

Got a deck? Solar panels now a plug-in appliance

A do-it-yourself kit for installing a handful of solar panels lets people dip their toes into grid-tied solar power.



by [Martin LaMonica](#) May 12, 2012 12:00 AM PDT



Power deck: plug-in solar panel appliances being tested.
(Credit: Screen capture by Martin LaMonica/CNET)

It's a green-energy geek's dream do-it-yourself project: attach a few solar panels to your deck and watch your electric bills go down. Now one company is selling such a product.

[SpinRay Energy](#) has developed a system that lets consumers install up to five solar panels on their decks and plug them into an outdoor power outlet. People can install one panel at a time, and get up to 1,000 watts of power with five installed.

The main electrical components of the system have the UL safety certification, including the solar panel and the microinverter, which converts direct current from the panels to household alternating current. If there is a loss of grid power, the panels will stop delivering current because it could be a danger to line workers, according to the company.

SpinRay Energy is selling the DIY kit through a few retailers, including Amazon. There are just a few reviews, but people who installed the panels say they work as advertised. The deck kit, sold for \$1,099.95 on Amazon, comes with brackets that attach to a deck or for setting up panels in a yard. The panels should qualify users for a 30 percent federal tax credit for renewable energy.

The idea of making a solar panel "appliance" that a person could install without an electrician has been pursued for years. But there is reason for caution, say solar industry professionals. A representative from the renewable energy retail company AltE Store voiced some concerns when I described the product, starting with safety and UL certification. When I said the product has UL certification, he noted that many solar companies have come and gone, so he questioned the warranty.

He added that professional installers not only ensure safety but also help consumers pick good locations for solar panels.

The president of SpinRay Energy, Arthur Chew, said he has had five panels installed on his deck for months without incident. He brought building inspectors to look at the installation, but since it is a plug-in device, it's considered an appliance and doesn't need special permits.

As for skepticism from solar industry pros, he noted the panels use relatively new technology in the microinverter and people in the industry may be opposed to DIY solar because it cuts professionals, such as installers and electricians, out of the picture.

"Our plug-and-play systems are not a replacement for a rooftop solar system. They should be considered a stepping stone for those interested in being green and to learn the benefits of solar," Chew told me. He noted the warranties for the panel and microinverter, which are made by other companies, are in line with the sort of warranties offered by other commercial companies.

Piecemeal solar panels (photos)

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It's worth noting that previous companies have failed to deliver on their promises of consumer-installed solar panels.

Two years ago, Clarian Technologies generated a lot of media interest when it said it would have a \$800 plug-in solar panel kit within about one year.

But a year after it promised to deliver its product, neither the company nor its CEO has responded to multiple e-mails from me regarding its status.

Mighty microinverter

The key technology to the plug-and-play approach is the microinverter.

The direct current generated by solar panels needs to be converted into household alternating current with an inverter. Historically, inverters have been large machines, about the size of a desktop PC, that convert DC to AC for several solar panels.

Microinverters are about the size of a smartphone and are placed directly under the panels so that each one outputs alternating current. In the past few years, this technology has become more efficient, reliable, and commonplace, used in residential and commercial settings.

When SpinRay Energy's panels are generating, they power appliances or electronics in the home, effectively slowing the household meter. The plugs to connect the panels into an outdoor outlet have coverings to protect them from water.

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Consumers who don't want to go the self-install route can also add solar panels incrementally, which is made easier with the microinverters. Roofers or solar installers can install the panels on the roof, and electricians can do the connection to a home circuit box.

While small-scale systems are appealing to people who want to give solar a try, dramatic changes on the business end of the solar industry allow people in some states to get solar rooftop systems for no cost.

Solar installation companies now offer leases or power purchase agreements where homeowners pay a monthly fee or buy the energy the panels produce at lower than retail electricity cost.

This [financing](#), aided by a flood of cheap Chinese panels, is [driving residential solar](#), particularly in states with high electricity rates.

As noted, solar industry professionals have long voiced caution at the idea of consumer-installed, grid-tied solar panels. But if there's one thing that SpinRay Energy has shown, it's that the technology for piecemeal solar is readily available.