



# SOLAR UNITED NEIGHBORS

How to Fight the Solar “Cost Shift” Myth  
September 9, 2020



# Solar United Neighbors



## Our Solar Rights

- Fundamental freedom to make our own energy choices
- Right to go solar without interference from monopoly utilities
- Learn more @ [solarunitedneighbors.org](http://solarunitedneighbors.org)

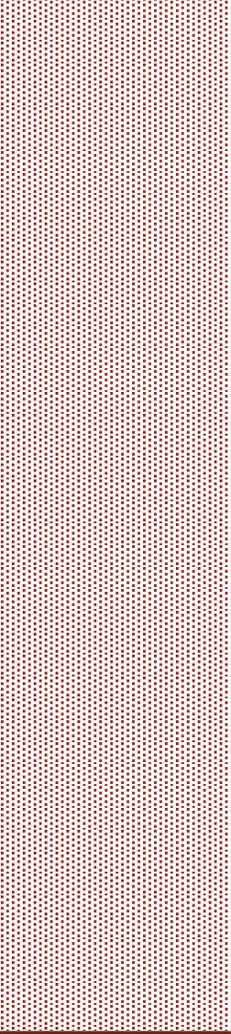


# How to fight back against myths of a solar "cost shift"

Karl R. Rábago  
Rábago Energy LLC

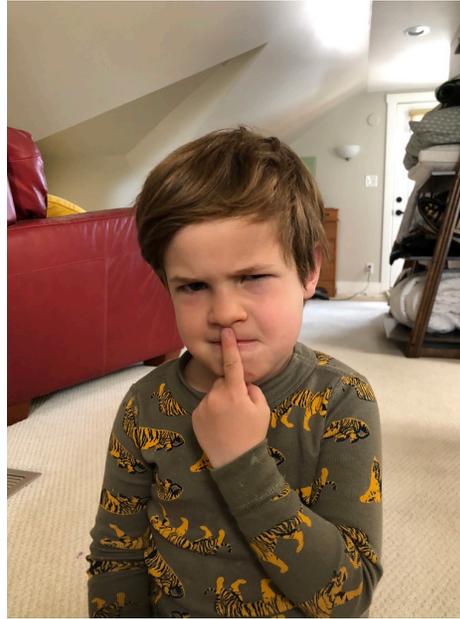
9 September 2020



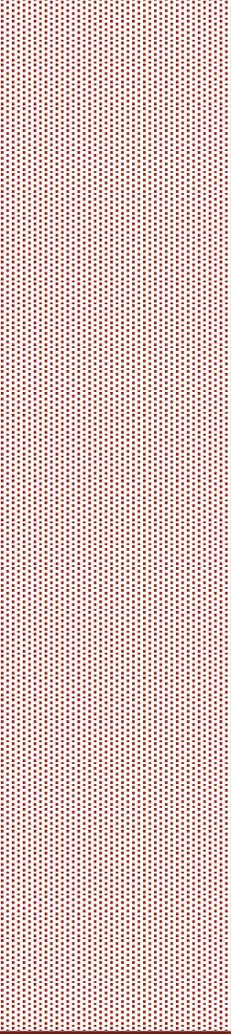


# Rábago Energy LLC

- 30+ years utility regulation & markets, plus bioplastics and biofuels.
- Testimony in 100+ cases & proceedings.
- Intervenor in NY REV, MD UOF, RI PST, etc.
- Attorney.
- Former Cav Officer, JAG, TX PUC Commissioner, DOE DAS, utility exec., environmental advocate, sustainability manager, carbon credit developer, law professor, R&D manager, etc.
- Easily bored.

