

Distributed Solar Across Income Levels

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Distributed Solar is Broadly Distributed Across Income Levels

- MYTH: Solar is for (or mostly for) the rich
- FACT: Most “Rooftop” solar is in Middle and Low-Middle Income markets
 - This is true in California and it is true in Sacramento
 - This is true today, it was true in 2017, 2013, 2008 and even in the 1990s and before.

Residential Solar's new boom market? Not wealthy enclaves

[Barbara Grady](#), Tuesday, March 15, 2016

- In 2015:
 - 65% of residential solar getting installed in California was in zip codes with median household incomes of \$70,000 or less
 - Just 6% were in neighborhoods with median household incomes above \$100,000
- "Virtual net metering and community shared solar" are two very key policies that are driving the market to a wider audience ... Policies that widen the market also include financing mechanisms.

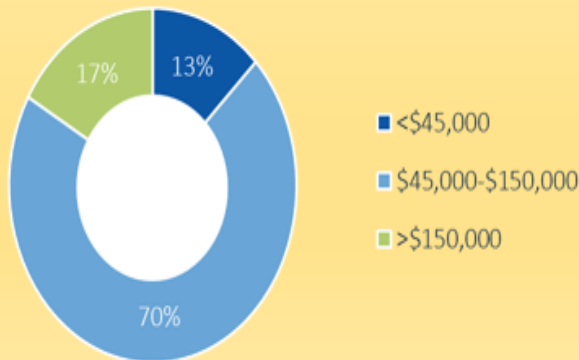
<https://www.greenbiz.com/article/residential-solars-new-boom-market-not-rich-enclaves>

How Wealthy Are Residential Solar Customers?

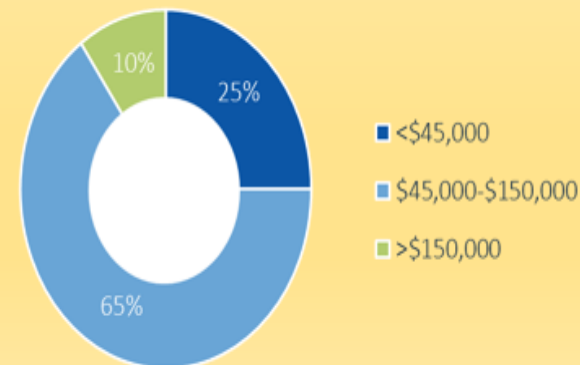
by Shayle Kann and Attila Toth April 19, 2017

- Rather than Zip Code level data, uses household-level data on the relationship between residential solar and household income
- Based on 521,000 solar installations in CA, MA, NJ, NY
- 70 percent of solar households are middle-income
- Based on the sample, 70 percent of solar households have annual income between \$45,000 and \$150,000, a range we deem “middle-income.” This represents a higher proportion than the overall population of those states, where 65 percent of all households fall into that range.

