

INSIDE CLEAN ENERGY ⚡

Inside Clean Energy: The Rooftop Solar Income Gap Is (Slowly) Shrinking

Research shows that falling costs are helping to make solar accessible to people with lower incomes.



By Dan Gearino 

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Contractors install SunRun Inc. solar panels on the roof of a new home at the Westline Homes Willowood Cottages community in Sacramento, California, on Aug. 15, 2018.

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One of the most common arguments against subsidizing rooftop solar is that the benefits mostly go to affluent households that don't need any help.

But the reality is that the declining costs of rooftop solar, along with access to solar leasing and other financing methods, are helping to reduce the income gap between solar households and U.S. households in general.

A **new report** from Lawrence Berkeley National Laboratory shows a continuing diversification of solar adopters in terms of income and race. Solar households had a median income of \$113,000 last year, compared to the median income for all U.S. households of \$64,000, a difference that is much smaller than it was in 2010 when the median income of a solar household was about \$140,000.

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It is accurate to say that solar households tend to have higher incomes than households in general, but this kind of broad-brush statement—often made by utilities—is becoming less so with just about each passing year.

Among households that added solar in 2019, 21 percent had incomes that were below 80 percent of their “area median income,” a threshold often used to define low income, the report said. The share of solar adopters in this income category continues to rise.

Solar advocates can find some things to like in this research, and some to lament. The income gap is shrinking, but the pace of that trend is gradual.

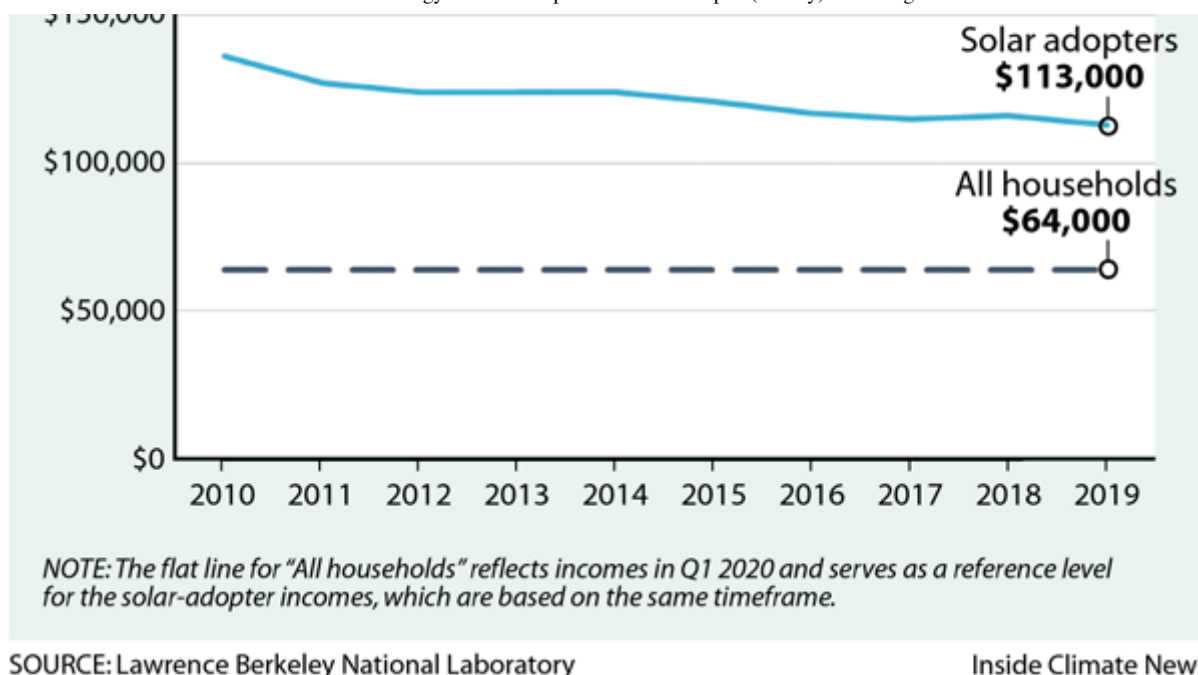
“The core finding in this work is that there’s this income disparity and it’s declining over time, but it’s declining quite slowly,” said Galen Barbose, a research scientist at the Lawrence Berkeley lab and the report’s lead author.

