** batteries. 1 GM Bolt battery has greater capacity than 4 Tesla Powerwalls.
-
- New product from dcbel.energy
 - “dcbel can charge your electric vehicle with solar energy and transform its battery into a backup power source.”
 - Taking reservations now



Tesla Powerwall photo courtesy of Raysonho

<https://commons.wikimedia.org/wiki/File:TeslaPowerwall2-2.jpg>

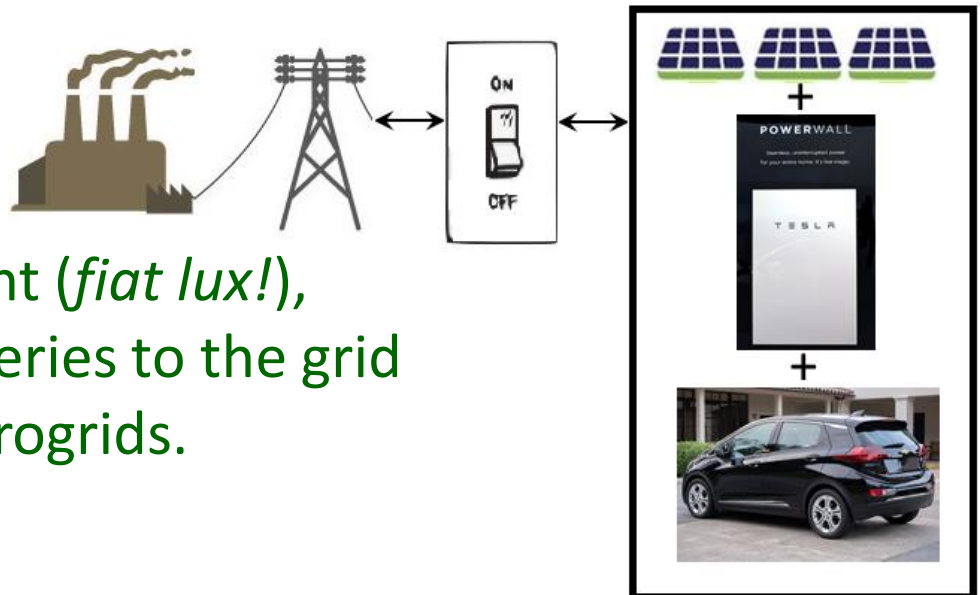
Chevy Bolt photo courtesy of Gregory Varnum:

[https://commons.wikimedia.org/wiki/File:2019_Chevrolet_Bolt_EV_-_April_2019_\(3343\).jpg](https://commons.wikimedia.org/wiki/File:2019_Chevrolet_Bolt_EV_-_April_2019_(3343).jpg)

What do we do to en**VISION** the future?

⚡ *MicroGrids!* ⚡

- Microgrids empower local, clean, cheap, safe, resilient energy.
- Climate-friendly, resilient, outage-minimizing, sustainable-energy future
- If the NEM 3 final decision goes with backwards-looking centralized power and stifles rooftop solar, microgrids will not be viable.
- Eventually, we will see the light (*fiat lux!*), re-connect our solar and batteries to the grid and build interconnected microgrids.



MicroGrid

Thanks!

Questions?

