



SOLAR Energy Ambassador



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Solar Articles ONLY

Table with 2 columns: Date/Article Title and My Comment. Contains 27 rows of solar-related news and personal commentary.

For your reference - the info below was extracted by Arlene Litvin, (856-772-0072) at [http://pinklady101.com/\\$SolarPanels.htm](http://pinklady101.com/$SolarPanels.htm)

Extracted from - <https://apnews.com/article/biden-inflation-technology-climate-and-environment-d3829f82ed70e02260432daa943bdcf3>

## Sunrun CEO Powell sees need for more rooftop solar

By CATHY BUSSEWITZ yesterday – August 21, 2022



This photo provided by Sunrun shows Mary Powell on July 28, 2021, in San Francisco. As CEO of Sunrun, the nation's largest rooftop solar installer, Powell has a stake in the recently passed Inflation Reduction Act, which includes tax credits to make rooftop solar more affordable. Powell believes the residential solar industry's growth will accelerate, inching the nation closer to meeting its climate goals. (Sunrun via AP)

NEW YORK (AP) — As the head of the nation's largest rooftop solar installer, Mary Powell has a stake in the recently passed Inflation Reduction Act, which includes tax credits to make rooftop solar more affordable.

But the CEO of Sunrun's excitement about the bill's passage goes beyond business. Powell was passionate about climate change long before it was a topic at cocktail parties. Now that President Joe Biden has signed the legislation into law, Powell believes the residential solar industry's growth will accelerate, inching the nation closer to reaching its climate goals.

The Associated Press spoke with Powell about the impacts of the Inflation Reduction Act. Answers have been edited for length.

Q: How much will the Inflation Reduction Act boost the solar industry's growth?

A: We are seeing 33% year-over-year growth and incredible customer demand. At the same time, we're still collectively as an industry in only 4% of the 77 million addressable homes.

I think mainstream America is really becoming very aware of the value of solar plus storage plus electric vehicles. So this legislation, it just makes my heart sing, because it means so many more customers who would benefit from having a more affordable, resilient, comfortable future will now be able to do that.

### INFLATION

We have to go from 4% of the addressable market to a much higher number to hit the kinds of emissions goals that are in this act.

Q: Does the legislation make it easier for lower-income Americans to access solar energy?

A: Our average customer right now has an average household income of \$50,000 to \$100,000. So with the additional support in the bill for lower-income, working class families, we really expect that to continue to be the segment that grows by orders of magnitude. So we're really thrilled about that.

This has some really good incentives that will help us grow the multifamily housing work that we're doing now.

So many decisions that affect energy-related emissions are made at the kitchen table. This bill is packed with ways that, when that kitchen table conversation happens, customers can see, "Oh, my gosh, I could go with an electric vehicle and save money, I could go with solar and save money. I could get storage and save money." And then you bundle it all together, and the

average American in that lower working class could really save \$1,800 a year, which when you're balancing school budgets, health care, food costs, etc., that's a meaningful number for so many Americans.

Q: Why is increasing the amount of solar on rooftops so important to you?

A: Grandpa's grid solution cannot be the sole solution of the future. It is a really important part of the solution.

Some people don't realize the solar we put on roofs in a given year adds up to the amount of capacity of a nuclear power plant. Just think about that. And that's on roofs all across America. So when we pair storage with it, another thing I get super excited about is then how can we leverage those assets working with the grid operators, with the utilities, to actually lower the cost of the grid for all and to make it more resilient for all.

Q: How have attitudes about climate change evolved since you started?

A: I used the word climate change and I basically was told, "Oof. Don't ever use that word. You'll be viewed negatively, people won't take you seriously."

I definitely was the skunk at the garden party at any of the utility events that I went to, talking about customer obsession, talking about innovation, talking about a distributed grid, talking about climate change. So things have changed dramatically.

It's just so exciting to me that now there's so much national and international interest. There's so much money being invested in climate solutions, technology solutions. It's a complete sea change over the last couple of decades. So even though I would have liked this to have moved faster — it's the way I'm wired — I can also see that things have changed pretty dramatically and this bill can be the catalyst for that next really big change we need to make as a society.

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Extracted from [https://electrek.co/2022/05/12/heres-how-americans-feel-about-rooftop-solar-and-how-it-affects-their-house-values/#amp\\_tf=From%20%251\\$s&aoh=16526252830150&csi=0&referrer=https://www.google.com&ampshare=https://electrek.co/2022/05/12/heres-how-americans-feel-about-rooftop-solar-and-how-it-affects-their-house-values/](https://electrek.co/2022/05/12/heres-how-americans-feel-about-rooftop-solar-and-how-it-affects-their-house-values/#amp_tf=From%20%251$s&aoh=16526252830150&csi=0&referrer=https://www.google.com&ampshare=https://electrek.co/2022/05/12/heres-how-americans-feel-about-rooftop-solar-and-how-it-affects-their-house-values/) or shortcut URL - [bit.ly/3yG3qOu](http://bit.ly/3yG3qOu)

## Here’s how Americans feel about rooftop solar and how it affects their house values

Michelle Lewis - May. 12th 2022 3:46 pm PT

In order to understand the impacts of adopting rooftop solar in the United States, customer review and consumer news platform [ConsumerAffairs](#) polled 1,000 US homeowners about [their views](#) on and overall experience with solar panels. Here’s what the homeowners said.

### Reasons for – and against – adopting rooftop solar

Homeowners who have installed solar panels explained their top reasons for doing so, as well as how much they spent:

- To benefit the environment: 60%
- Energy security: 54%
- To reduce energy bill: 52%
- To reduce energy reliance: 49%
- Tax credit/rebates: 37%
- To shade roof: 29%
- To be off-grid: 28%

Homeowners who adopted solar spent \$11,735, on average, and it took seven years to see a return on investment. And, those who haven’t made the switch to rooftop solar shared their top deterrents:

- Too expensive: 22%
- Unsure how incentives work: 11%
- Waiting on next tech advancement: 10%
- Credit concerns: 8%
- Unsure how solar works: 6%
- Roof isn’t suitable for solar: 5%

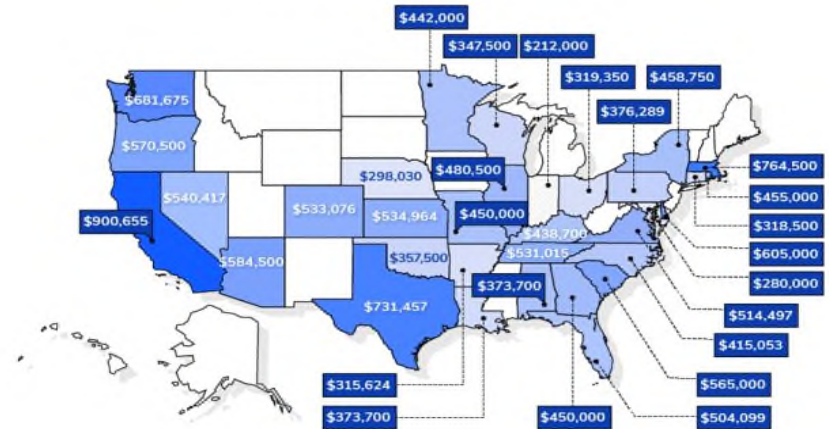
### How rooftop solar affects house values

St. Petersburg, Florida, and Knoxville, Tennessee, saw the two largest percentage increases in home sale prices for putting solar panels on roofs. Homeowners with

solar in those two cities were able to sell for a staggering 159% and 149% more than others, respectively.

California, which is regularly at the forefront of green initiatives and legislation, had 11 of the top 75 cities with the highest price increases in clean energy home sales. New York had the highest number of clean energy homes listed for sale. Even the four cities at the very bottom of the percentage value bump – Seattle; Columbus, Ohio; Bridgeport, Connecticut; and Anaheim, California – saw a 1% rise in selling price on houses with solar panels. 70% of homeowners polled were pleased by the substantial increase in home value after installation. Homeowners can make a significant amount of money from adopting solar, especially after the initial cost of installation is paid off. On average, US solar homes reported an average annual savings of \$1,587 just from energy costs alone. The return on investment for solar panels is seen in a little over seven years, on average.

Average selling price for green homes



Average overall home selling price vs. green homes sold in the past year

Top 10 cities				Bottom 10 cities			
City	Overall	Green homes	Avg. % change	City	Overall	Green homes	Avg. % change
St. Petersburg, FL	\$283,450	\$734,502	159	Seattle, WA	\$795,000	\$799,500	1
Knoxville, TN	\$185,000	\$461,000	149	Columbus, OH	\$265,000	\$266,750	1
Birmingham, AL	\$184,500	\$450,000	144	Bridgeport, CT	\$275,000	\$277,500	1
Austin, TX	\$850,000	\$2,000,000	135	Anaheim, CA	\$725,000	\$735,000	1
New Orleans, LA	\$219,500	\$507,500	131	Indianapolis, IN	\$208,701	\$212,000	2
Wilmington, NC	\$267,000	\$605,000	127	Santa Rosa, CA	\$644,000	\$675,000	5
Oklahoma City, OK	\$170,750	\$357,500	109	New York City, NY	\$671,000	\$710,500	6
Chandler, AZ	\$410,000	\$858,000	109	Long Beach, CA	\$843,500	\$905,000	7
Nashville, TN	\$300,000	\$601,030	100	Fort Lauderdale, FL	\$390,000	\$422,000	8
Virginia Beach, VA	\$328,500	\$650,000	98	Omaha, NE	\$275,000	\$298,030	8

Extracted from – <https://www.pv-magazine.com/2022/05/19/is-residential-solar-worth-it-in-the-us/>

## Is residential solar worth it in the US?

MAY 19, 2022 **RYAN KENNEDY**

Many homeowners invest \$15,000 to \$30,000 or more in solar. How does this cost compare to the status quo of paying the utility company?