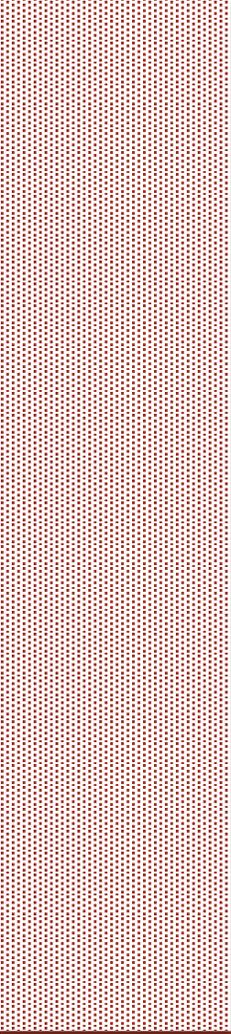


# WHAT IS A COST SHIFT ANYWAY?



# Cost Shifts

- A “cost shift” occurs when a regulator approves an order that changes rates and changes the relative shares that different customers pay.
- Cost shifts can be fair or unfair, and it mostly depends who you ask.
- Cost shifts can be significant or not. Here are things that really do create cost shifts much, much bigger than solar:
  - Economic development rates for companies using MORE electricity.
  - Discounted rates to large industrial customers.
  - Changes in rate design.
  - Weather.
  - Pandemics.
  - Power plant environmental clean up.
  - Utility rate increases for, you know, profits.
  - Low-income programs.
  - Suburban sprawl.
  - People who work the night shift.



# Cost Shifts

- Utilities spend a lot of time and your money arguing that solar customers create cost shifts by using less electricity than they did before.
- Some utilities even argue that solar customers create, but do not pay for, new costs. But there is no real evidence of that (after connection charges).
- In the big pool of customers, creating a cost shift is like claiming a legal tax deduction. One customer pays less, and if government didn't budget properly, there will be a tax revenue shortage and taxes might go up unless the government reduces its spending.
- Any and all customers who reduce their use, especially during periods of peak demand, create the *potential* for cost shifts.

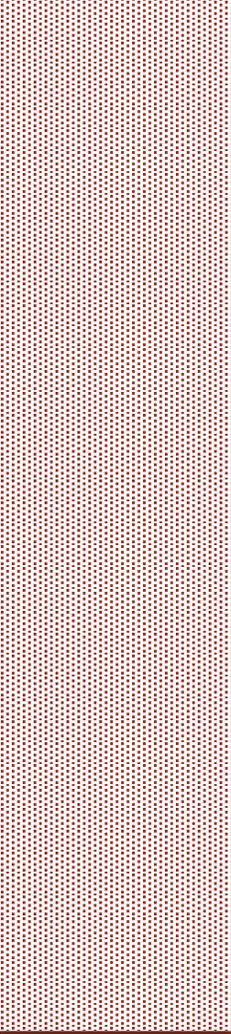
*So the question is whether this is a cost shift we want to encourage, or not.*

# Basic Cost Shift Math

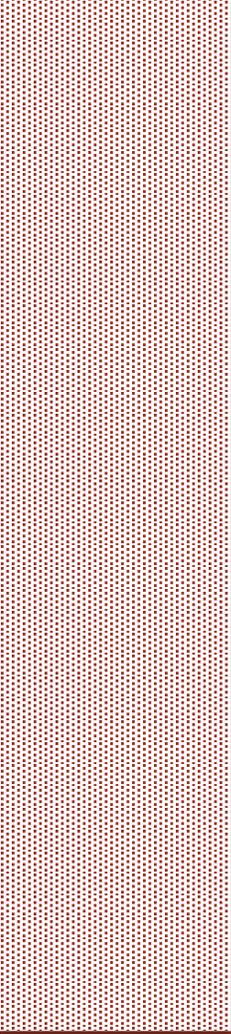
|   | After One Customer |                 |                              |
|---|--------------------|-----------------|------------------------------|
|   | Starting Situation | Cuts Use by 50% | Difference                   |
| Utility Revenue Requirement                 | \$1,000,000        | \$1,000,000     | \$0                          |
| Annual Use                                  | 10,000,000         | 9,995,000       | (5,000)                      |
| Number of Customers                         | 1,000              | 1,000           | 0                            |
| Annual Revenues without Cost Shift          | \$1,000,000        | \$999,500       | (\$500)                      |
| Average Annual Use                          | 10,000             | 9,995           | (5)                          |
| Average Rate to Collect \$1 Million Revenue | \$0.10000          | \$0.10005       | \$0.00005 <i>Rate Impact</i> |
| Average Annual Bill                         | \$1,000            | \$1,000         | \$0                          |
| Non-Saver Annual Bill                       | \$1,000.00         | \$1,000.50      | \$0.50 <i>Cost Shift!!!</i>  |

