Neighbors can influence your decision to buy solar panels, study shows

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An EPFL study carried out in Vaud Canton has shed light on the factors that can prompt people to buy solar panels. It found that having neighbors with solar panels plays a significant role, alongside more well-known influences, such as our social circle.

If you're a homeowner, have a high-level job, and have friends or family

members with solar panels, chances are that you've got them, too. The EPFL study found that the probability of an individual installing solar panels is 89% higher if that person knows someone who has already done so. This peer effect, also called social proximity, is already known to have an influence on consumers' purchasing decisions. But the study found that another factor also plays a major role: the neighborhood effect, also known as spatial proximity.

This means that if, in addition to the factors above, you also have a neighbor who has installed solar panels on their roof, you probably did too, (with a dependent variable which increases in a statistically significant way by 0.5 units), especially if you speak the same language and live within the same municipality, since that facilities information-sharing between you and your neighbor.

On the other hand, the study found that factors such as gender and stated environmental viewpoints don't have a significant influence. The research, published recently in *Heliyon*, was carried out through a survey of 1,125 people living in the Nyon and Jura-Nord Vaudois districts of Vaud.

Spatial and social proximity

The study's authors note that the circulation of information within a community can be an important driver of the energy transition, and that spatial proximity should be considered alongside social proximity. They go on to spell out concrete measures that policymakers can take, such as sponsoring local information campaigns run by neighborhood associations, businesses operating in the energy transition and people who already own solar panels.

"Solar-panel owners enjoy talking about their experience—describing how much power the panels generate per year and how much money

they save," says Glòria Serra-Coch, an architect and Ph.D. student at EPFL's Laboratory for Human Environment Relations in Urban Systems (HERUS) and the study's lead author. For her Ph.D. thesis, Serra-Coch is investigating the mechanisms by which renewable-energy technology is adopted in Switzerland.

The survey asked questions to determine respondents' socioeconomic category, as well as questions about whether they have installed solar panels, whether they are homeowners or tenants, whether they know someone who has installed solar panels and, if so, where this person lives and if this person had suggested they buy solar panels too. The results showed that 17.6% of respondents owned solar panels, and 40.4% of these individuals knew someone else who had them.

Solar panels aren't just for the roof

The study also found that solar-panel installation was correlated with housing density and the extent of urbanization. In other words, most of the solar panels in the region covered by the study were found in urban areas. "Swiss legislation currently encourages solar-panel installation on the rooftops of single-family homes," says Serra-Coch. "As a result, only urban areas with a high degree of home ownership can take full advantage of this renewable energy."

She suggests introducing more flexible policies so that people who want to use clean power can do so, removing the obstacles for tenants and those living in buildings that don't meet the requisite criteria. Solar panels don't have to be installed on rooftops, for example: if they could be put elsewhere, that would encourage wider adoption.

"Our study shows that renewable energy should be promoted through trusted individuals who form part of a close circle—including a close circle geographically," says Serra-Coch. She feels that creating networks

of people who are actively involved in energy issues can be a good way to encourage citizens to adopt new habits. These networks would probably be effective in other sustainability-related areas too, according to the authors.

More information: Gloria Serra-Coch et al, Geographic network effects to engage people in the energy transition: The case of PV in Switzerland, *Heliyon* (2023). DOI: 10.1016/j.heliyon.2023.e17800

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