When shopping for a home solar system, sometimes the quoted price can leave you wondering why someone would move forward with something that seems so expensive.

When compared with the status quo, electricity delivered from the utility, the price may not seem so high after all. First, **pv magazine** will examine the status quo, and how much you can expect to pay for power if you don't get solar panels. Then, we will examine the average cost of solar arrays today and introduce incentives that boost home solar value.

Generally, early adopters have financially benefited from going solar by securing price certainty and stemming the impact of steadily increasing utility bill costs. End-use residential electric customers pay an [average](#) of \$0.138/kWh in the United States, according to the Energy Information Administration (EIA). In California, that rate is \$0.256/kWh, it averages \$0.246/kWh across New England, \$0.126/kWh in the South Atlantic region, and \$0.124/kWh in the Mountain West region.

The EIA reports that the average home uses 893 kWh per month, so based on the average retail rate of \$0.138/kWh, that's an electric bill of about \$123 monthly, or \$229 monthly in California. Over the last 20 years, EIA statistics [show](#) that retail electricity prices have increased 59% across the United States, or 2.95% each year. That means in 20 years, the average monthly bill across the United States would increase to \$213 a month, and in California monthly bills would be \$398 on average.

This means based on historical rates, the average US homeowner can expect to pay \$39,460 over the next 20 years on electricity bills. On average, Californians could pay \$73,465 over 20 years.

Recent global events show just how unstable prices can be for commodities, and energy is no exception here. What will your utility bill cost in 20 years? These estimated bills also assume that energy use in the home is constant over 20 years, but as the United States electrifies its homes, adds more devices, and adopts electric vehicles, it is fair to expect that many homeowners will use more electricity going forward.

Another factor that may exacerbate rate raising is the upgrade of the national transmission grid. The infrastructure that delivers power to our homes is aging and in need of critical upgrades, and it is estimated that a staggering [\\$500 billion will be spent on transmission buildout](#) by 2035. This half-trillion-dollar cost gets passed down to homeowners in the form of raised utility bill rates.

The benefit of backup power may increase as time goes on as well. Power outages are on the rise across the United States, and [analysis](#) of EIA data by the Associated Press shows that outages related to severe weather events have doubled in the last 20 years. Climate change-fueled storms are expected to continue to rise, so the role of battery backup in providing reliable energy may increase significantly. The truth is, we don't know how much power will cost in 20 years. Though it has increased 59% across the nation in the last 20 years, there is no way to be certain what it will cost going forward. That is where solar has a benefit over the status quo. By purchasing solar, you are securing price certainty going forward, making it easier to budget and plan for the future.

So how do these costs compare to going solar? - **Cost of solar**

As a general trend, prices for solar have fallen. In 2010, it cost about \$40,000 to install a residential solar system, and since then, prices have fallen by as much as 70%, and about 37% in the last five years. However, prices have increased slightly in 2022 due to shipping costs, materials costs, and possible tariffs being placed on imported solar goods, and these pressures aren't expected to be alleviated in the near-term.

When comparing quotes, the best metric for an apples-to-apples comparison is the cost per watt. Price benchmarking by the National Renewable Energy Laboratory [shows the average cost](#) per watt for the nation was \$2.65/W DC in 2021, and the average system size was 7.15 kW. So, an average system

would cost about \$18,950. With 12.5 kWh of battery energy storage, the average cost was \$4.26/W, representing an average price tag of \$30,460 with batteries included.

The prices above do not include any incentives. Currently, the federal government applies a 26% investment tax credit to the system, bringing down system costs for those who qualify to \$14,023 without batteries, and \$22,540 with batteries. Compared to the potential \$39,460 in utility bills, buying a solar system outright in cash appears to show a clear financial benefit.

Many homeowners will need financing to buy a solar system. Shorter terms can achieve rates as low as 2.99% or less, but financing for a 20-year solar loan typically lands between 5% to 8% or more. Based on 20-year, 7% annual percentage rate terms, a \$14,000 system would total about \$26,000 in loan payments over 20 years, and the system with batteries included would total about \$42,000 in loan payments.

Often when you adopt solar, the utility will still charge you a grid access fee even if your system produces 100% of your needs. These vary from utility to utility but are often around \$10 a month. Over 20 years, that equates to about \$2,400 that you'll still need to pay to the utility, plus any costs for energy you use beyond what your system provides.

Based on these average figures, a homeowner could expect to see as much as \$12,000 in savings with a 20-year financed system. Homeowners in regions whose retail energy price exceeds the national average could see savings in multiples of that figure.

Though in this example batteries appear to be marginally more expensive than the status quo over a 20-year term, they improve the home by adding the crucial service of backup power, and increasingly are being approved to participate in grid services, potentially unlocking additional revenue streams for homeowners.

Another thing to note is most solar systems are warranted for 25 years rather than the 20 used in the status quo example. A panel can last a good 35 years, and though it will begin to produce less in old age, any power produced by a panel you own is money back in your pocket.

Many states have additional incentives to boost the value of solar, too. Checking the Database of State Incentives for Renewables (DSIRE) will show the [incentives available in your state](#), and a solar representative should be able to walk you through these benefits when you receive a quote. State incentives change frequently and vary widely, and in some cases are quite rich, offering thousands of dollars in additional benefits.

Another factor to consider is home value. A study by Zillow found that solar arrays increase a home value by 4.1% on average. For a \$375,000 home, that's an increase of \$15,375 in value. In most states home solar is exempt from property taxes, making it a great way to boost value without paying taxes for it.

### Bottom line

We've shared a lot of data on national averages and the potential cost of power going forward, but is solar for you? In the past, early adopters have been rewarded for going solar, and celebrate when they see \$0 electric bills paid to the utility company.

Each home is different, each utility is different, and each homeowner has different needs, so evaluating whether solar is right for your home will take a little time and analysis. Representatives from solar companies will walk you through this analysis, and it's generally a good rule of thumb to get at least three quotes for comparison.

A great resource for starting your research is the [Solar Calculator](#) developed by informational site SolarReviews. The calculator offers a quote and savings estimate based on local rates and incentives available to your area. The website also features reviews of installers, equipment, and more.

Some people will save tens of thousands of dollars in the long run with solar, while others may witness more modest savings. Solar will also provide the home clean, local energy, making an impact both on mitigating climate change and in supporting local jobs.

One indisputable benefit of solar is that it will offer greater clarity into what your electricity bills will cost over the next couple of decades, rather than leaving you exposed to whatever rates the utility company decides to charge in the future.

For your reference - the info below was extracted by Arlene Litvin, (856-772-0072) at [http:// pinklady101.com/\\$SolarPanels.htm](http://pinklady101.com/$SolarPanels.htm)

Extracted from – <https://www.sunrun.com/go-solar-center/solar-terms/definition/solar-racking-system>

## Solar Racking System



### Solar Racking System Definition:

Also called [photovoltaic](#) mounting systems, a solar racking system is used to safely fix solar panels to various surfaces such as roofs, building facades, or the ground. The system is designed to easily be retrofitted to existing rooftops and structures.

### Breaking Down Solar Racking Systems:

#### Orientation & Inclination

[Solar cells](#) perform best when its surface is perpendicular to the sun's rays. This angle changes continuously over the course of the day and as the seasons change. Therefore, it is common practice for solar racking systems to fix solar arrays at the same angle as the latitude of the array's location to maximize annual energy production. This can be difficult to accomplish with roof mounted [solar systems](#). To apply this knowledge with that variable in mind, it is important to have the solar array on the side of the roof that is facing the sun most often.

#### Roof Mounting

When a [solar array](#) is mounted on a rooftop, it is installed parallel to the roof with a few inches gap. If the rooftop is flat, then the racking system is installed so the solar array is aligned at an angle. In either case, the solar mounting system can be a part of initial construction of the building or be retrofitted to an existing roof.

#### Ground Mounting

Ground mounted solar panels are usually for large scale utility stations. The solar arrays are attached to the racking system with its foundation directly into the ground. In rare cases, these ground mounted solar arrays can be installed for residential use given the proper space allocation, lack of shading obstructions, and local/state regulations allow it.

