

Seeing is believing: Your neighbor's choice to go solar might have influenced you more than you think

September 3 2024, by Kaveh Khalilpour and Alexey Voinov



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What made you decide to go solar? Was it a sober assessment of the return on investment? Did you want to cut your power bills? Did you want to do your bit on climate change?

While these reasons are common, another factor might be in play: your neighbors. The more solar panels you see around your neighborhood, the more likely you are to have them installed yourself. It's a form of social license—seeing solar near you legitimizes the idea. As more people in the same area install solar, it creates a ripple effect.

There is [ample research](#) showing humans are social animals and do care about what their peers are doing. In our [new research](#), we explored this neighborhood effect in the context of solar panel installations—and found we can quantify it. The effect leads to an extra 15–20 solar installations per postcode per year, on average. Scaled up, that means about 18% of new solar installs come from the neighborhood effect.

Now that we know this, authorities can use this technique to accelerate Australia's [world-leading uptake](#) of rooftop solar even further.

How do my neighbors affect what I do?

Two decades ago, solar panels were a rare sight on Australian rooftops. Now, around a third of all households [have them](#). Solar [now has](#) 36.5 gigawatts of capacity across Australia. Residential solar [contributes substantially](#) to this. More than half of our solar output is residential (52%), followed by 35% from [solar farms](#) and 12% from [commercial buildings](#), according to data from the [Australian PV Institute](#).

Australia's solar journey began in the early 2000s, when government subsidies and rebates were first offered. This made solar panels more appealing to homeowners. Over time, solar prices dropped rapidly, encouraging more households to take it up.

That's the big picture. But at a local scale, how did this happen?

We might like to think we make decisions logically and in isolation. But

we are more affected by other factors than we might think.

In our research, we set out to find what factors nudged people to take up solar over time. We took an enormous data set—rooftop solar installations between 2001 and 2022 across Australia's 2,641 postal areas (the geographic area roughly corresponding to postcodes) and looked for trends within and across postal areas.

Was it wealth—did high income households and suburbs put solar on faster? What about education levels or home ownership versus renters?

We found income and education mattered. But it mattered less than we had expected. Gender and land size played no significant role. Older households and married households were more likely to install solar. And we found areas with higher unemployment actually installed solar faster, perhaps as a way to reduce energy bills. Factors such as these influenced about 80% of individual decisions to go solar, we found.

What about the remaining 20%? Here, what mattered was the presence of other [solar panels](#). That is, once a few houses in a neighborhood had solar, solar got installed faster—translating on average to 15–20 extra solar installations per postal area per year.

That's substantial. In 2018, for example, we estimate the neighborhood effect contributed an estimated 18% of that year's total number of installations (224,850 installations). Each postal area added an average of 85 new solar installations in 2018.

Why would this be? Let's say an early adopter decided to go solar back when the technology was substantially more expensive. Once they had solar installed, people in their neighborhood passing by could see the array on their roof. Solar became tangible and visible.

Over time, the simple presence of solar nudged a few neighbors to consider whether solar would stack up for them. Some chose to go solar too, and the effect continues.

Neighborhood effects are not new. But they're of increasing interest as Australia works towards net zero. Neighborhood effects [are being seen](#) in the uptake of electric vehicles—if you see them round your neighborhood, you're more likely to buy one.

What should we take from this?

The neighborhood effect is real, and quite influential. For policymakers and industry stakeholders, the question will be how to use it. Our [public tool](#) lets policymakers and residents look at how specific areas have taken up solar and at what rate.

In Tasmania's cooler climate, for example, solar uptake is much lower than elsewhere. To encourage more rooftop solar, authorities could support early adopters to share their experiences. Targeted campaigns in specific suburbs could help accelerate the renewable transition.

While we normally think of Australia's embrace of solar as an economic choice, it's more than that—it's also about the choices of our neighbors and being able to see the technology with our own eyes.

We do care what our peers are doing. This is nothing to be ashamed of. As we work to secure a livable climate, the neighborhood effect can play an important role.

More information: Paul Marty Jordan Fuentes et al, Solar energy surge: The socio-economic determinants of the photovoltaic systems growth in Australia, *Energy Research & Social Science* (2024). [DOI: 10.1016/j.erss.2024.103695](https://doi.org/10.1016/j.erss.2024.103695)

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