Solar Homes by Household income: CA, MA, NJ & NY

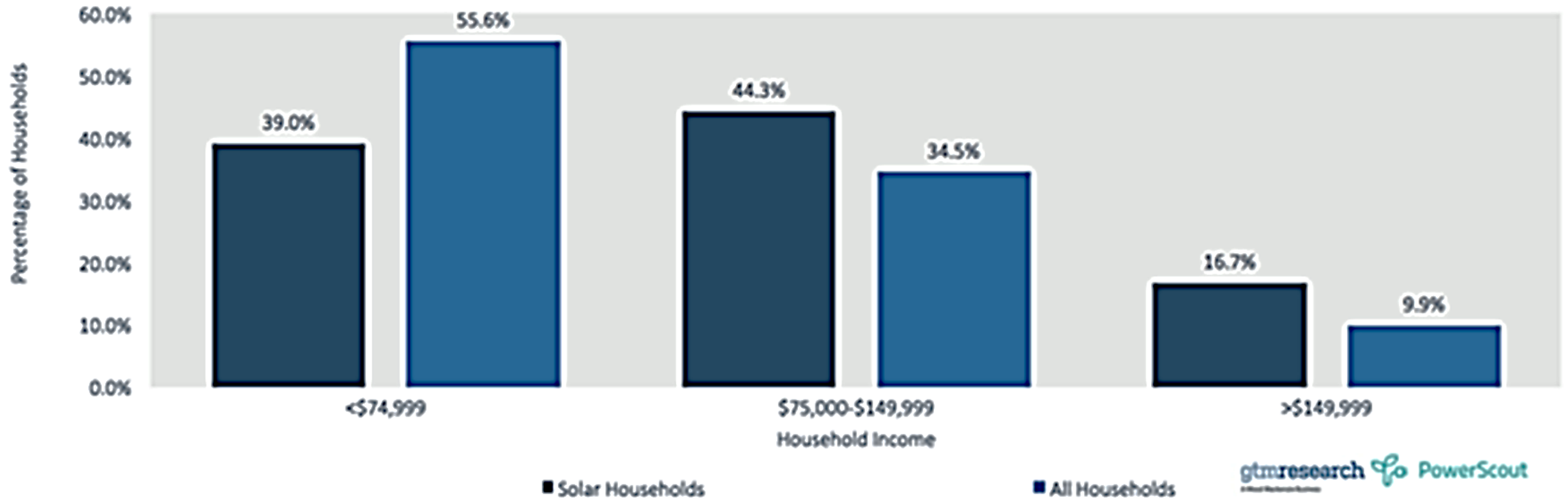


All Households by Household Income: CA, MA, NJ & NY



This is true in CA as well as elsewhere 2017 GTMResearch

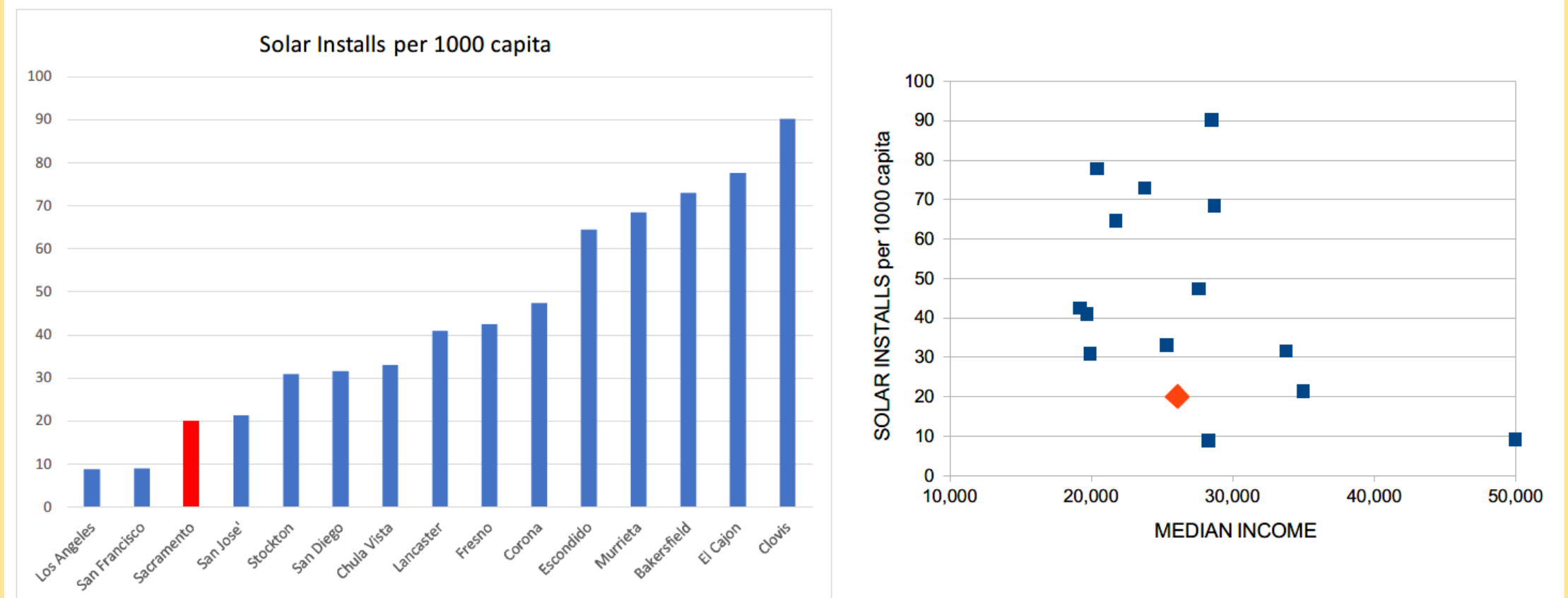
Overall Distribution of Solar Households vs. General Population in CA, MA, NJ and NY