Extracted from – <https://www.sunrun.com/go-solar-center/solar-articles/do-solar-panels-increase-home-value>

## Do Solar Panels Increase Home Value?



## Solar Panels and Battery Storage Can Help You Build Long-Term Financial Gains

Savvy homeowners, potential buyers and appraisers know that [solar panels and battery storage](#) can increase your home's value on the real estate market. Specific numbers vary between each installation and property. Yet recent studies show an average increase in resale value between \$4,020 and \$5,911 for each 1 kilowatt of [solar panels](#) installed.<sup>1,2</sup>

At \$4,020 per kilowatt, a 5 kilowatt solar panel installation would add an average of \$20,100 to the market value of a mid-sized U.S. home. Or in California at \$5,911 per kilowatt, a small 3.1 kilowatt system would add an average of \$18,324 to the value of a mid-sized home.<sup>2</sup> That's an appreciable amount that homebuyers are willing to pay. And, a solar home's selling price is typically 3.74% higher or more than comparable properties without solar.<sup>3</sup>

The price of an average rooftop solar installation and battery is generally recouped in the home's sale price. Plus, households purchasing solar are rewarded with lower energy bills and healthy [tax incentives](#) that can cover the system's costs multiple times over the life of its warranty.

### Buyers Appreciate Solar's Added Value

Buyers consider monthly electric bills when purchasing a home. So when assessing the long-term financial value, they're increasingly open to the premium of a solar-ready home. The National Renewable Energy Laboratory notes that installing solar panels is viewed as an upgrade, just like a renovated kitchen, and homebuyers across the country are willing to pay a premium for the economic and environmental benefits of a solar home. Go to <https://www.sunrun.com/go-solar-center/solar-articles/do-solar-panels-increase-home-value> for complete article.

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Extracted from – <https://www.costofsolar.com/the-truth-about-free-solar-marketing/>

## The Truth About “Free Solar” Marketing

You know the saying — “nothing in life is free.” I’ve always been a little torn on that one. On the one hand, there’s much in life that’s free. On the other hand, you do actually have to put in effort of some sort or another to make the most of life and appreciate what you have.

But when it comes to consumer products, yes, “free” is definitely a trick of some kind. Sort of. Sometimes.

And that includes “free solar.” Sort of. Sometimes.



The thing is, solar panels are obviously not free. Solar panels cost a chunky wad of cash. Ads about “free solar” are clearly not being literal. If you don’t put down up front the several grand or more it costs to get a rooftop solar PV system, then you most likely pay for it over the course of years or possibly even decades. That’s not free. On the other hand, it doesn’t have to literally be true to be true. “Free solar” is not actually as deceptive as it might seem on the surface.

You have to pay for electricity, from some source or another. It doesn’t fall out of the air and land right in the socket of your laptop or Tesla Model 3. Normally, people pay their utility company for all of their electricity. If you get rooftop solar power, perhaps you pay a bank that loaned you the money for the system or perhaps you pay a solar company that leases you the system or sells you the power. The idea of “free solar”

is that you are getting solar power for nothing — or actually saving money — if you pay less for the electricity from that solar system than you would pay your utility in a more common setup.

Since the price of solar dropped off a cliff in recent decades and then kept tumbling lower and lower into a crater of unbeatable opportunity, “free solar” may be clickbait in a literal sense but it may actually be pessimistic when you look at the big picture. A more realistic way of looking at the topic may be that solar can save you money. In any case, I seem to be back at my dilemma. Does “nothing in life is free” make sense here or does it miss the point?

### Solar Savings vs Costs

The story doesn’t end with pedantic philosophy, though. “Solar costs a lot but can possibly save you money” doesn’t really tell you what you need to know. The thing is, people often look around for generic, simple truths, but some matters are just too variable and personal for generic claims. Solar definitely fits that bill.

Whether solar can save you money depends on how much electricity you use, how much you pay for electricity, how much sunshine lands on your roof, how much of that roof can safely host solar panels, how much solar installers in your area cost, and probably other factors.

The thing that is both challenging and wonderful about the solar industry is that this is a hyper localized matter that has to be evaluated by a human or five on a location by location basis. The wonderful thing about this is that it creates a lot of great jobs for our fellow Americans across the country. The challenging thing is that you can’t just order a rooftop solar system on Amazon in a few moments. You need to actually have professionals look at your specifics — and usually your roof — before you can get details on costs and savings.

So, back to “free solar” marketing — I can’t tell you generically if your rooftop solar system would be free, would be costly, or would save you a boatload of cash. Anyone claiming to offer you free solar before actually getting your info is pulling your chain with some deceptive marketing. Get around all of that by getting some genuine, local solar installers to look into your story.

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Extracted from – <https://www.wired.com/story/solar-panels-best-social-fad-ever/>



## Solar Panels Could Be the Best Fad Ever

**Installing an array on your roof is environmental exhibitionism—and it's contagious.**

“OH, YOU SHOULD totally do it,” my neighbor said.

I was nursing a beer at his winter holiday party as he told me about the solar panels on his Brooklyn brownstone roof. They'd cut his electricity bill down so much that in a few years they'll have paid for themselves, he told me. I had questions: Did it damage his roof? Were there any complications? Any regrets? Nope: If anything, he wished he'd put up a bigger array, to produce even more juice. “It's great,” he gushed.

I went home, intrigued. I'd been thinking about putting an array on my roof for years, but something about my friend's confidence pushed me over the edge. I called up Brooklyn Solarworks, a local firm, and their crew of electricians arrived and, with a chill, we-got-this vibe, installed a gorgeous, sleek set of panels. It's a “canopy” setup, with the panels raised 9 feet above my roof on thick, shiny aluminum braces, crafted with such perfect welds it made my engineering-nerd heart swoon. My house is old, built in 1902, so the canopy lends it a vaguely William Gibsonian aesthetic: a ramshackle blend of vinyl siding, snaky wiring, and dark promise. You can see the panels from a block away; they attract attention.

Indeed, a few months after they were installed, I got a knock on my door. It was a neighbor from around the corner who'd seen my solar array and, like me before him, was intrigued. We clambered up on my roof, and I told him how they'd cut my electricity bill by about 80 percent, and frankly I was happy as a clam. With the tax credits I got, the panels would pay for themselves in seven years, after which it would be—well, crazy-cheap electricity for life.

My neighbor walked back home. And a few months later, a solar canopy popped up on his roof too.

Solar, it turns out, is a virus—a *good* one. Researchers have been documenting this, and it offers some intriguing hope for climate-change mitigation. Now that we know solar uptake has a social spread, we may be able to make it spread faster.

In a 2014 study, Yale economist Kenneth Gillingham and a colleague looked at the adoption of residential solar installations in Connecticut and found that it spread through neighborhoods in a “wave-like centrifugal pattern.” A subsequent study, by economist Stefano Carattini, then at Yale, and two colleagues, documented the same phenomenon in Switzerland. And when I dropped by the offices of Brooklyn Solarworks, the folks there

showed me a map of where they'd installed panels. Sure enough, it was all epidemiological hot spots—you see empty streets with no solar at all, then blocks that are simply crammed with it, neighbors next to neighbors with arrays.

This makes sense, right? We're social animals. Whether it's fashion or jokes or political views, we take cues from those around us. Social influence is particularly useful, though, when a life decision is expensive. Solar may save you money in the long run, but up front it's the price of a car, which can give one pause. “There's some uncertainty. You don't know exactly how things are going to play out,” Carattini tells me. So we gain confidence when someone near us takes the plunge. It also helps when they're similar to us. Carattini found that when farms put up solar arrays, it spreads to other farms, and the same thing happens with corporations. Like attracts like.

Plus, putting up panels is peacocking that's easy to spot. “It's actually visible on your house, and it's always visible,” notes Evelyn Huang, the chief customer experience officer for Sunrun, a national solar firm. She cited market research showing that the majority of people who installed solar believed that a quarter of their community had already done so. That's probably a false belief—I doubt rates are that high anywhere in the US. But it's a usefully beneficent one. People build a mental model of the awesome behavior they think is going on around them and join in.

Even language matters. In Switzerland, there are regions that speak Italian, German, French. If solar is spreading, it stops when it hits a language border. Solar virality is a matter of, quite literally, word of mouth. This points to an obvious corollary: If we want to encourage climate-saving behaviors, people need to talk more.

Carattini is currently doing an experiment in the UK with customers who buy energy from renewable sources like wind or solar farms. That's a hidden behavior; it just shows up on a bill. So he created signs and stickers for those households to publicly display the source of their energy, and presto: It started spreading. “Maybe if we can make otherwise invisible behavior visible,” he notes, “we can increase its adoption.”

Understanding the viral nature of solar also helps us reconsider the power of individual action. Often, when we argue about how to address the terrifying enormity of climate change, the personal decisions we make seem insignificant. Look, hippie, who cares if *you* buy LED bulbs or avoid plastic straws? Nothing's gonna change until the government puts a price on CO<sub>2</sub> that forces corporations—our biggest economic actors at scale—to behave more sustainably.

Now, it's clearly true that mandates are both powerful and crucial. But peer effects have a propulsive energy of their own, argues economist Robert Frank in his latest book, *Under the Influence: Putting Peer Pressure to Work*. People stopped smoking at a stunning rate not merely because of government mandates, like higher cigarette taxes and bans in restaurants. They also stopped because it became a social cascade. Your partner stopped, so you stopped, so your friend stopped, and then their spouse stopped.

A good government mandate can work hand in glove with our social nature. In other words, your individual actions matter because they are, in a weird way, not merely individual. They spread, outward, like a wave.

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Extracted from – <https://globenewswire.com/news-release/2018/06/29/1531879/0/en/Home-Solar-Leader-Sunrun-Brings-Batteries-And-Solar-To-Puerto-Rico.html>

## Home Solar Leader Sunrun Brings Batteries And Solar To Puerto Rico

June 29, 2018 11:00 ET | Source: Sunrun Inc.