I asked him how his research should fit into some of the policy debates about subsidies for rooftop solar. His answer was that he was reluctant to connect the findings to any debate, and will let others figure out the relevance for policy questions.

“While it’s true that solar adoption has skewed toward higher-income households, it’s also true that it would be an oversimplification to say that solar adopters are simply wealthy households,” he said.

Rooftop Solar Income Trends

Adoption of rooftop solar is gradually becoming more common for people with low and moderate incomes, according to Lawrence Berkeley National Laboratory.



This is the second report in a series that **began early last year**, part of the Lawrence Berkeley lab's continuing research into the finances and demographics of rooftop solar owners.

The report used a sample of 1.9 million rooftop solar systems obtained by the lab, plus estimates of household incomes provided by Experian, the credit reporting company. The sample doesn't include households with community solar, in which subscribers get a share of the electricity from larger solar systems.

The authors also identified racial and ethnic categories using block-level data, finding that solar adopters live on blocks that have larger Hispanic and Asian populations than the country as a whole. But some of this is because California has the most solar adoption of any state and has large Hispanic and Asian populations.

Within most states, the report showed solar adoption skews toward blocks with high white populations.

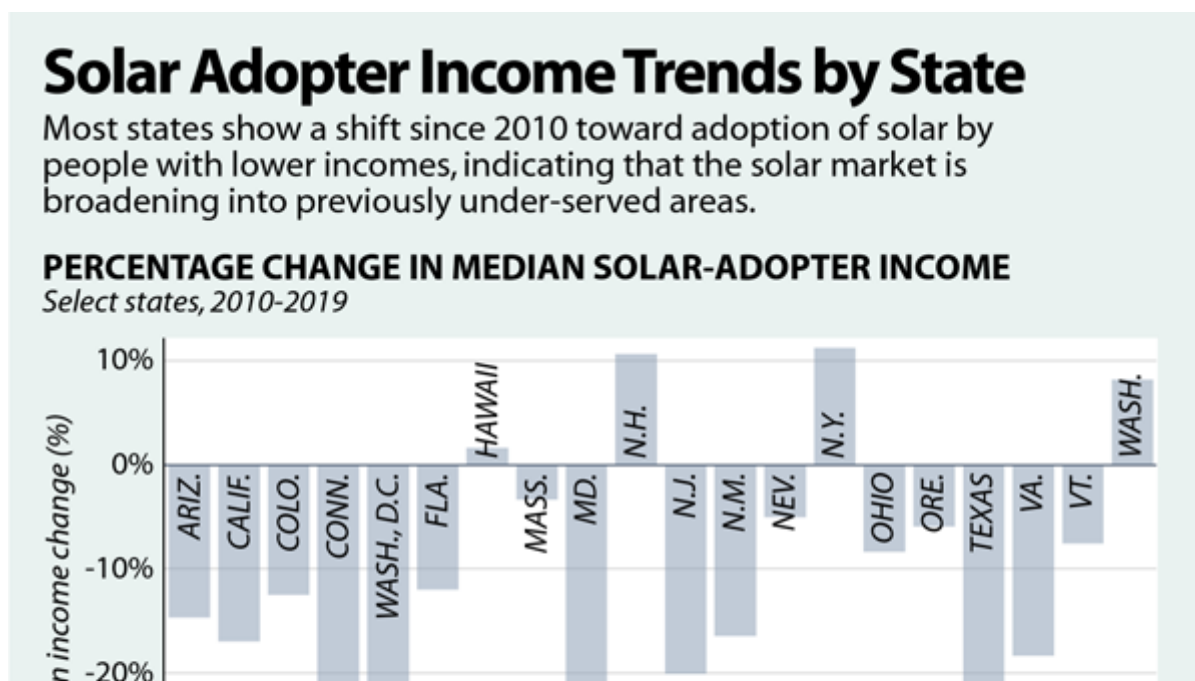
Previous research from the Lawrence Berkeley lab has shown some of the drivers of solar adoption by people with low-to-moderate incomes. An

an up-front payment that now is an average of \$11,240 for a 4-kilowatt system, a common system size. Sunrun, the country's market leader in solar installation, uses leasing as a key part of its business model.