Solar Adoption Spread Across CA

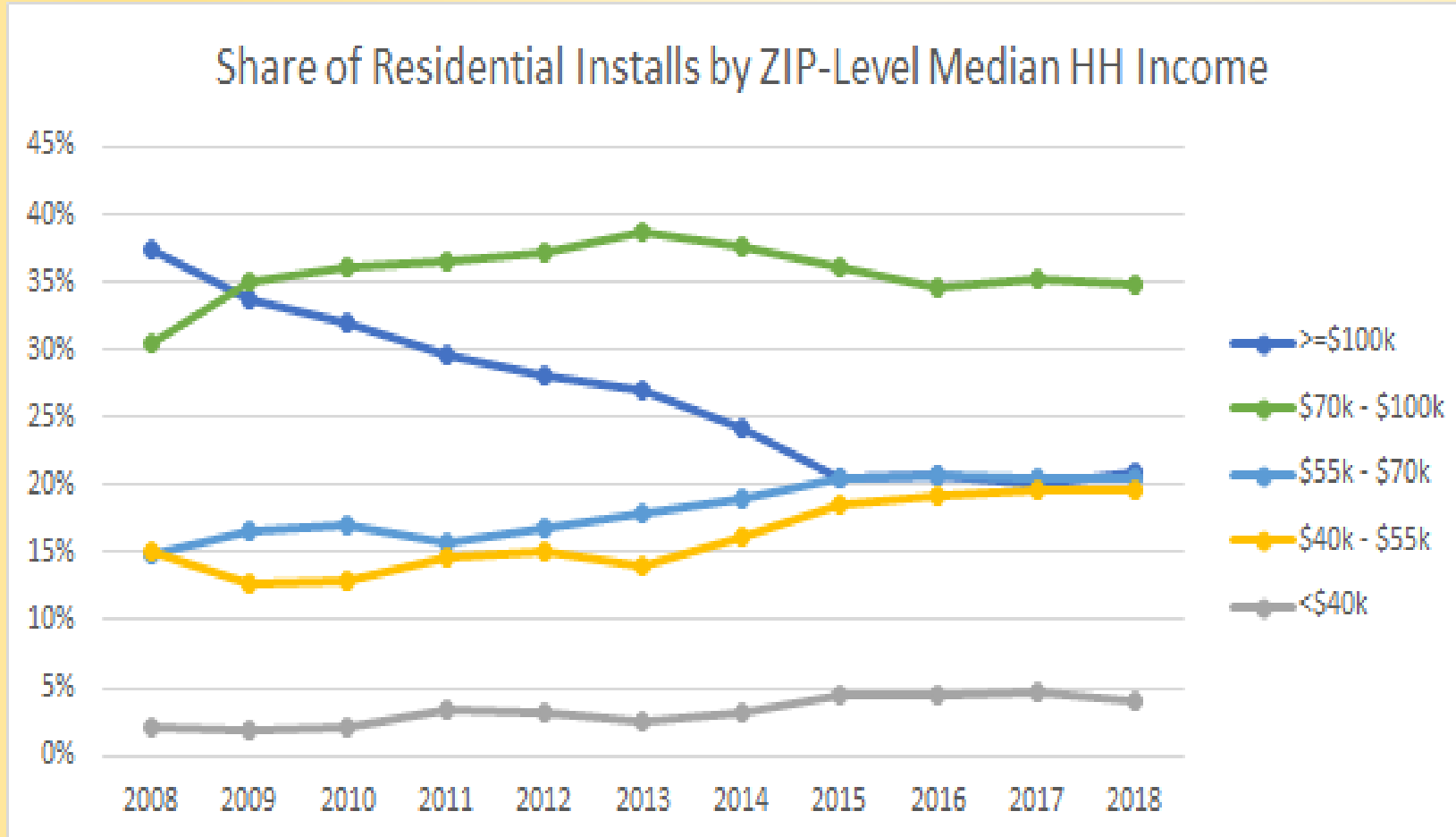
Sacramento falls far below less wealthy communities