Sunrun brings home solar and battery service to Puerto Rico.



Sunrun crews install rooftop solar panels in San Juan, Puerto Rico.

*Sunrun's home solar and battery service, Brightbox, gives Puerto Ricans the freedom to create their own energy and power through blackouts.*

SAN FRANCISCO, June 29, 2018 (GLOBE NEWSWIRE) -- Sunrun Inc. (Nasdaq:[RUN](#)), America's largest residential solar, storage and energy services company, is now offering [solar-as-a-service](#) and home batteries to households in Puerto Rico. With Sunrun's [Brightbox](#) home solar and battery service, Puerto Ricans now have peace of mind during outages and the freedom to create and store energy to power their homes.

In the aftermath of Hurricanes Irma and Maria in September 2017, nearly all of Puerto Rico lost power. Thousands of residents remain without power even today, and those who do have basic electric services experience frequent blackouts. Brightbox can be installed in as little as a day and, unlike a generator, is recharged daily by the sun and reliably delivers clean electricity.

"Sunrun is proud to support Puerto Rico's vibrant solar economy by creating jobs and offering residents the freedom to make their own energy," said Lynn Jurich, Sunrun Chief Executive Officer and co-founder. "Puerto Rico is embracing the opportunity to rebuild a

cleaner and more resilient electricity grid with home solar and batteries. The island can be a model for America's future energy system."

Governor Ricardo Rosselló Nevares said: "We welcome and thank Sunrun for providing us with a solution of alternative clean energy and continuing to be part of the journey of progress and development towards a self-sustained power grid for Puerto Ricans."

Sunrun will partner with local sales and installation teams to deliver its service, creating new employment opportunities for residents. As one of the fastest-growing sectors in the American economy, the home solar industry is ushering in a new energy era.

Puerto Rico is ideally suited for solar energy. The mountainous geography and extreme weather make traditional delivery of electricity -- via centralized generation and bulky power lines -- vulnerable to damage and expensive to build. As an island with limited land available, residential solar is particularly attractive because rooftop solar uses existing infrastructure, keeping costs low and maintenance at a minimum.

As the electricity grid modernizes, distributed energy resources such as home batteries, together with new digital technologies, will create a more responsive, efficient and resilient energy system designed around consumers and their needs. The energy stored in home batteries can also be aggregated and deployed during peak demand or outages creating a more resilient overall energy system, as well as delivering individual home backup power.

Sunrun was one of the the first national solar companies to send aid to Puerto Rico in the aftermath of Hurricane Maria. Sunrun partnered with non-profits Empowered By Light and GivePower to deliver solar and battery systems that ensured fire stations could continue to provide essential emergency services to people across the island. Sunrun's solar systems have powered these essential services uninterrupted since install and through the longest blackout in American history.

With operations in 23 states, the District of Columbia and now Puerto Rico, Sunrun is America's leading solar, storage and energy services company. Sunrun has provided its premium solar-as-a-service to American households for more than 11 years. For more information, visit Sunrun's [plans and services page](#) or call 1-888-GoSolar (1-888-467-6527).

### About Sunrun

Sunrun (Nasdaq:[RUN](#)) is the nation's largest residential solar, storage and energy services company. With a mission to create a planet run by the sun, Sunrun has led the industry since 2007 with its solar-as-a-service model, which provides clean energy to households with little to no upfront cost and at a saving compared to traditional electricity. The company designs, installs, finances, insures, monitors and maintains the systems, while families receive predictable pricing for 20 years or more. The company also offers a home solar battery service, Sunrun [Brightbox](#), that manages household solar energy, storage and utility power with smart inverter technology. For more information, please visit: [www.sunrun.com](http://www.sunrun.com).



For your reference - the info below was extracted by Arlene Litvin, (856-772-0072) at [http:// pinklady101.com/\\$SolarPanels.htm](http://pinklady101.com/$SolarPanels.htm)

Extracted from <https://www.insidermonkey.com/blog/why-billionaire-chase-coleman-has-just-acquired-a-big-stake-in-sunrun-657488/?yptr=yahoo>

## Why Billionaire Chase Coleman Has Just Acquired a Big Stake in Sunrun

Published on April 20, 2018 at 11:32 am by [ALEXANDR OLEINIC](#) in [Hedge Funds, News, Tech](#)

In a recent 13G filing, billionaire [Chase Coleman](#)'s Tiger Global Management disclosed a new position in [Sunrun Inc. \(NASDAQ:RUN\)](#), a small-cap residential solar installer. According to the filing, at the end of March, Tiger Global Management acquired 8.41 million shares of the company, which represent 7.8%. The stake makes Tiger Global one of the largest institutional shareholders of Sunrun, only behind FMR LLC and VC firm Foundation capital, which hold 16.02 million shares and 8.87 million shares. As a side note, on our website you can follow the hedge funds you like and receive real-time alerts when they disclose changes in their holdings via 13D or 13G filings. Just sign up and add your favorite hedge funds or companies to your follow list to start receiving email alerts.

The filing caught our attention, because Tiger Global is not really the fund to invest in solar, even though Chase Coleman is known for his tech investing prowess. We looked back and saw that Tiger Global hasn't invested in solar companies in almost a decade. During the fourth quarter of 2008, Tiger Global was one of the top buyers of solar stocks, having acquired stakes in JA Solar Holdings Co., Ltd. (ADR) (NASDAQ:[JASO](#)) and Yingli Green Energy Holding Co Ltd (ADR) (NYSE:[YGE](#)) and boosting the stake in LDK Solar. However, during the first quarter of 2009, all solar holdings from Tiger Global's portfolio were closed. Between 2010 and 2011, Tiger Global also held shares of Power One (acquired in 2013 by ABB).

Tiger Global didn't disclose publicly why it has invested in Sunrun or whether the position is going to stay in the fund's equity portfolio for a long time, but we have decided to take a closer look at the company nonetheless in order to figure out some rationale behind the move, or at least make some guesses about it.



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Let's start with the industry. In the last couple of years, the solar industry has been a paradox of sorts. In 2016, the US saw 15 Gigawatts of solar capacity installed, a record. At the same time, the largest bankruptcy of that year was Sunedison, which filed for Chapter 11 after months of struggle as debt-fueled acquisitions proved unsustainable. SolarCity went from being one of the hottest stocks in the industry to requiring help from [Tesla Inc. \(NASDAQ:TSLA\)](#). Between 2011 and 2014, over 100 solar companies in Europe and the US declared bankruptcy, shut down or acquired. Some of the top companies like First Solar, Inc. (NASDAQ:[FSLR](#)), or Canadian Solar Inc. (NASDAQ:[CSIQ](#)) also saw their stock prices plunge between 2015 and 2016.

There are several reasons why solar companies got in trouble. The main problem was actually that the solar industry became a victim of its own success. The popularity of solar panels created a high growth industry with many companies wanting a slice. Many companies started to chase this growth, often sacrificing returns in the process. At the same time, solar projects require high costs, getting more projects require companies to expand the number of their employees, build new factories to manufacture panels. When companies tried to outbid each other by offering lower price per kWh, they obtained very little profit.

Another reason concerns residential solar installers. For years, people had been investing money into installing solar panels on their roofs or near their houses in order to save costs and even make money through feeding the excess electricity back into the grid. Between 2011 and 2017, installations of rooftop solar panels surged by over 800%, according to some estimates. However, the popularity of rooftop panels was not appreciated by utility companies, who, armed with lobbyists, launched campaigns in state capitals against rooftop solar installations. Utilities considered that it was unfair that households were allowed to sell excess electricity at retail price (a practice known as net metering), because it raised prices for households that couldn't afford or didn't want solar panels. The campaigns were pretty successful with many states deciding to phase out net metering. Other states introduced higher fees that eliminate the incentives households get in the form of lower electricity bills.

## 2018-04-20 - Why Billionaire Chase Coleman Has Just Acquired a Big Stake in Sunrun // Page 2 of 2

In this way, in 2017, there were 10.6 GW of new capacity installed in the US, down by 30% from 2016 and there are currently over 53 GW of total capacity installed, according to SEIA. Residential installations fell by 16% last year to a total of 2,227 megawatts installed in 2017.

Looking ahead, the US solar industry is expected to continue to grow and total capacity is expected to double by 2023. The recently-introduced tariffs of 30% on imported photovoltaic panels is expected to slow down this growth to some degree, but there are some factors to consider. First, the tariff is on panels, which represent just a fraction of the total cost of solar installation process. A big part of the cost are expenses associated with marketing, labor, permitting, which are carried by installers. While the tariffs will help US manufacturers, the cost of higher panels will be transferred to installers and households, although it is expected to be incremental.

Which brings us to Sunrun. Sunrun last year became the largest residential solar installer in the US, surpassing Tesla Inc. (NASDAQ:TSLA)'s SolarCity and **Vivint Solar Inc (NYSE:VSLR)** and outliving Sungevity and Verengo Solar, which went bankrupt, and NRG Home, which exited the solar business (all three were among the top players on the market). In the fourth quarter, the company installed 85 MW, up by 10% on the year and slightly lower than the company's guidance of 87 MW. SolarCity installed 87 MW, but it includes commercial and industrial systems in addition to residential. For the full 2017, Sunrun reported 323 MW in new capacity, up by 15% compared to 2016 and this year it expects to add another 15%. In March, **Bloomberg** reported that Sunrun was seeking to get \$500 million in financing for new installations.