**Assuming utility failed to forecast and kept costs high.**

- Utility needs \$1,000,000 for costs each year
  - We call this “revenue requirement”
- Utility predicts/forecasts it will sell 10 million units of energy (kilowatt-hours), and on average 10,000 kWh to each of 1,000 customers.
- Utility *expects* it will collect \$1,000 from each customer each year at a rate of 10 cents per kWh.
- One customer reduces use by half—saving \$500 on electric bills—with solar, efficiency, getting your kids to shut the darn refrigerator . . . whatever.
- Now the utility is “short” \$500 – a cost that it will want to shift to all the other 999 customers, so it will still make its \$1,000,000 next year.
- So now, with everything the same, the utility forecasts that it must increase rates for everyone to 10.005 cents



# **SOME ACTUAL NUMBERS FROM A REAL CASE**



# Michigan Consumers Energy Case

Net metering customers = 1/10th of 1% or 1/1000<sup>th</sup> of all customers

Net metering customer sales = .08% of all residential sales

Net metering peak contribution = .095% of class peak usage

Natural annual residential sales variation = 9 to 63 times more than the total net metering sales; on average 34 times greater (2014-2018)

1,700 total net metering customers in 2018.

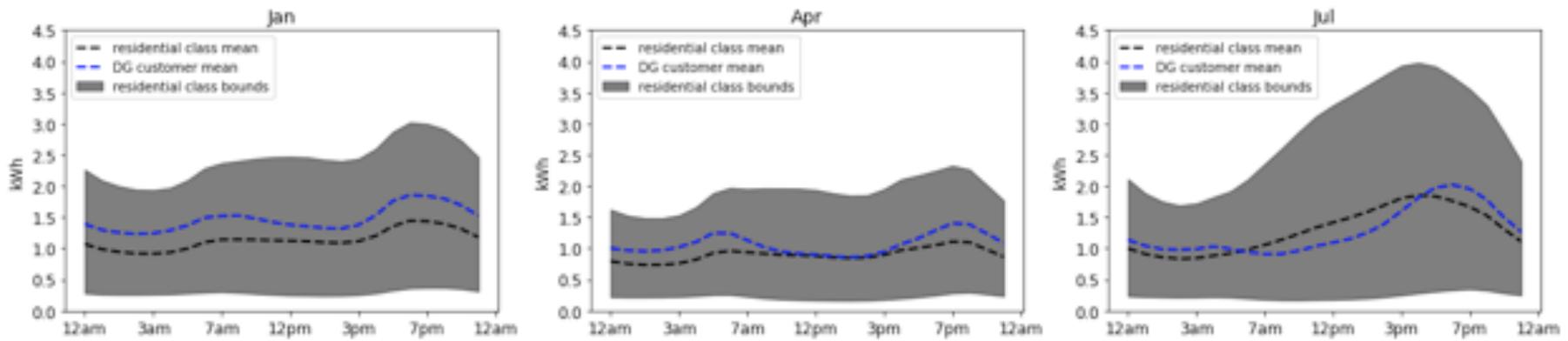
# Michigan Consumers Energy Case

- Average solar customer uses 9,112 kWh/yr
- 7 kW solar system produces 8,890 kWh/yr
- Utility would do **this** in the name of preventing a “cost shift:”

|  | Net Energy Metering<br>(old program) | Proposed Distributed<br>Generation Program | Difference            |
|--|--------------------------------------|--|-----------------------|
| Annual Electricity Bill<br>with No Solar | \$1,640                              | \$1,640                                    |                       |
| Annual Bill with<br>System (Year 1)      | \$139                                | \$529                                      | <b>\$390</b>          |
| Net Present Value of<br>Investment       | \$1,903                              | -\$2,789                                   | <b>-\$4,692</b>       |
| Simple Payback                           | 9.2 years                            | 12.7 years                                 | <b>Adds 3.5 years</b> |

- Result: \$17 more in charges per month; 62% bill increase.