2019



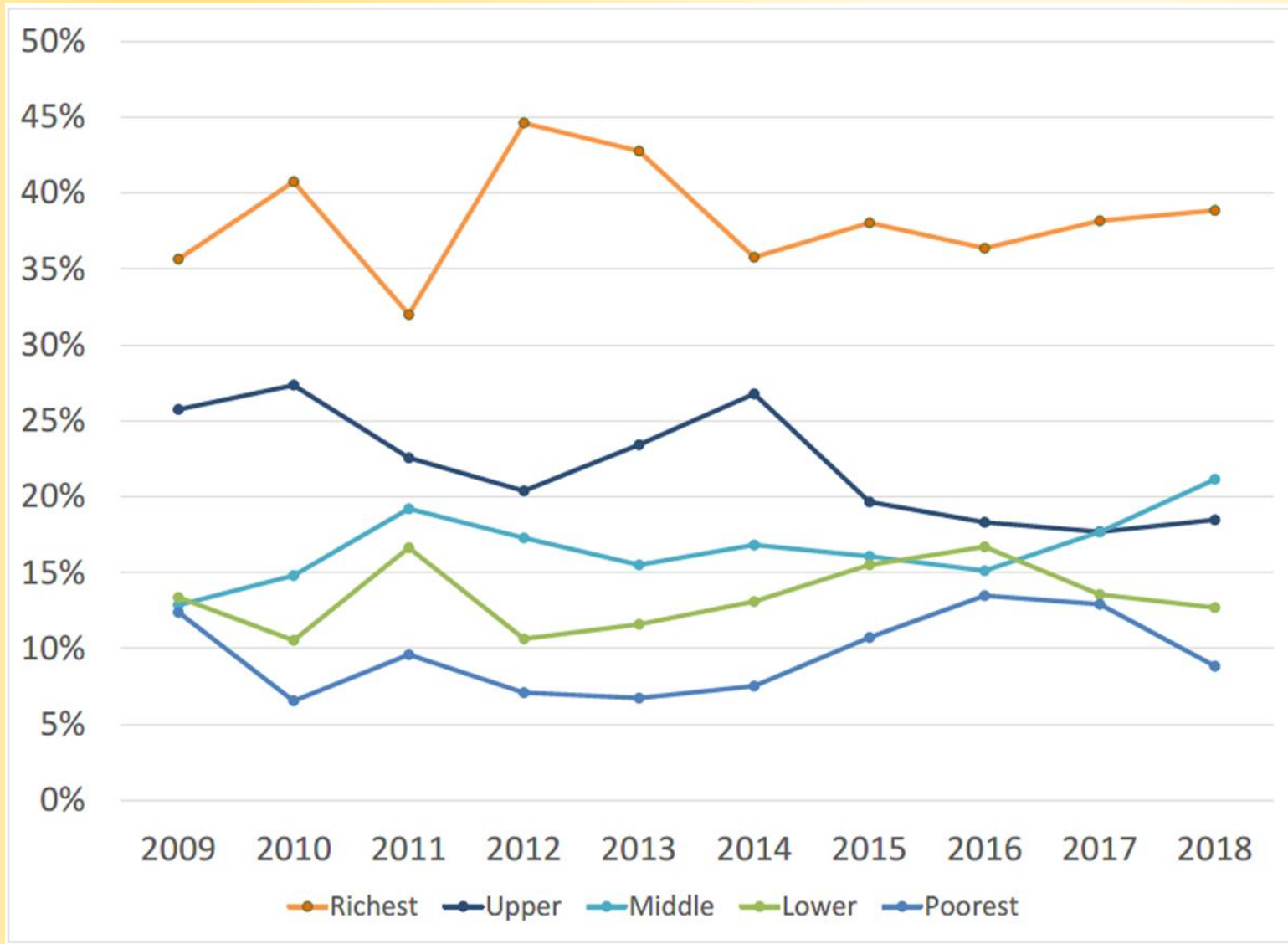
Based on the LA Times graphic: 2019 raw data from CalSSA and on Wikipedia (Based on US Census) data on population and on income: <https://www.latimes.com/environment/story/2019-12-12/california-clean-energy-milestone-1-million-solar-roofs>