Among the hedge funds in our database, Sunrun saw 10 funds long its stock at the end of 2017, down by four over the quarter, but higher than 14 funds that held shares at the end of 2016. Vivint Solar Inc (NYSE:**VSLR**) is less popular with just six funds holding shares as of the end of last year. In Tesla Inc. (NASDAQ:TSLA) there were 38 funds, but it's mostly because of its core car manufacturing business. Overall, Sunrun Inc. (NASDAQ:RUN) is the fifth **most popular solar stock** among the hedge funds we track, behind First Solar, Inc. (NASDAQ:FSLR), Solaredge Technologies Inc (NASDAQ:**SEDG**), TerraForm Power Inc (NASDAQ:**TERP**), and Canadian Solar Inc. (NASDAQ:**CSIQ**).

Looking at the consensus sentiment among hedge funds towards individual companies is an important metric, because stocks that see more bullish investors among smart money tend to perform better than their peers. Our investment strategy focuses on consensus picks among 100 best-performing hedge funds and it has returned over 74% since May 2014, beating the S&P 500 ETF (SPY) by more than 20

percentage points. You can take a closer look at our strategy and see the **latest picks** by accessing our newsletters free of charge for 14 days.

There are several reasons to like Sunrun Inc. (NASDAQ:RUN), aside from its leading market position. The company saw its revenue grow by 37% to \$231.43 million last year and it had a net income of \$1.15 per diluted share, up from \$0.87 a year earlier. Sunrun Inc. (NASDAQ:RUN) became cash flow positive last year and if the company continues to grow its installation capacity it should generate cash flow even higher.

In addition, last year Sunrun reached an unlevered net present value of \$1.22 per watt, the highest in company's history. The net present value of a project is the difference between the project value and the creation cost and can show the value of future income from solar installations. Even if the tariffs raise the costs, the company still expects the net present value to stay above \$1.0 per watt this year and is likely to grow as Sunrun Inc. (NASDAQ:RUN) will explore new ways to cut costs.

Sunrun Inc. (NASDAQ:RUN) might face headwinds as it tries to maintain its leadership position on the US residential solar market. Last year it managed to gain market share because both SolarCity and Vivint Solar Inc (NYSE:VSLR) sacrificed growth to improve profitability. Vivint expects this year to become cash flow positive as well and to return to growth. Therefore, Sunrun might face tougher competition, which might affect its ability to grow at 15% per year.

To diversify its business, Sunrun has launched BrightBox, a battery system that can store and power houses in case of outages or during dark hours. As households lose the incentive of net metering, solar-plus-storage is expected to grow faster and become an important part of the industry. Sunrun started offering BrightBox systems with Tesla Inc. (NASDAQ:TSLA)'s Powerwall batteries in 2016, but after Tesla Inc. (NASDAQ:TSLA) bought SolarCity, it moved to LG Chem batteries. BrightBox system is currently available in six US states.

To sum up, Sunrun's stock has potential to grow further as the company has growth on its side and other markets to tap into, such as expanding its battery business and exploring the energy grid services market that solar companies are just starting to explore.

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Extracted from <https://finance.yahoo.com/news/florida-psc-unanimously-votes-grant-164418465.html>

## Florida PSC Unanimously Votes To Grant Sunrun Ability To Offer Zero-Down Home Solar In Florida

GlobeNewswire·April 20, 2018

SAN FRANCISCO, April 20, 2018 (GLOBE NEWSWIRE) -- Sunrun Inc. ([RUN](#)), the nation's largest residential solar, storage and energy services company, today applauds Florida regulators on unanimously voting to grant Sunrun's Petition for Declaratory Statement regarding its solar lease product proposal. This lease can provide Floridians an easy, clean way to power their homes without dealing with the high upfront cost of solar panels, equipment, and installation. Sunrun will also fully maintain the system, offering households a hassle-free option for going solar.

Until today, households in Florida were unable to lease solar systems. This morning, the Florida Public Service Commission voted in accordance with clearly defined state law to ensure homeowners have the right to lease a solar system from Sunrun.

"The Commission's vote to grant our petition is a critical step toward broadening access to solar energy for Floridian households," said Anne Hoskins, Chief Policy Officer of Sunrun. "We are grateful for the time the Commission and technical staff spent promptly reviewing our petition and our Florida lease product, and look forward to bringing additional solar energy choice to more people in the Sunshine State soon."

Sunrun's lease offering will make going solar and saving on your electric bill even easier. Homeowners can get started for little to \$0 down and pay a low, predictable rate to lease the solar system. Sunrun expects to start accepting orders in select markets in the coming months, in accordance with the Commission's final ruling.

"Sunrun is delighted to now be able to offer Floridians the opportunity to lease a solar system, enabling them to have clean, reliable, affordable solar power for their homes," said Lynn Jurich, Chief Executive Officer and Co-Founder of Sunrun.

### About Sunrun

Sunrun ([RUN](#)) is the nation's largest residential solar, storage and energy services company. With a mission to create a planet run by the sun, Sunrun has led the industry since 2007 with its various solar and storage products, which provide clean energy to homeowners with little to no upfront cost and often at a saving compared to their existing electric bill. The company designs, installs, finances, insures, and maintains the systems, while families receive predictable pricing for 20 years or more. For more information, please visit: [www.sunrun.com](http://www.sunrun.com).

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Extracted from – <https://globenewswire.com/news-release/2018/04/11/1468527/0/en/As-Illinois-Turns-to-Clean-Energy-Sunrun-Offers-Rooftop-Solar-and-Jobs.html>

## As Illinois Turns to Clean Energy, Sunrun Offers Rooftop Solar and Jobs

State commits to clean energy future, encouraging job growth and affordable solar for all

April 11, 2018 09:00 ET | **Source:** Sunrun Inc.

SAN FRANCISCO, April 11, 2018 (GLOBE NEWSWIRE) -- Sunrun Inc. (Nasdaq:**RUN**), the nation's largest residential solar, storage and energy services company, is expanding its home solar service to **Illinois**. Illinois residents will be able to generate their own electricity year-round with rooftop solar, benefitting from cleaner air, monthly savings, and freedom from rising utility bills.

Long considered to be one of the most industrious and productive states in the country, Illinois is a prime contender for a robust and valuable home solar market. In addition to supportive policies like net metering, the state recently passed the Future Energy Jobs Act (FEJA), which reduces financial barriers for households who want to be a part of the clean energy solution, and demonstrates Illinois' strong commitment to renewable energy.

The average price of electricity for Illinois residents rose 30% over the last decade. Up until now, the majority of Illinoisans had no control over rising electricity bills. Sunrun's affordable, clean home solar service model puts control back in the hands of households without requiring any high upfront costs.

"We're thrilled to offer affordable, clean, and reliable power to the people of Illinois," said Lynn Jurich, Chief Executive Officer of Sunrun. "The Midwest is quickly becoming a hub for clean energy and innovative job opportunities. Sunrun is grateful to the policymakers, environmental advocates, and community leaders who laid the foundation for Sunrun's entrance into the market."

With 3,200 employees, 180,000 customers, and a presence in 22 other states and the District of Columbia, Sunrun is the largest dedicated residential solar company in America. The initial entrance will be in Northern Illinois and ComEd service territory,

with a planned expansion into the rest of the state shortly. This will be the company's second market launch in the Midwest, following its success in Wisconsin last year.

Sunrun is working with community leaders on Solar For All, a nation-leading low-income solar program. As an instrumental partner in the creation of the program, Sunrun stands with environmental advocates and local representatives to bring clean energy jobs and opportunities to communities across the state.

"I am pleased to see that the investment we made in renewable energy several years ago is paying off," said Illinois State Senator Don Harmon. "Opening the door for solar energy companies like Sunrun to expand to Illinois will not only provide our children with a better future, it also creates good jobs and economic growth more immediately."

Sunrun believes in a planet run by the sun. Homeowners in Illinois can now save money, control their energy future, improve their communities, and experience the peace-of-mind that comes with Sunrun's full-service offering. For more information, visit Sunrun's [plans and services page](#) or call 1-888-GoSolar (1-888-467-6527).

### About Sunrun

Sunrun (Nasdaq:**RUN**) is the nation's largest dedicated residential solar, storage and energy services company. With a mission to create a planet run by the sun, Sunrun has led the industry since 2007 with their solar-as-a-service model, which provides clean energy to homeowners with little to no upfront cost and at a saving compared to traditional electricity. The company designs, installs, finances, insures, monitors and maintains the systems, while families receive predictable pricing for 20 years or more and a production guarantee. The company also offers a home solar battery service, Sunrun **Brightbox**, that manages household solar energy, storage and utility power with smart inverter technology. For more information, please visit: [www.sunrun.com](http://www.sunrun.com).

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Extracted from - <https://solarindustrymag.com/sunrun-bolsters-partnership-with-grid-alternatives#.WsiV-HJGIJ5.mailto>



Sunrun Inc. has [expanded](#) its national partnership with GRID Alternatives, a company making solar power and solar jobs more accessible to low-income communities and communities of color.