# Solar Customers Aren't That Different



# What Does Actual Cost of Service Show?

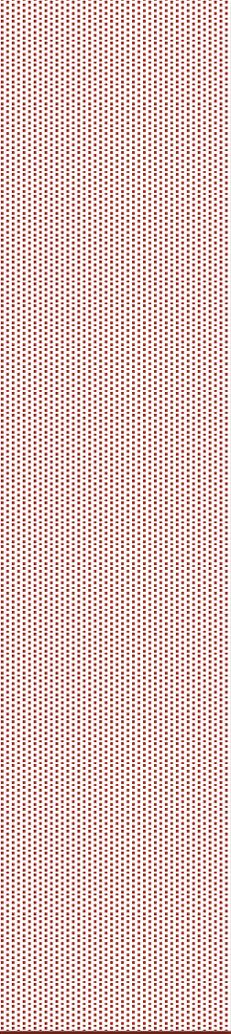
| Outflow             | kWh       | Weighted Rate | Value     |
|---------------------|-----------|---------------|-----------|
| CPP                 | 232,330   | \$1.23699     | \$287,391 |
| Summer On-Peak      | 859,071   | \$0.06263     | \$53,800  |
| Summer Off-Peak     | 322,163   | \$0.01132     | \$3,648   |
| Non-Summer On-Peak  | 782,676   | \$0.03748     | \$29,336  |
| Non-Summer Off-Peak | 288,654   | \$0.00000     | \$0       |
| Total Sales         | 2,252,564 | \$0.07346     | \$165,475 |
| Total               |           |               | \$539,649 |
| Total Credit Rate   |           |               | \$0.23957 |

Table 12 - Calculation of Outflow Credit Rate

**Takeaway:** Based only on actual cost of service, a residential customer with solar should be PAID between 27 and 29 cents per kWh. The utility's rate is about 15 cents on peak (weekdays, 2 – 7 pm) and about 10 cents all other times.

## Analysis by SEIA's Kevin Lucas

- Just using utility cost of service data.
- No analysis of additional benefits or avoided costs (e.g., jobs, climate value)
- Additional 3-5 cents for lower cost to serve
- CPP = Critical peak pricing
- On-peak = most expensive hours
- Off-peak = less expensive



# Words of Wisdom

*For the overwhelming majority of utilities, current solar PV levels are far too low to result in any discernible effect on retail electric prices, even under the most pessimistic assumptions about the value of solar and generous assumptions about compensation provided to solar customers (e.g., full net metering with volumetric rates).*

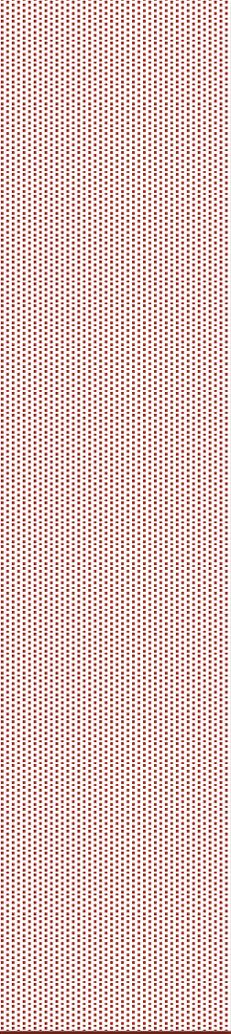
Galen Barbose, Lawrence Berkeley National Laboratory

# So, What Should Utilities Do?

- Conduct a comprehensive “Value of Solar” analysis
  - Using lifetime of solar generation
  - Accounting for all relevant benefits and costs
  - Follow national best practices; i.e. [NSPM-DER](#)

*That tells you **cost effectiveness**.*

- ***Rate Impact Analysis*** tells you how regulatory treatment of costs and benefits impacts solar and non-solar customers.