Distribution of Solar Customers In CA



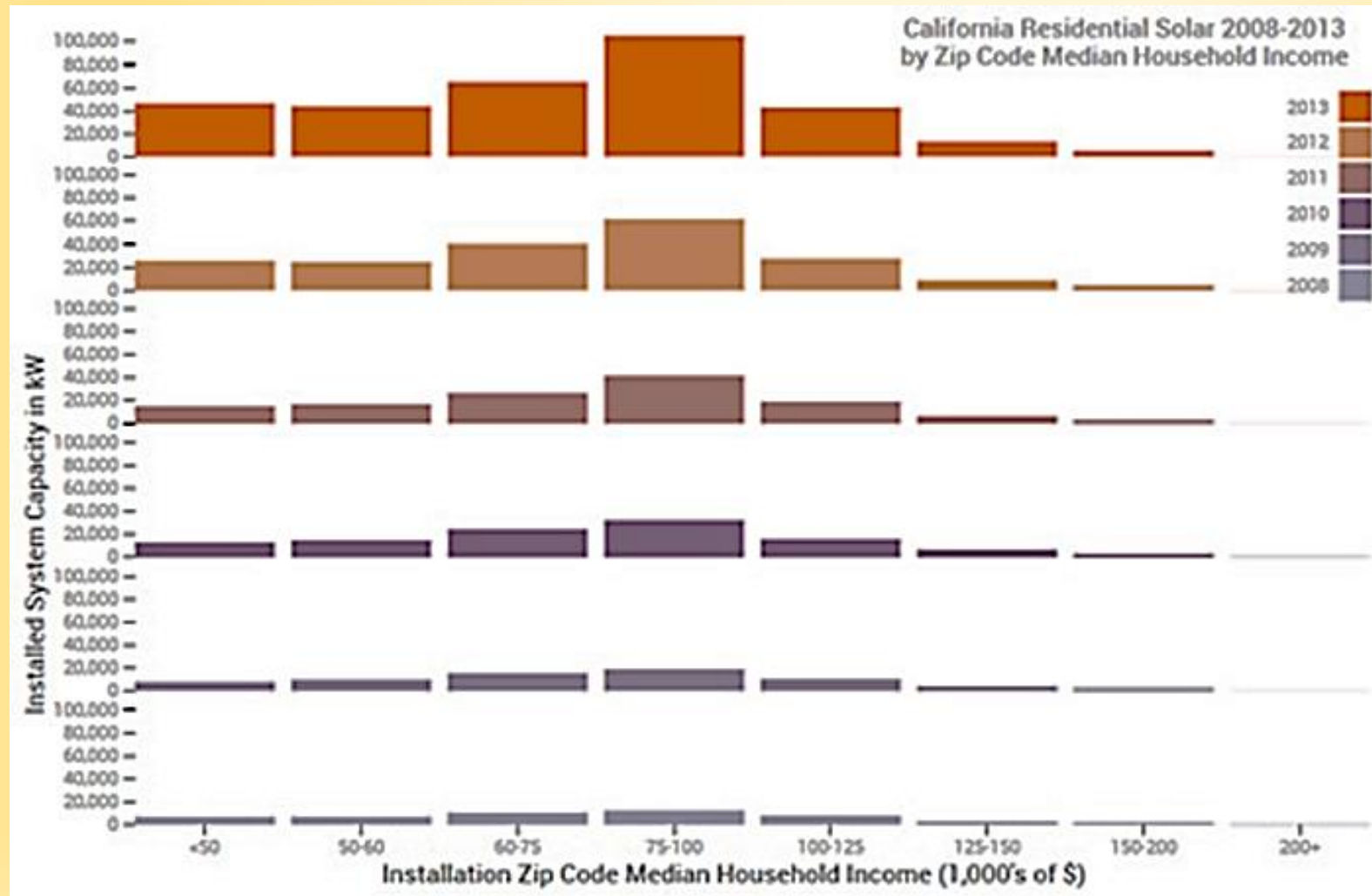
- While there IS more solar in top income zip codes than the poorest the vast majority is in the Upper, Middle and Lower income areas.
- In 2018 the “Wealthy” areas represented about 20% of solar installs, same as the “Lower Income” and “Middle Income” areas