Also, the installed cost of residential rooftop solar has fallen by about half since 2010, according to the Lawrence Berkeley lab's annual "Tracking the Sun" reports.

People who buy rooftop solar get help from federal policies like the investment tax credit, which shaves 26 percent off of the cost, and from state policies like net metering. As I wrote last week, some of the fiercest debates are about net metering, which refers to the way that utilities buy excess electricity from solar owners. Some states are looking to change net metering policies to reduce the benefits for solar owners.

Solar advocates have long argued for the continuation and even expansion of government aid, based on the idea that solar has broad benefits for the public, reducing the need for centralized power plants and giving people more of a personal stake in the transition to clean energy.



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Many of those same advocates have worked to expand programs that provide solar to low-income households, like the [Solar for All program in Illinois](#) or the [Low-Income Solar Program](#) in Colorado.

The Lawrence Berkeley lab report doesn't attempt to quantify the role of low-income solar programs in broadening solar adoption, but it does show an unmistakable shift toward the kind of market in which rooftop solar is no longer a luxury item.

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Some other stories about the energy transition to take note of this week:

Xcel Goes from Coal to Solar: Xcel Energy has proposed what would be, by far, the largest solar array in Minnesota, and it would be built adjacent to the company's Sherco coal-fired power plant. [Mike Hughlett of The Star Tribune reports](#) that the solar array would be 460 megawatts and cost \$575 million. The new project would go online in 2024, which is when the first of three generating units at the Sherco plant will be closing, part of an existing plan to completely close the plant by 2030. Xcel was the first large U.S. utility to set a goal of getting to net-zero emissions, which it aims to do by 2050, and this solar project is part of that transition, the company said. By building in the same city as the Sherco plant, Xcel can use the grid connections that are already there for the coal plant and it can help to address ongoing concerns that the community will have a difficult time replacing the jobs and tax revenue from the coal plant.

Looking at the New Players in Long-Duration Energy Storage: I wrote last month about the sad end of Greentech Media, one of the leading news outlets for covering the business of the energy transition. So I was pleased

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[launch of Canary Media](#), a new nonprofit news outlet that features most of the staff from Greentech Media, plus several other familiar and well-regarded names. Eric Wesoff, the new site's managing editor, has the kind of story I liked so much at Greentech Media, [a roundup of the companies that are developing energy storage systems that can discharge for days as opposed to hours](#). Welcome back, everyone. You weren't gone long, but you were missed.

Probing Conditions in China's Solar Industry: One of the nagging issues in the growth of solar power is that China's Xinjiang region produces about half the world's polysilicon, an essential raw material in the most common solar panels, and there are ongoing concerns about labor conditions in the plants there. Because of the secrecy of the Chinese government, we know little about what's happening. That's why [a story this week from a team of reporters at Bloomberg Green](#) is so important, helping to explain the region's solar industry, and contributing new and troubling insights about the conditions there.

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not enough that the United States has rejoined the Paris Agreement. The Biden Administration is also facing pressure from environmental advocacy groups to be more ambitious and adopt a new goal of cutting emissions 50 percent from 2005 levels by 2030, according to [a story from my colleague Marianne Lavelle](#). The administration is likely to announce its plans in the next two weeks. "At this moment, it's not enough to just say, we're back," said Rachel Cleetus, policy director for the climate and energy program at the Union of Concerned Scientists. "We have to come back with a very bold commitment to climate action."

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Dan Gearino covers the midwestern United States, part of ICN's National Environment Reporting Network. His coverage deals with the business side of the clean-energy transition and he writes ICN's [Inside Clean Energy](#) newsletter. He came to ICN in 2018 after a nine-year tenure at The Columbus Dispatch, where he covered the business of energy. Before that, he covered politics and business in Iowa and in New Hampshire. He grew up in Warren County, Iowa, just south of Des Moines, and lives in Columbus, Ohio.



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Residents of Sunset Park, a largely immigrant, working-class community, hope the project will bring high-paying jobs to an economically-stressed neighborhood.

By Nicholas Kusnetz

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