Florida man bought Tesla storage batteries for his solar system, pays almost nothing to FPL

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Fred Closter doesn't like Florida Power & Light.

When the Boynton Beach retiree spent $24,000 to install solar panels on the roof of his Boynton Beach home a year ago, he decided not to rely on the utility to power his home when the panels weren't generating electricity at night and when it rains.

So he dropped another $16,000 on two large lithium ion batteries made by Tesla that can power the home for up to a day and a half if his panels aren't producing. If a hurricane or other severe storm with the potential to create power outages approaches, the Closters' solar provider, SunPower, will remotely direct the system to charge their batteries so their power won't be interrupted.

But as FPL pursues changes in state law that would let them hike fees on solar owners who use none of their electricity, Closter will likely never realize his dream of fully escaping FPL's grasp.

His setup is undeniably impressive: Mounted atop the Closters' clay tile roof is an 18-panel photovoltaic solar system that captures sunlight and sends it through an inverter that converts the direct current generated by the panels into alternating current used to power the house.

From the inverter, it flows both into the house and into the storage batteries, or back to the grid for distribution to other FPL customers.

A wifi-enabled monitoring device connects to an app on Closter's phone that let's him see how much power is being generated, make necessary adjustments, and control the house's heating and air conditioning system whether or not the couple is home.

The batteries put the couple on the cutting edge of a growing but expensive trend that only a fraction of solar adoptees can afford to follow.

Why they did it

Closter, who moved into the house seven years ago after retiring from a career selling residential and commercial pump systems on Long Island, New York, said he bought the system for three reasons:

One, he wants to do his part to help wean the planet off of fossil fuels. "My daughter and grandchildren live in Alaska," he says. "That state is losing permafrost and glaciers like crazy."

Two, he doesn't like FPL's involvement in state politics, its need to generate profits for its investor-owners, and the fact that it charges its customers extra fees for services like surge protectors.

And three, "I have an ego. I like to be the first one on the block to have something to talk about at the pool."

The batteries enable Closter and his wife to live almost independently of FPL's power grid because they buy virtually no power from the utility. They spend just $10 a month on average to stay connected. That's a drastic reduction from the $90 or $100 they paid each month before installing the system.

A 26% federal tax credit for solar systems and storage batteries helped reduce the $40,000 upfront cost by $10,400. Closter, 80, says he doesn't expect to live for the 20 years he figures he would need to recoup his $29,600 net investment.

Utility costs could rise, even with batteries

But that sweet $10-a-month charge won't be lasting much longer.

Beginning in June, all FPL customers will be billed a minimum of $25 a month if the retail cost of the kilowatt hours they consume does not exceed that price. The minimum bill will apply to solar users like the Closters who buy none or very little power in any given month, as well as to seasonal residents who shut down their homes for any amount of time during the year.

But that's not the biggest cost driver facing the Closters and thousands of fellow rooftop solar owners. They all face increased fees if a net metering reform bill that FPL helped write is enacted by the Florida Legislature and Gov. Ron DeSantis this year.

The bill would enable the state Public Service Commission to reduce the value of credits that solar system owners, with or without batteries, receive for excess energy sent back to the grid, and to increase fixed costs imposed on rooftop solar customers like the Closters, regardless of how much energy they get from FPL.

The utility asserts that its 37,700 rooftop solar customers aren't paying their fair share of costs required to maintain FPL's overall electric grid. Because a 2008 law requires FPL to buy excess electricity generated by solar customers at its full retail rate, those customers avoid about $90 a month in costs—or $30 million a year—that its 4.5 million non-solar users are forced to cover, the utility says.

As more households adopt rooftop solar, FPL projects that the cost shift will increase to $80 million by 2025 "and rapidly grow from there."

Senate and House versions of the bill include compromises intended to ease existing solar customers' transitions to lower buyback rates and higher fixed charges. The Senate version would retain the current net metering rate design for anyone who installs a rooftop solar system until Jan. 1 of next year, as well as households with existing solar systems.

Whether that grandfather clause would apply to fixed-rate charges is not spelled out in the bill. FPL spokesman Christopher McGrath said in an interview that if the reforms are enacted, pricing and billing changes must be approved by the Public Service Commission.

With batteries, net metering is 'peanuts'

Even if net metering rates are not grandfathered in for existing solar system owners, Closter's decision to purchase batteries to store his excess electricity shields him from effects of any reduction in buyback rates. That's because his buyback rates are already so low, they're barely noticeable to him.

Since his batteries enable him to avoid buying any power from FPL most months, he gets little monetary value for the power he sends back to the grid. FPL only provides retail-rate credit for excess energy when it offsets power that solar users buy from the utility at retail rates.

Any electricity that customers generate that exceeds what they buy from FPL each month is added to a reserve that accumulates through the end of each calendar year, then gets cashed out at about a quarter of the retail rate.

In December, FPL sends the customer a check—or credits the customer's bill—for the accumulated kilowatt hours at its wholesale, or "avoided cost" rate.

So instead of getting paid the retail rate of about 10 cents for each of the 2,159 kWhs he sent back to the grid, which would have given him about $216, Closter got a bill credit last December for $55—or 2.6 cents per kWh. That's the rate FPL could pay for any power it buys from solar customers if reforms are enacted.

"Net metering is peanuts!" he scoffed. With his storage batteries, "the only way for the system to pay for itself isn't by selling power to FPL, it's by avoiding FPL selling power to you."

Without batteries, net metering pays for solar system

For customers without storage batteries, net metering can be the difference between affording or foregoing a solar system.

Without batteries, rooftop solar owners must buy from a utility to maintain power at night and when it rains. And they can only send back the difference between what they generate but don't use while the sun is shining. So even after getting credited the full retail rate for what they send back, most rooftop solar owners still owe FPL at the end of each month. Because their homes tend to be larger than average, solar users' monthly bills average $80 a month, McGrath said.

Yet the cost savings rooftop solar systems without batteries generate is what low- and middle-income homeowners use to finance their systems, solar industry members say. Without those savings, they say, solar becomes unaffordable for anyone who's not well off.

While the residential solar energy industry is fiercely opposed to the proposed net metering reforms, the industry isn't exactly encouraging existing rooftop solar owners to adopt Fred Closter's solution and buy storage batteries.

Should battery-stored power be shared?

Solar installers that comprise SEIA's membership need generous net metering rates to remain in place to keep solar affordable for low- and middle-income purchasers, who are seen as the bread and butter of

solar's future.

If slashing net metering buy-back rates leaves storage batteries as the only way to recoup a rooftop solar investment, that knocks out those low- and middle-income homeowners who can't come up with $30,000 or $40,000, said Will Giese, southeast regional director of the trade group Solar Energy Industries Association. Also, it's too early in the development of storage battery technology to know if prices will come down, and by how much, in the coming years, he said.

The association would like to see utilities provide incentives for battery owners to reserve, for example, 20% of their stored energy for potential use across the grid during peak periods. Hawaii Electric Co. unveiled a similar program in June and handed out bonuses for early adopters.

"That would benefit all ratepayers on the grid," he said. "But I have not seen any utility in Florida propose this concept publicly."

Closter says even if the net metering reforms force him to pay a fixed monthly bill as high as $50, he'd still be satisfied with his investment.

"Obviously, I wouldn't be happy and it would make the system less affordable," he said. "But the money isn't what made me want to do it in the first place. I wanted to have a smaller carbon footprint, do our fair share, and become more efficient."