Distribution of Solar Customers In SMUD



- In SMUD territory, there **IS** more solar in top income (39%) than other income brackets
- **HOWEVER** the majority is still in the Upper, Middle and Lower income levels (54% combined).
- Lower residential rates do make middle income bill savings less of a driver.
- Note that lack of VNEM in SMUD is a significant barrier to solar in affordable housing and other lower income multifamily housing.
- Even in SMUD's Territory, it is **CLEAR** that **solar is NOT just "primarily for the wealthy"**.

Solar Usage Actually Skews to Middle/Lower Middle Income



2008-2013

- The majority of solar was in zip codes where the median household income was at or below \$75,000, with only a relative handful in neighborhoods above \$125,000
- There were more installations in zip codes with a median income of less than \$50,000 than there were in zip codes with a median income above \$125,000!

Solar was NOT mainly for the wealthy even in the 1990s and before

- In the 1990s, SMUD's seminal PV Pioneer I & II Programs had very few "wealthy" participants but mainly had middle and lower-middle income families take part. SMUD PV Pioneers were the 1st 1000 of the California Million Solar Roofs.
- Before that, the fledgling home use of PVs took place in rural and low income areas Northern California like Ukiah and Chico areas (Back To The Land Movement)
- Again: **Distributed Solar is Broadly Distributed Across Income Levels**

Is there MORE to do to get Solar Benefits to the Poorest areas? YES!

- One recent study* shows a real gap between the very poorest and most wealthy communities
 - Solar adoption rates in disadvantaged communities being 8 times lower in the bottom 5% most disadvantage communities compared to the top 5% most wealthy.
- However, the lack of solar in disadvantaged communities is no different than the wealth gap for EVs, high-speed Internet, good schools, and a host of other desirable items.
- Programs like SASH, MASH, SGIP and SOMAH (supported by good VNEM policies) have been and are making great strides in getting solar benefits to Affordable Housing and Low Income customers.
- **Let's commit to do more. Solar Is For Everyone!**

* <https://www.psehealthyenergy.org/news/press-releases/californias-rooftop-solar-boom-leaves-equity-gap/> 11