# Thank you!

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SUNRUN

# The Myth of Cost Shift

Solar United Neighbors Webinar

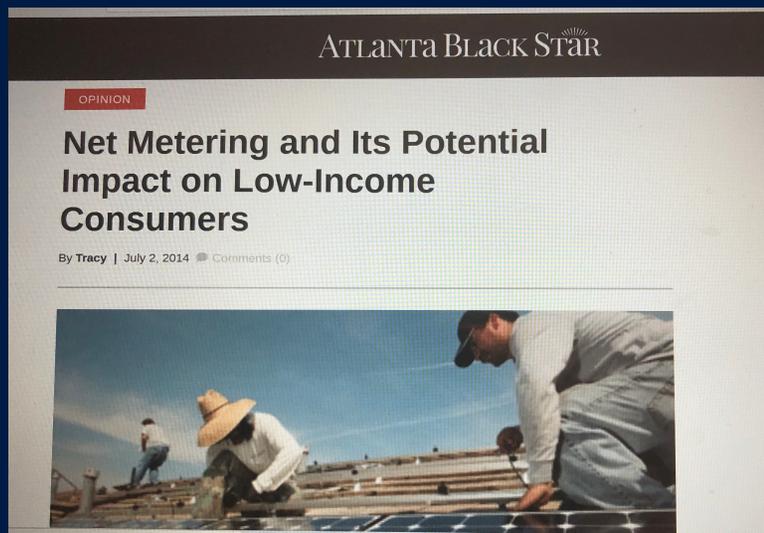
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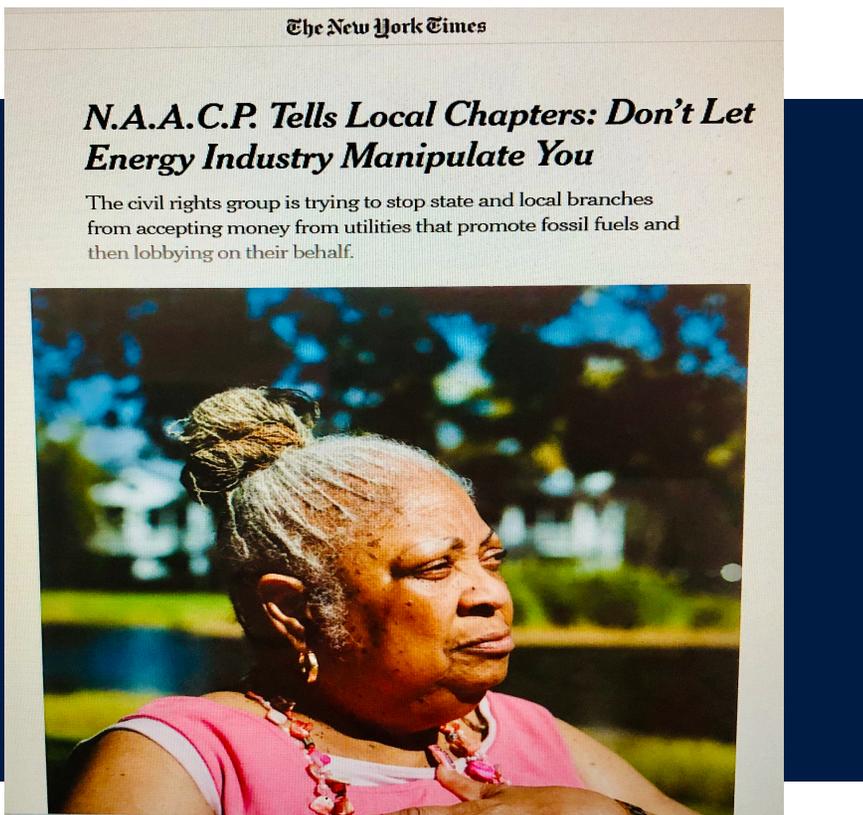
# Topics

- 01** | About Sunrun
- 02** | The Narrative: Misleading Headlines about Rooftop Solar and Equity
- 03** | The Money: Follow It
- 04** | The Facts: Net Metering & DG Benefits Everyone
- 05** | The People: Communities Want Rooftop Solar for Economic Empowerment, Public Health and a Resilient Grid

The Narrative: Headlines claiming that rooftop solar and net metering discriminates against people of color and low-wealth communities.