The new partnership includes a philanthropic donation to support job training and solar installations for low-income families, as well as employee volunteerism on projects across the U.S. As part of this year's partnership, Sunrun and GRID Alternatives will be installing systems through the National Association for the Advancement of Colored People's (NAACP) Solar Equity Initiative.

Sunrun will also continue to serve as third-party owner (TPO) on GRID projects through its solar lease and solar power purchase agreement (PPA) products. With this arrangement, Sunrun will own, operate, maintain and insure the systems, while GRID Alternatives will install and fund each customer's prepaid 20-year solar PPA or lease bill. The TPO model allows Sunrun to leverage both the federal investment tax credit and depreciation benefits on these projects – reducing costs for GRID Alternatives and helping the organization serve more low-income households.

"We are committed to providing resilient, affordable solar access for all," comments Lynn Jurich, CEO of Sunrun. "This foundational idea shapes both Sunrun's business philosophy and our values, and we're thankful to GRID Alternatives for our long-term, growing partnership."

Sunrun notes it has supported GRID's work philanthropically for more than six years. In addition, Sunrun employees have volunteered over 4,200 hours through this partnership to date, installing more than 2,000 kW on single-family, multifamily and community solar projects.

"Solar has tremendous benefits for low-income communities," says Erica Mackie, CEO and co-founder of GRID Alternatives. "We're incredibly grateful for partners like Sunrun that share our vision of a transition to clean energy that includes everyone, and are willing to roll up their sleeves with us and make that happen."

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Extracted from - <https://www.sunrun.com/solar-by-state/policy/solar-import-tariff>

## Solar pricing is at an all time low

Panel prices could double as early as the end of this year.

### Go Solar Before Prices Jump

The new proposed tariffs on solar panels could raise costs by \$3,000 for an average installation.

### Here's Why

In May 2017, Suniva and SolarWorld, two U.S. panel manufacturers, filed a petition with the U.S. International Trade Commission (ITC) to impose a tariff on solar panels manufactured anywhere outside of the U.S. Under Section 201 of the 1974 Trade Act, these companies claim that these imports have caused 'serious injury' to their business.

On September 22, the ITC sided with Suniva and SolarWorld, finding 'injury' due to imports -- the first step to a potential tariff. Upcoming key dates include:

- **November 13, 2017:** ITC recommends what tariffs (if any) to impose, for President Trump to review
- **January 12, 2018:** Deadline for Trump to approve, veto or modify the recommendation
- **January 27, 2018 or sooner:** Formal enactment of the tariff (if any)

### Get Sunrun Solar Today

With the uncertainty of the upcoming tariffs on solar panels, there's no better time to go solar with Sunrun. Get your free solar quote today and see how much you can save with the sun.

Extracted from - <https://www.google.com/amp/amp.timeinc.net/fortune/2017/09/22/solar-costs-tariffs#ampshare=http://fortune.com/2017/09/22/solar-costs-tariffs/>

## Why Rooftop Solar Might Get A Lot More Expensive In the U.S.

*The decision is now in Trump's hands // By [Kirsten Korosec](#) // September 22, 2017*

The International Trade Commission ruled Friday that imports of low-cost solar panels have hurt U.S. manufacturers. The decision gives the Trump Administration the power to issue steep tariffs on Chinese companies—where the majority are made—cutting off the flow of cheap panels to installers in the U.S.

The upshot? Solar panel costs could rise for homeowners and businesses, forcing installation companies to potentially cut jobs, industry groups and analysts argue.

In April, manufacturer [Suniva petitioned the ITC](#)—nine days after the company sought Chapter 11 bankruptcy protection—arguing that an influx of cheap panels made it impossible for them to compete. SolarWorld supported its petition. Suniva has requested that solar cells brought into the United States have a 40-cent tariff. The company wants solar panels to have a minimum price of 78 cents a watt, which is two-thirds more expensive than the cheapest panels on the market.

Suniva, which makes panels in Georgia and Michigan, is owned by Hong Kong-based Shunfeng International Clean Energy since 2015. SolarWorld is a German manufacturer that has a subsidiary based in Oregon.

Tesla, which owns SolarCity, said its project will continue regardless of the final outcome.

"Tesla is currently building the largest solar cell and module plant in the U.S., and we are committed to expanding our domestic manufacturing with or without any tariff or price guarantees, a Tesla spokeswoman said."

The issue has split the solar industry. On one side are a few solar manufacturers like Suniva and SolarWorld that say low-cost imports have made it impossible to be profitable. On the other side is the U.S. solar installation industry, which has benefited from low-cost panels that have led to explosive growth in rooftop systems on homes and commercial buildings as well as massive solar farms.

This boom in installations and solar farm construction has helped create thousands of jobs. U.S. solar industry employed 260,077 workers last year, a nearly 25% increase in the number of [solar jobs](#) between 2015 and 2016—a jump largely driven by a massive increase in solar panel installations, according to a report released in February by the non-profit solar advocacy group [The Solar Foundation](#).

But now, analysts and the Solar Energy Industries Association say tariffs threaten to gut the industry.

Suniva's remedy proposal will double the price of solar, destroy two-thirds of demand, erode billions of dollars in investment and and unnecessarily force 88,000 Americans to lose their jobs in 2018, SEIA president and CEO Abigail Ross Hopper said in a statement citing analysts' forecasts.

This could even impact U.S. taxpayers who help pay for tax credits used to encourage Americans to use more clean energy. This could mean U.S. taxpayers will pay as much as \$1.23 billion more, according to [Bloomberg New Energy Finance](#).

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### Sunrun's Evolution from Home Solar Installer to Comprehensive Energy Solution Provider



A conversation with Audrey Lee, Sunrun's new vice president of grid services.

by **Julia Pyper**  
July 19, 2017

A decade may not seem like a remarkably long time to have been in business, but it certainly is in the world of rooftop solar. In an industry known for its ups and downs, residential solar installer Sunrun hit the commendable milestone last week of 10 years in operation.

Executive Chairman and co-founder Ed Fenster and CEO and co-founder Lynn Jurich launched Sunrun in 2007 from an attic in San Francisco and signed the company's first customers from a booth at a county fair. Since then, Sunrun says it has built more than \$2.5 billion in solar systems, saved customers more than \$150 million on their energy bills and generated more than 2.4 billion kilowatt-hours of clean energy.

With more than 3,000 employees serving more than 134,000 families in 22 states (and counting), Sunrun claims it's now the leading home solar company in the country.

"We've come a long way in just 10 years and are just getting started," said Jurich, in a statement.

Over the years, as technology and policy have evolved, so has Sunrun's business model. Sunrun is no longer just a residential solar installer -- it now fashions itself as "the nation's largest dedicated residential solar, storage and energy services company." The decision to rebrand and launch the "Sunrun Brilliant Home" logo last December underscored the transition from pure-play solar company to a more comprehensive energy solution provider.

Then in June, Sunrun hired Audrey Lee as vice president of grid services -- yet another sign the company is expanding its presence at the [grid edge](#). Lee, who holds a doctorate, previously served as vice president of analytics and design at Advanced Microgrid Solutions. She also worked with the U.S. Department of Energy, the California Public Utilities Commission, and the Massachusetts Department of Energy Resources to develop regulatory structures that promote energy innovation.

Lee's job is to figure out how behind-the-meter solar and energy storage can be leveraged as grid assets. She will oversee a new partnership with National Grid, and work with other utilities and energy partners at the wholesale level to learn how distributed energy resources (DERs) can meet the needs of the grid more efficiently.

I recently caught up with Lee at GTM's Grid Edge World Forum to discuss her new role and Sunrun's new grid services initiatives. Questions and answers have been edited for readability and flow.

**GTM:** *Talk a little more about your background and your new role at Sunrun.*

**LEE:** I started out in government, so I have a policy background...and was really involved in demand response and energy storage and smart grid. Then I joined Advanced Microgrid Solutions,

where I focused more on the commercial and industrial side -- thinking about how behind-the-meter energy storage could be leveraged as a grid service, and working with utilities and with the energy markets to do that. Sunrun is a really great next step for me in expanding that to the residential sector.

As our grid is evolving, you really need all of the different resources on the grid to work together and be coordinated. You need those markets to be transparent and the market signals to be clear to all the participants. I'm really looking forward to harnessing all of the solar and now the storage that Sunrun has installed, and plans to install, and integrate that into the grid so that it provides either capacity or ancillary services.

**GTM:** *Sunrun has deployed around 1,000 BrightBox energy storage systems to date, largely in Hawaii where there is a self-supply tariff. What is the value proposition for customers in more dynamic markets like California? Is the appeal mostly backup power? Or is rate arbitrage driving customer interest?*

**LEE:** I think you're right -- the backup and the reliability and resiliency are very attractive to customers, but also the time-of-use rates, which made arbitrage possible for residential customers. Then I think the world is an oyster in the future in terms of demand response programs that energy storage could participate in at the wholesale level. We are working with CAISO (the California Independent System Operator) on ESDER, [the energy storage distributed energy resources stakeholder initiative](#), and holding meetings with the PUC, and looking to really expand the role of distributed energy resources. We are very optimistic about the role of residential storage in participating in the grid.

