



## Companies give folks solar, help to go green

*Some firms will foot most of the upfront bill, then charge for the power*

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by Paul Davidson*

For years, Bruce Crawford dreamed of putting solar panels on his one-story house to cut his power bill and “do something good for the environment.” But he couldn’t see past some dark clouds — the \$20,000 to \$30,000 purchase price.

“I wanted to do it, but I was choking on what I had to” spend, says the software engineer who lives in Pleasanton, Calif.

Then, a Silicon Valley start-up called Sun Run offered Crawford a way to go green without straining his wallet. Last month, the company installed a 3.8-kilowatt system on his pitched roof for \$6,000. Crawford, 62, says he’ll immediately save money on his electric bill. Sun Run monitors and maintains the system, replacing worn parts at no extra cost.

It’s one of several companies upending solar’s traditional business model by supplying systems to homes and businesses at minimal or no cost, owning and maintaining them, and charging customers for the power they use — much like a utility. Yet unlike a utility, these firms typically charge a bit less than standard electric rates.

The setups, called power purchase agreements (PPA), are among several initiatives that aim to overcome solar’s obstacles — high upfront costs and design and maintenance hassles — and deliver systems to millions of customers. Several California cities plan to fund home systems with tax-free bonds. Now, utilities are joining in. Southern California Edison on Thursday said it will install panels on about 100 warehouses, running them as it would a power plant. Duke Energy wants to put solar panels on up to 300,000 customer rooftops in the Carolinas. “Increasingly, individuals won’t have to” buy systems, says Ron Pernick of research firm Clean Edge.

Solar energy emits no global-warming gases, and provides power midday, when demand and electric prices are high. While U.S. solar power has grown at least 45% each of the past two years, it makes up less than 1% of U.S. power generation, largely because of its cost.

### **How the movement is spreading**

Solar-panel prices are projected to drop 50% in a few years. Yet achieving widespread adoption will likely require big buyers that can achieve cost efficiencies, says Travis Bradford, president of research group Prometheus Institute. Among the new models:

- Power-purchase agreements. Under these typically 20-year contracts, businesses pay no money upfront. With such favorable terms, PPAs have exploded among companies and government users.

Normally, a big store or factory could spend up to \$4 million on a solar system after government incentives. MMA Renewable Ventures, a top PPA provider, shaves system prices 25% by snaring high-volume discounts and low interest rates to finance the panels, CEO Matt Cheney says.

To be sure, a business or homeowner could finance a system with a small down payment and monthly payments at or below utility prices. But PPAs offer other



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advantages. Providers tailor systems to a customer's needs. They navigate a financial maze that includes securing government rebates and tax breaks and figuring depreciation. And they handle upkeep. Without a PPA, an inverter — which converts DC current to AC — must be replaced every 10 years or so and costs thousands of dollars.

Customers, meanwhile, have the option to buy the systems at a reduced price after a few years.

To help meet its goal of using 100% renewable energy, Wal-Mart last year signed a deal with SunEdison to install solar systems on 21 Wal-Mart stores and Sam's Clubs in California and Hawaii. By choosing a PPA, Wal-Mart avoided plunking down tens of millions of dollars for panels and having to oversee them. The systems will supply up to 30% of its power at a "modest" discount to standard rates, says David Ozment, Wal-Mart head of regulated utilities.

Owning and maintaining solar panels "is not our core business," says Ozment, adding the PPA also let the chain add solar more quickly.

Staples is using a PPA to buy solar power for 13 stores and other buildings in California, Oregon and Connecticut and may add 150 more sites. With power rates rising rapidly, "This provides us price certainty," says Mark Buckley, Staples head of environmental affairs.

### **To fee, or not to fee ...**

Unlike businesses, homeowners, at least for now, must pay an initial fee of a few thousand dollars or more for their panels because the smaller systems cost more per kilowatt, says Nat Kremer, president of Sun Run, which launched last year. Still, if power prices rise an expected 5.5% a year, Crawford says he'll recoup his \$6,000 investment in 10 years, roughly the same payback period as if he'd bought the system.

Of course, buyers then get free electricity. But for some, that payoff isn't worth the upfront cost and hassle. Francoise Bourzat, 51, of Woodside, Calif., considered spending \$30,000 for solar panels on her roof but wouldn't have seen a return for many years. Instead she put down \$8,000 for a Sun Run system, leaving her \$20,000 to splurge on a new sun deck and hot tub. "Now, we're paying less for (power) and we have a hot tub," she says.

Another start-up, Citizenre, aims to sell solar power to homeowners without any initial fees as early as 2009 by making the panels itself to cut costs, says Citizenre's Erika Morgan. Pernick of Clean Edge is wary, saying, "That's a tall task."

- **Cities.** Several California cities plan to sell bonds to finance solar systems for residents.

Berkeley Mayor Tom Bates says the city can get discounts for buying systems in bulk and secure a bond with rates much lower than a resident could obtain through a home-equity loan. An average homeowner who opts into the program would own

the system without spending a dime. Finance payments would be \$139 a month higher for 20 years — at or below power-bill charges — and rolled into property tax bills. Paul Fenn, of consulting firm Local Power, says he's discussing similar efforts with cities in Ohio and Massachusetts.

- Utilities. Solar power can help utilities such as Edison and Duke meet state renewable energy mandates. While solar power systems are about 30% more expensive than nuclear plants, Duke can pare costs by buying systems in large volumes.

What's more, placing units at thousands of homes and businesses lets the utility avoid expensive substation upgrades and insulates customers from outages. Duke Chief Technology Officer David Mohler says batteries would store solar energy that could be tapped when wholesale power prices spike on hot summer days. Customers likely would get a discount on their electric bill in return for turning their rooftops into mini-power plants.

Yet Duke must persuade state regulators to let it deploy power that's more expensive with the aim of eventually cutting prices — no easy task. Duke plans to file a request with regulators this year.

As more homes and businesses go solar, experts say utilities will take a more active role. Otherwise, they "risk losing their relationships with customers," Bradford says.