# The Money: Consider the Source



**“From 2013 to 2017, 10 of the country’s largest utilities gave about \$1 billion in donations. Those contributions often went to groups representing minority communities, and many of the recipients promoted the interests of utilities in front of government regulators, according to the Energy and Policy Institute, an environmental group.”**

Source: Penn, Ivan, *NAACP Tells Local Chapters: Don't Let Energy Industry Manipulate You*, New York Times, Jan. 5, 2020, available at: <https://www.nytimes.com/2020/01/05/business/energy-environment/naacp-utility-donations.html>

# The Money: Consider the Source

“Of course, there’s already an energy divide that’s long been in place under the rule of the current fossil fuel-based utility system. The Black State Legislators report acknowledges the divide, but spends no ink grappling with the utility companies’ culpability in creating it — only that solar distributed generation will make it worse.

The two sources cited in the report to back up its claims come from fossil fuel lobbies: American Electric Power and the American Coalition for Clean Coal and Electricity, a major donor contributor to associations comprised of black elected officials.”

Source: Mock, Brentin, *Big Energy has tried to turn people of color against solar power since forever*, Grist.org, Nov. 14, 2014, available at: <https://grist.org/climate-energy/big-energy-has-tried-to-turn-people-of-color-against-solar-power-since-forever/>



# The Facts: Benefits Outweigh Costs

## Net Metering

- ❑ Numerous independent studies have shown that net metering provides a net financial benefit to all ratepayers.
- ❑ A simple compensation mechanism easy for customers to understand.
- ❑ The net metered exports generally travel short distances over distribution lines to reach neighboring homes or businesses.
- ❑ The net metered exports represent power (often during peak times) that the utility does not have to procure or produce from other sources, thus reducing its energy and capacity related costs.
- ❑ Net Metering has created thousands of jobs.

## Rooftop Solar

- ❑ Rooftop solar delivers power at the source; utility-scale solar requires transmission and distribution. Utilities avoid line losses and transmission and distribution costs when rooftop solar supplies a customer and their neighbors at the source.
- ❑ Customer-driven rooftop solar accelerates environmental and societal benefits. Rooftop solar utilizes the built environment, reducing the amount of land used for energy production.
- ❑ Rooftop solar offers a cost-effective approach to grid modernization. Capital for rooftop solar is provided by customers or third parties, who bear the installation and operational risks of the generation. Utility-developed solar installation costs and risks are put on all ratepayers.