**GTM:** *Where do you think residential energy storage will offer the most value -- at the distribution level or at the wholesale level?*

**LEE:** I think it will be both. I mean, honestly, we're all working it out right now, right? There are so many stakeholder meetings with utilities and with aggregators and with policymakers to figure out what the role [of energy storage] is. How do

existing structures, like the way utilities rate-base their assets, evolve? And how do they procure DERs? The great thing about storage paired with solar is that it's so flexible; it can provide all these different kinds of grid services. I feel like the technology is there; it's really up to us to figure out the regulatory framework and the market framework to leverage that technology.

Storage could play at the very local level on a circuit, on a feeder line to resolve backflow or voltage issues, or at a substation level to defer distribution upgrades or substation upgrades. [It can help with] local reliability and system reliability, and it's a matter of aggregators working with utilities to pull that all together to make it work. [At the wholesale level] we're still figuring out the roles and responsibilities, the rules, and the market signals to do that.

**GTM:** *How fast are things progressing at the wholesale level? We know there is an ongoing discussion about [opening up wholesale markets](#) to energy storage and distributed energy resources at the Federal Energy Regulatory Commission. Meanwhile, PJM has already established a [frequency regulation market](#) and became the largest market for energy storage. California also has rules that allow [DERs to participate at the wholesale level](#). But when I spoke to CAISO earlier this year, representatives mentioned that the software and communications side of aggregating DERs still needed more work, so that the grid operator could be sure they would respond when needed.*

**LEE:** I think from a technology perspective, it's new, so of course the CAISO [is cautious]. They're in charge of reliability for the grid; they need to be very conservative about this stuff. So it's a matter of doing projects together, showing them the data and getting everybody comfortable with this. And there's no better way than to actually try it out and prove it to the utility, as a distribution operator, and prove it to the CAISO that it can be done.

I know that a lot of utilities have pilots and are working with various partners on that. We don't have anything to announce at this point, but

working with utilities to demonstrate [how DERs can operate in wholesale markets] is definitely something that we're very interested in. [...] There is a great role for an aggregator like Sunrun to orchestrate what the storage does and coordinate, cooperate with the utility and the CAISO on this.

**GTM:** *Do you think a Sunrun or another third party will play the DER aggregator in wholesale markets? Or will the utility?*

**LEE:** I think it's going to be a mixture depending on the territory and the regulatory framework. I think Sunrun has a relationship with the customer -- we set up the contract with the customer and we know how that resource is used. [...] And so I think we want to maintain Sunrun's relationship with the customer and then coordinate with the utility. If the utility were to manage thousands and thousands of systems, I imagine it would be a headache for them, so I think that it's going to require cooperation and partnership with the utility. We want to make sure that the utility gets what it wants in terms of awareness and monitoring of what's going on with the assets, so they can depend on it for grid services.

**GTM:** *This is an interesting time for DERs. On the one hand, there are discussions taking place around the country about the need to preserve net metering and favorable policies for rooftop solar. On the other, there's a transition to more time- and location-based rates taking place, which may be less appealing to rooftop solar, but help to support storage and the broader grid edge transformation we've been discussing. How would you characterize the way DER policies are taking shape in the U.S.?*

**LEE:** At the end of the day, at Sunrun we want clean, renewable energy. We also want to reduce costs to customers. And I think those are the goals for a lot of regulatory commissions and utilities as well, so I think we all agree on that endgame, and it's a matter of deciding what the technology toolbox to make that happen is, and what are the right price signals to incentivize clean energy and reliable energy.

That's why we have this partnership with National Grid, because I think we are really able to leverage each other's strengths in doing that. National Grid is the grid operator in the U.K., so they really understand energy markets and transmission systems, and then of course they have their regulated side on the East Coast [of the U.S.] running a distribution company. And then Sunrun...has the relationship with the customer and the distributed energy experience, so we think that partnership really allows us to tackle this big problem and figure out how to make it work.

**GTM:** *Yes, so Sunrun partnered with National Grid in January. We know the partnership includes a joint marketing agreement to accelerate solar adoption in New York state, a collaborative pilot to explore how DERs can be aggregated and used to help balance the grid, and a \$100 million direct investment by National Grid in approximately 200 megawatts of residential solar assets across all of Sunrun's markets. Where does progress on that partnership stand today?*

**LEE:** The joint marketing is off the ground and their investment in us is starting to pan out. In terms of the grid services, we're just starting to figure that out. [...] We're trying to figure out where it makes sense to deploy solar-plus-storage and grid services.

[National Grid] is bringing in their expertise on the distribution, transmission and wholesale market side, and we're bringing in our experience on the customer side. [...] It's my job to get some good projects in the ground and then announce them to you.

**GTM:** *How important do you think it is that solar companies like Sunrun lead in the grid services space? Other companies could take on that role. But the CEO of Cypress Creek, for instance, believes solar companies (large-scale, in his case) must lead on energy storage or get left behind.*

**LEE:** Sunrun is really proactive and stepping up as a solar company to figure all of this out. And I think it's very important, because Sunrun touches

so many customers. You need to bring ratepayers with you -- they're the customers and you need to make them part of the solution. Sunrun has that great relationship with the customer and is able to do that. I'm not saying Sunrun's going to solve everything, it's not going to operate the grid completely...but I think Sunrun's really stepping up.

**GTM:** *How is Sunrun marketing to DER customers today? Has the process changed now that energy storage is involved?*

**LEE:** Sunrun has come a long way in making the process of educating the customer and selling solar so efficient. And so I think adding on storage to the platform that they have already created is a small step. That platform is the operations, the people, the sales team and the installers, but it's also the software platform and making it really simple for the customer to understand what their electricity consumption is, what their rooftop solar is producing and how it's benefiting them. Because people don't think about electricity all the time -- you've got to make it interesting to them and important to them.

Also, as a solar customer myself, I want to know that my solar company is going to be around, and I think Sunrun has really demonstrated that, and the same thing with storage. There's more involvement because there's more control required and more active participation from that storage into the grid, so customers want to know that there's a strong company backing that installation.

Sunrun has been around for 10 years, and that's no small thing.

**GTM:** *Tesla recently gave up on door-to-door sales and shifted its marketing practice online. Does Sunrun also sell online right now?*

**LEE:** We do both, but at some point there will be a human-to-human, face-to-face interaction. We can lead-generate through online [platforms], but at some point we're going to send someone out to make sure the home is suitable. [...] I think that co-marketing is a growth area for us with partnerships like with National Grid.

**GTM:** *We've talked about rooftop solar and residential energy storage. Can you also describe the role you see Sunrun playing in home energy management?*

**LEE:** I mean, it makes sense; we already have that customer relationship in their home, in terms of solar, so it's a really small step to do storage and to do home energy management.

I think Lynn and Ed have great ambitions to continue to be one of the premier, best home energy management companies in the country. I couldn't speak specifically to the different parts of that [strategy], but we certainly are a home energy management company at this point.

**GTM:** *How do you think Sunrun will reach the next level of customers? Some of the mature solar markets have recently started to slow. Will grid services start to open up new opportunities?*

**LEE:** Sunrun recently doubled its total available market by going into other states -- New Mexico, Rhode Island, Texas, Vermont, Wisconsin, Washington, D.C., and Florida. We also re-entered Nevada and expanded operations in Pennsylvania. So it seems like there's a ton of room to grow, and of course, from my perspective, we would want to grow with energy services in those markets as well.

**GTM:** *Do you think more work still needs to be done for a rooftop solar company like Sunrun to convince utilities that you're both on the same team?*

**LEE:** Yeah. [...] I really want to sit down at the table with utilities and figure out, "What are your problems? How can we help solve them? What's the best way for us to work together?" Our solar-plus-storage resources are here for the grid, we want to be compensated fairly for them, of course, and operate in a very fair and transparent market, but really, there's value in this technology. We just need to figure out how to set up the rules and work together.



For your reference - the info below was extracted by Arlene Litvin, (856-772-0072) at

[http:// pinklady101.com/\\$SolarPanels.htm](http://pinklady101.com/$SolarPanels.htm)

Extracted from - <http://www.washingtonexaminer.com/utility-giant-announces-solar-plants-in-the-heart-of-coal-country/article/2628705>

# Utility giant announces solar plants in the heart of coal country

by [John Siciliano](#) | [Jul 14, 2017, 3:00 PM](#)

Duke Energy, one of the country's largest coal utilities, announced Friday that it will build three large solar power plants in the coal mining state of Kentucky to complement its coal and natural gas power plants.

"Our customers want solar," said Jim Henning, president of Duke Energy's Ohio and Kentucky division, in announcing the new solar power projects.

The three projects will include 19,000 solar panels spread across 170 acres in Kenton and Grant counties.

Henning explained that it's the "right time" to build solar because the cost "has come down significantly in recent years, making it more cost-competitive with other sources of power generation." In addition, solar "gives us the ability to add power capacity in incremental steps – allowing us to match the growing demand for electricity in the region."

Kentucky is the home of Senate Majority Leader Mitch McConnell, who led the charge to resist climate regulations that would harm the miners in his state and other parts of coal country. President Trump won in Kentucky, Ohio and West Virginia based on his campaign promise to restore coal jobs, while his Democratic rival Hillary Clinton vowed to close the mines and retrain the region's workers for solar energy jobs.

