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Consumers as Producers

When homeowners supply more energy than they need, they want to be paid for it. Not so fast, critics say.

By Yuliya Chernova

WHEN JOHN MAZZANI installed a solar-power system at his home in Hamptonburgh, N.Y., in April 2007, his goal was to cover all of his yearly electricity needs. But his 10-kilowatt system did more, and the surplus power it sent to the electricity grid over the course of a year netted him a payment of \$300 from the local utility.

If Mr. Mazzani lived in another state, however, that excess generation might have earned him much more, or perhaps nothing at all.

The reason? While most people agree that financial incentives are needed to spur more solar development in the U.S., some lawmakers, regulators and utilities are at odds over whether homeowners should be reimbursed for sending more power to the grid than they buy over the course of a year.

Supporters call such payments a perk that spurs solar installations, encourages energy efficiency and helps relieve demand on the electricity grid at peak usage times. They also consider it simply the right of homeowners to get paid for the power they produce. But on the other side, some utilities and other critics argue that homeowners who already have received government- and ratepayer-funded subsidies to install solar panels shouldn't turn around and benefit even more. In addition, they say, residential solar generators aren't subjected to the same fees as independent wholesale power producers.

"Make no mistake, this comes down to money," says Molly Sterkel, manager of the solar program for the California Public Utilities Commission. "If people get paid for extra generation, they will start installing larger systems than they need."

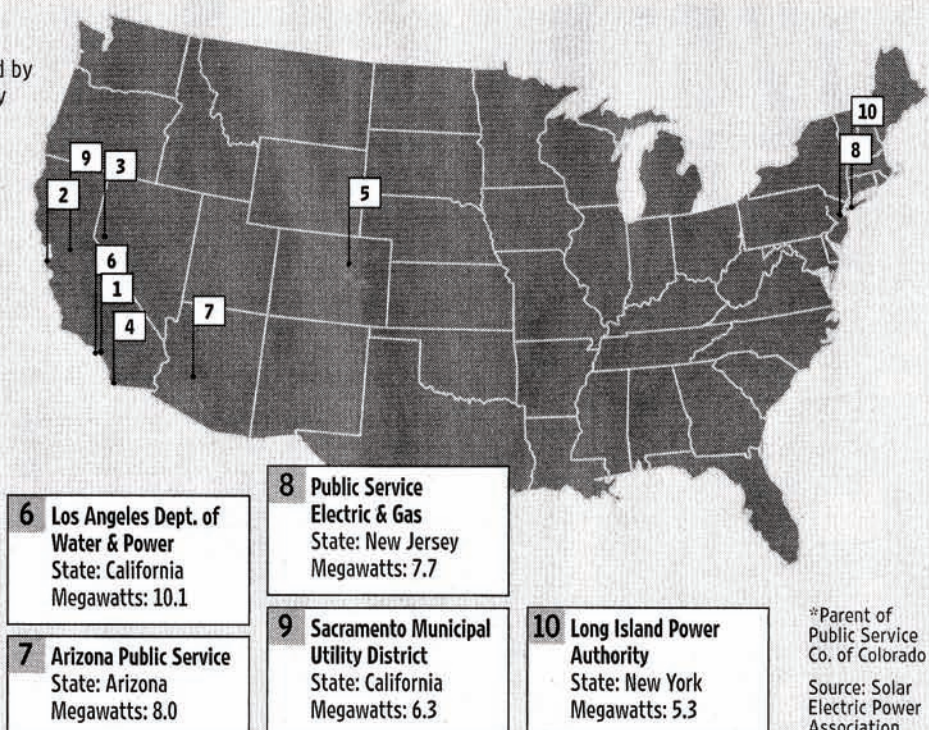
The split over the issue has resulted in a patchwork of policies that vary, not just from state to state, but also from utility to utility. Some in the industry say the lack of a uniform approach stems from the Federal Energy Regulation Commission's decision that this is a billing issue, not a power-generation issue, and thus

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Sun Power

Top 10 U.S. utilities ranked by total solar electric capacity

- 1 Southern California Edison**
State: California
Megawatts: 409
- 2 Pacific Gas & Electric**
State: California
Megawatts: 144.5
- 3 Nevada Power/Sierra Pacific Power**
State: Nevada
Megawatts: 80.9
- 4 San Diego Gas & Electric**
State: California
Megawatts: 26.7
- 5 Xcel Energy***
State: Colorado
Megawatts: 12.6



should be governed by states.

