

SolarCity to back up solar with Tesla batteries

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In this Friday, April 29, 2011, file photo, solar panels line the roof of Ikea's Brooklyn store, in New York. The solar panel installer SolarCity said in December 2013 that it is starting to offer battery packs made by electric car maker Tesla Motors, whose CEO is also the chairman of SolarCity. The battery packs will allow customers a way to provide backup power and lower electric bills. (AP Photo/Mark Lennihan, File)

The solar panel installer SolarCity is beginning to address one of solar power's big drawbacks: The sun doesn't always shine.

The solution: big [battery packs](#) that will provide backup power while lowering electric bills. The supplier: electric car maker Tesla Motors, whose CEO Elon Musk is also the chairman of SolarCity.

"Our goal is to be an energy provider, to provide all energy services," said SolarCity CEO Lyndon Rive.

The batteries will be offered first to commercial customers because of the way many commercial [electric bills](#) are calculated. SolarCity is also conducting a pilot program in California for homeowners, but because residential bills are calculated differently—and the batteries are so expensive—it could be years before batteries make financial sense for homes.

"We know this is a long-term problem, so we are investing in it now," Rive said.

SolarCity shares rose \$2.83, or 5.4 percent, to \$55 in trading before the opening bell.

For power-hungry businesses [battery](#) backup can make financial sense even now. Many businesses are charged not just for the amount of electricity they use over a certain period, but also for the level of electricity they need from the grid at any one time. Think of a car owner paying for gasoline to run the engine, but also for the amount of horsepower needed when the car is loaded with people and climbing a steep hill.

Often, those horsepower charges, known in the electric industry as "demand charges" ratchet up quickly.

SolarCity's solar panels can lower those demand peaks when the sun is shining. SolarCity's battery packs will make sure those peaks stay low

when the sun is not shining or the customer needs a little extra juice. The company says the battery systems will lower demand charges by 20 percent.

A secondary benefit: If power goes out, the battery will be able to run critical systems for several hours—or for several days if it is sunny enough for the battery to recharge with solar electricity during the day.

For traditional electric utilities already struggling with weak electricity sales, this represents yet another threat. Efficiency programs and more advanced appliances are already helping customers lower their energy use, and solar panels and other power sources are helping customers generate their own power. Now commercial customers may have a way to reduce demand charges, too.

Other companies offer similar programs to businesses, whether they have solar or not, like Stem, based in Millbrae, California. The company this week announced an investment from General Electric and the Spanish renewable energy company Iberdrola.

The batteries offered by SolarCity are the same lithium-ion ones that power Tesla's electric vehicles, reconfigured for stationary use. SolarCity's chairman is Elon Musk, founder and CEO of Tesla Motors. Musk is a cousin of the founders of SolarCity, CEO Lyndon Rive and chief technology officer Peter Rive.

Two Tesla vehicles have caught fire in recent weeks after road debris punctured battery packs. The Tesla batteries for solar backup will be enclosed in steel cases—and they won't be traveling down littered highways at 65 miles per hour. "The battery is extremely safe," Rive said.

The battery systems are also extremely expensive. SolarCity won't say

exactly how expensive, but industry insiders put the cost at near \$1,000 per kilowatt-hour, which would make typical commercial system well over \$100,000.

SolarCity won't charge customers for the battery, but will instead offer it as a service for a monthly fee. They will be offered first in markets with high demand charges, such as parts of California, Massachusetts and Connecticut.

A home battery pack would cost in the range of \$25,000—about as much as the solar panel system itself. And because homeowners don't pay demand charges there isn't an economic way—yet—for the battery to recoup that cost. That could change if battery prices fall sharply, but they have remained stubbornly high despite years of research and development.

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