## Net metering benefits solar and non-solar customers alike.

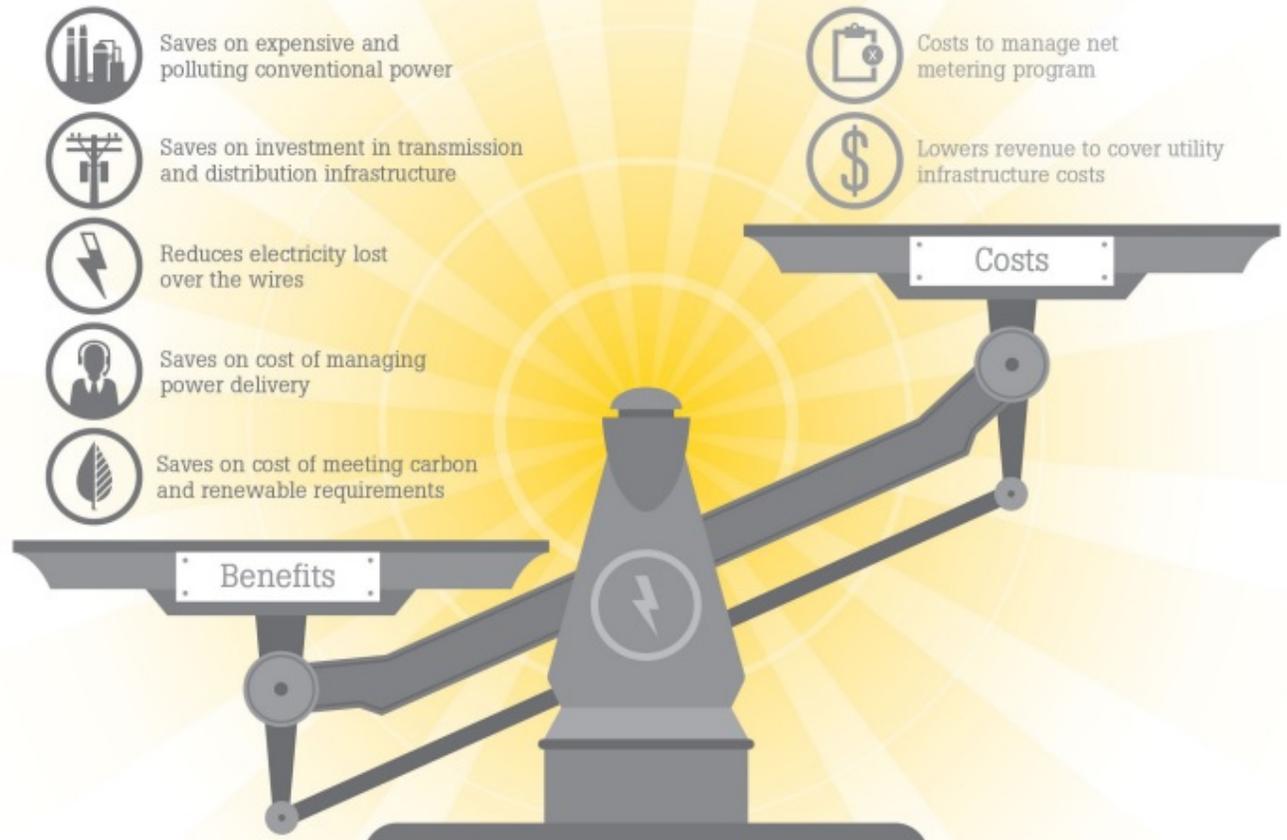


Image: Vote Solar

## The People: Communities Support Rooftop Solar

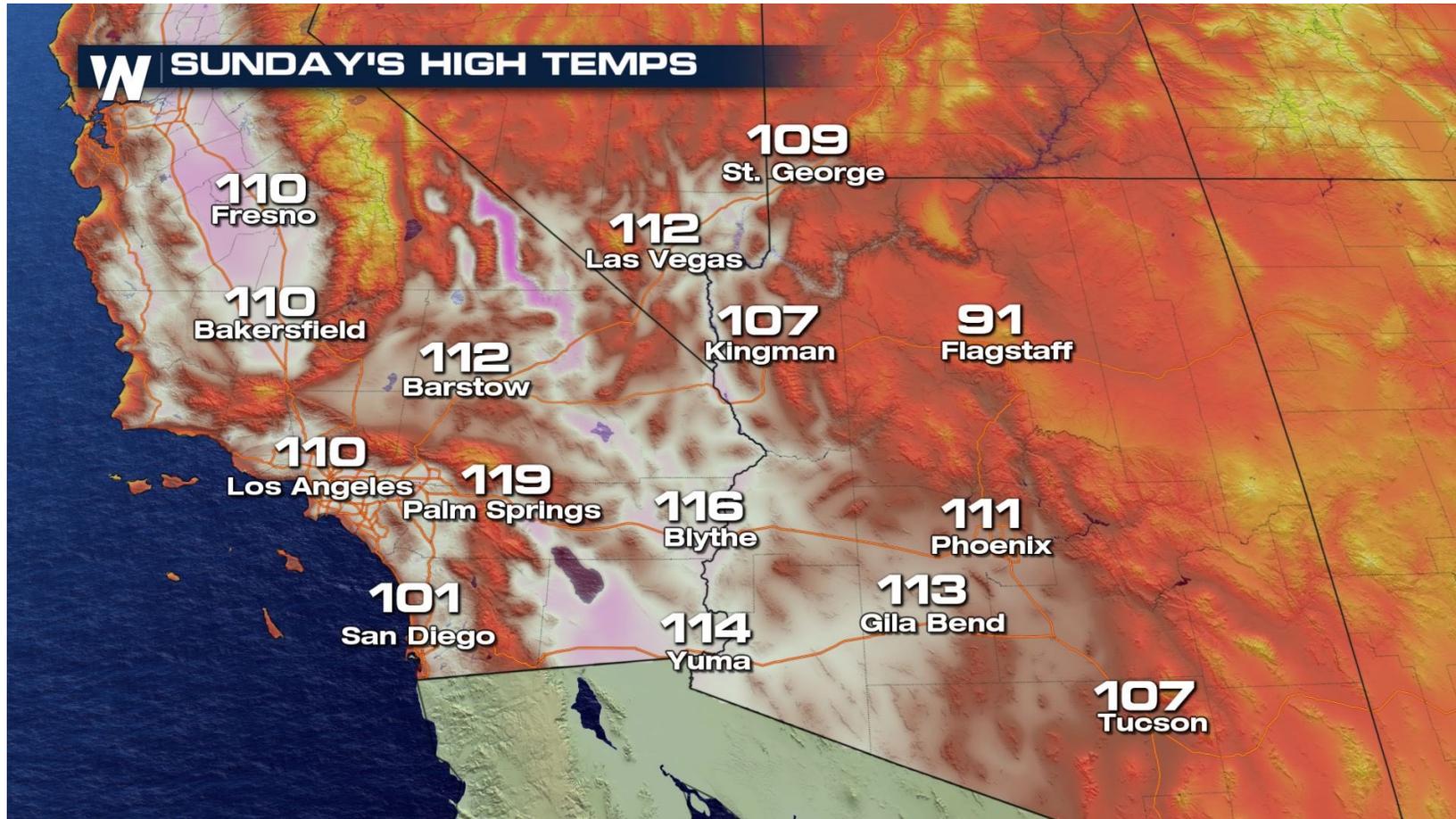


Image: NAACP

**“State net metering policies and distributed solar systems are foundational to achieving the nation’s urgently-needed clean and just energy transition—to address historical environmental injustices, fight the climate emergency, and ensure long-term resilience. Families classified as low-wealth and Black, Brown, Indigenous and other communities of color are disproportionately impacted by the pollution from centralized dirty fossil power and the ravage of climate.”**

Source: 450 Groups’ Letter Urging Rejection of the NERA Petition, June 15, 2020, available at:  
[https://www.biologicaldiversity.org/programs/energy-justice/pdfs/2020-6-15\\_450-Groups-Letter-to-FERC-re-NERA-petition.pdf](https://www.biologicaldiversity.org/programs/energy-justice/pdfs/2020-6-15_450-Groups-Letter-to-FERC-re-NERA-petition.pdf)

# The Real Cost Shift



A row of houses is silhouetted against a vibrant sunset sky. The sky transitions from a deep purple at the top to a bright orange near the horizon. Several houses have solar panels installed on their roofs. Some windows are illuminated from within, casting a warm glow. The houses are set behind a green lawn.

# Thank you.

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**SUNRUN**

# Questions?

## Resources

- [advocacy@solarunitedneighbors.org](mailto:advocacy@solarunitedneighbors.org)
- [SolarUnitedNeighbors.org](http://SolarUnitedNeighbors.org)



**Stand up for your solar rights!**  
#SaveSolar