Net Metering

The majority of residential and small business solar-system owners connect to the electricity grid through a system called net metering. Under net metering, customers can effectively bank at least a portion of the electricity they generate during the day, when the sun is shining, and use it as credit toward the power they need to purchase at night or on cloudy days, when their solar systems aren't functioning.

Net metering is available in 41 states and the District of Columbia, according to Vote Solar, a nonprofit that works to develop policies in support of solar energy across the U.S. But the rules regarding how many credits a homeowner can collect, how much those credits are worth and whether customers should be reimbursed for unused credits after a certain time period vary significantly across the U.S.

Roughly 19 states, including California, don't force utilities to reimburse solar customers for exporting more power to the grid than they purchase, according to October figures from the nonprofit Interstate Renewable Energy

Council. That means that while customers in these states are awarded solar credits and can use them to reduce the size of their electricity bills, they aren't guaranteed a cash payment if, at the end of the year, they have generated more power than they consumed. About 10 states, including New Jersey and New York, require regulated utilities to pay customers for surplus generation, usually at a wholesale rate. Other states either have no rules about excess generation, meaning they leave it up to the utilities, or approach it in other ways, such as allowing customers to roll over solar credits indefinitely, or, in the case of Rhode Island, donating solar credits to funds that sponsor renewable energy use in low-income housing developments.

"People who spend a lot of money to put solar on site have a problem when they're just giving energy to utilities for free," says Kevin Fox, an attorney with Keyes & Fox LLP, a Seattle-based law firm that specializes in distributed-generation law. "That's why [some states turn] the excess generation into a donation to a good cause. That's a lot easier for people to stomach."

Pacific Gas & Electric Co., a utility

serving northern and central California, doesn't reimburse customers for sending more power to the grid than they buy annually because it doesn't want "to encourage people to become energy producers," says Charles Hornbrook, senior manager of solar and customer generation for the San Francisco utility.

Not only do Californians get a rebate subsidized by the general pool of ratepayers per each watt of solar installed, he says, but the power they send to the grid is credited on their bills at retail rates, even though they don't maintain or own any of the transmission technology. In addition, participants in the California net-metering program are waived the interconnection charge, something that independent wholesale power producers must pay.

In a study of its solar customers conducted in March, PG&E says it found that 22% of them have credits on their bills even though just 7% of them are actually producing more power than they consume. That's because they send power to the grid during the day, when rates are high, and use power at night, when rates generally are lower.

"Retail net metering is a pretty fair deal for customers who've chosen to go

solar," says Mr. Hornbrook.

Sacramento Municipal Utility District Co., a utility that isn't regulated by the California Public Utilities Commission and therefore sets its own rules, takes a different approach, buying surplus power from residential solar generators at a retail rate. The utility, which serves California's state capital, cites a variety of reasons for doing so, saying home solar systems produce power when demand for electricity is peaking, improving the performance and reliance of the grid, and that the utility can use the solar generation it purchases to help meet renewable-energy mandates.

"We see advantages to generating electricity near where the load is, so you don't have the losses associated with bringing power far," says Michael DeAngelis, manager of the alternative energy and distributed generation technology program at the municipal utility.

Spiting the Utility

Jared Huffman, a California assemblyman, is pushing a bill in the state legislature that would require utilities governed by the California Public Utilities Commission to pay for customers' surplus generation at a rate to be determined by regulators. He introduced the bill in February, but it wasn't voted on, so he plans to reintroduce it next year, he says.

If people end up with a surplus and don't get paid for it, "it discourages energy efficiency," says Mr. Huffman, explaining why he backs payments for excess solar generation. "Some people will put in Christmas lights and increase their electrical use just to spite the utility," he says.

Some California utilities and regulators complained that Mr. Huffman's bill would encourage homeowners to install power-plant-size solar systems in their backyards. To address those concerns, Mr. Huffman added an amendment to his proposal that caps the size of a solar system eligible for net metering.

It is too early to say which states, public utility commissions and individual utilities are getting it right when it comes to the issue of excess generation, says Mr. Fox, the lawyer who handles power-generation issues.

"It's hard for me to look at what Arizona is doing and what California is doing and say that one is better than the other. We need to wait a few years and see who installed the most solar at the lowest cost," he says.

For his part, Mr. Mazzani is planning to increase his electricity usage because the payment he received for his excess generation wasn't enough to significantly speed the return on his solar investment.

"I just bought an electric hot water heater and am pulling out my oil-fired one," says Mr. Mazzani. "I'll use that excess capacity of the solar system, so I get more bang for the buck than by receiving money back from the utility." ■