The Trump administration has vowed to build "clean coal" power plants, but the carbon capture technology required is not commercially available, especially with low natural gas prices and more renewable energy being built.

Lynn Good, Duke Energy's president and CEO, has said that the company plans to continue to close coal power plants in favor of building more natural gas and renewable power plants, despite Trump's promise to coal country. "We have to look through the changes of administration," she said in April. "Our strategy will continue to be to drive carbon out of our business."

Henning said Friday that the Kentucky solar plants underscore the company's long-term vision. The company's electricity business serves six states from the Southwest to the Midwest. In the last decade, its experience in renewable energy has made it one of the nation's five largest renewable energy companies, investing more than \$5 billion in renewable energy. However, it still owns a big chunk of the nation's coal-fired power plants, which the company is shuttering or converting to natural gas.

The utility-scale solar plants in Kentucky will total about 6.8 megawatts of electricity, "which, at peak production, can provide electricity for about 1,300 average-sized homes," the company said. Duke Energy plans to start construction this summer, and the projects completed by the end of 2017.

The solar power plants will be used in conjunction with the company's existing fossil fuel power plants.

The three new renewable plants "will help diversify and complement Duke Energy Kentucky's existing power generation fleet, which includes a 650-megawatt coal-fired plant that typically runs 24/7 and a 500-megawatt gas-fired facility that the company activates when power demand is high – like on hot summer afternoons," it said.

For your reference - the info below was extracted by Arlene Litvin, (856-772-0072) at

[http://pinklady101.com/\\$SolarPanels.htm](http://pinklady101.com/$SolarPanels.htm)

Extracted from - <https://futurism.com/former-president-jimmy-carter-just-made-a-solar-farm-to-power-half-his-city/>

Earth & Energy

# Former President Jimmy Carter Just Made a Solar Farm to Power Half His City

SolAmerica Energy

WRITTEN BY

Christianna Reedy



July 11, 2017

## IN BRIEF

This year, former U.S. President Jimmy Carter leased 10 acres of land to build a solar farm with the capacity to meet more than 50 percent of the energy needs of his hometown, and he also installed 324 solar panels on his presidential library.

## STEADY SOLAR SUPPORTER

In 1979, in the throes of the [U.S. energy crisis](#), then President Jimmy Carter addressed the nation as he installed 32 solar panels designed to use the Sun's energy to heat water. [He told the country](#), "A generation from now, this solar heater can either be a curiosity, a museum piece, an example of a road not taken, or it can be just a small part of one of the greatest and most exciting adventures ever undertaken by the American people."

Former President Carter's vision for clean, renewable energy proved to be far ahead of his time.

While his successor, former President Ronald Reagan, had the panels removed, Carter and his family have continued their work toward ensuring that those 32 panels became a part of a much bigger story.

Carter leased 10 acres of land in his hometown of Plains, Georgia, to be used as a solar farm. This February, the solar development firm [SolAmerica](#) finally completed the project, which will have the capacity to meet more than *half* of the town's energy needs.

This is, in essence, one action taken by one man...and it is powering half a town.

Then, in June of this year, the Carter family had 324 solar panels installed on the [Jimmy Carter Presidential Library](#), which will provide about seven percent of the library's power.

## THE POWER OF PEOPLE

"Distributed, clean energy generation is critical to meeting growing energy needs around the world while fighting the effects of climate change," Carter said in a [SolAmerica press release](#). "I am encouraged by the tremendous progress that solar and other clean energy solutions have made in recent years and expect those trends to continue."

Carter's continued activism in support of renewables showcases the importance of local and individual efforts to reduce humanity's reliance on fossil fuels, even in the [absence of strong national initiatives](#).

We, the people, have power.

The solar farm in Plains is expected to generate 1.3 MW of power per year, which is equal to burning about [3,600 tons of coal](#). Over time, that will prevent a sizable amount of greenhouse gases from being emitted into our atmosphere.

Many individuals, communities, and even states are joining with Carter in working toward shifting to clean energy sources. Elon Musk, CEO of Tesla, has invested in developing technology and products that are making [solar energy cheaper than ever before](#). The U.S. states of New York, California, and Washington have banded together to [form the "United States Climate Alliance"](#) after President Donald Trump announced the country would pull out of the Paris Climate Accord.

These are just a few examples of people and communities who are working towards a sustainable future. And their work is bearing fruit — the construction of [coal power plants is declining](#) worldwide, and a new report projects that the U.S. will [exceed its Paris Accord goals](#) despite the recent withdraw. Regardless of the opposition, people around the world are choosing to embark on exciting adventure to a bright, renewable (and clean) tomorrow.

The future is looking bright.

For your reference - the info below was extracted by Arlene Litvin, (856-772-0072) at [http://pinklady101.com/\\$SolarPanels.htm](http://pinklady101.com/$SolarPanels.htm)

Extracted from - <https://www.greentechmedia.com/articles/read/sunrun-now-owns-solar-systems-from-sungevity-customers>

## Sunrun Now Owns Solar Systems from Some of Bankrupt Sungevity's Customers



Mosaic is also servicing some of Sungevity's customers.

by [Eric Wesoff](#)  
July 10, 2017

Sunrun has assumed ownership of some or all of bankrupt Sungevity's solar financing agreements, according to an email obtained by GTM.

You'll recall Sungevity as the richly funded startup that promised an "awesome" solar sales experience, but ended up declaring bankruptcy in March of this year.

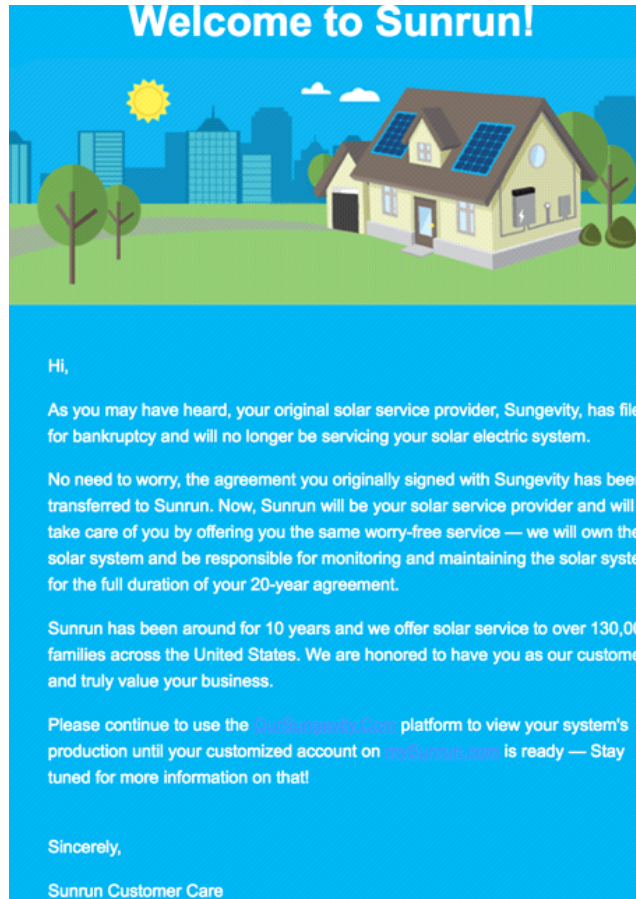
Here's an excerpt from the email.

*As you may have heard, your original solar service provider, Sungevity, has filed for bankruptcy and will no longer be servicing your solar electric system.*

*No need to worry, the agreement you originally signed with Sungevity has been transferred to Sunrun. Now, Sunrun will*

*be your solar service provider and will take care of you by offering you the same worry-free service -- we will own the solar system and be responsible for monitoring and maintaining the solar system for the full duration of your 20-year agreement.*

And the email itself.



Sungevity spent a decade searching for a residential solar business plan, losing almost half a billion dollars in the process. The company filed for Chapter 11 protection in March and entered into a \$50 million court-ordered "asset purchase agreement" led by Northern Pacific Group. The sale followed several rounds of staff reductions that mistreated employees with ambush layoffs, no severance and bounced paychecks.

Sungevity's market share peaked at 2.5 percent in 2014 and fell to 1.6 percent in Q3 2016. Total capacity installed peaked in Q1 2016, according to GTM Research data.

During the bankruptcy proceedings, a Sungevity leasing customer wrote in a court document: "My concern is that the assets I have leased from the company will be sold and my rights negatively impacted from such a transfer. I entered into my lease agreement in good faith that both parties would honor the terms of said agreement. I paid upfront all my lease costs for the entire term. I would expect any buyer to honor that payment and all other terms of my agreement. I contacted Sungevity immediately upon receiving the court notice of the proposed sale."

The customer wrote that Sungevity "responded quickly, stating that the sale should have no effect on my lease," according to a letter ([PDF](#)) in a court docket.

And so Sunrun, as well as [Mosaic](#), are going to be the caretakers of those rooftops. (Sunrun CEO Lynn Jurich talks about the future of the residential solar market [here](#).)

Solar loan provider Mosaic posted this on its website in May.

*Q: I had a signed contract with Sungevity. What's going to happen with my project?*

*A: One of our core values at Mosaic is to be a steward of our planet and customers. To that end, we've advocated fiercely on your behalf for Solar Spectrum (the company that acquired Sungevity's assets) to support the warranties that you signed up for. The good news is we have been successful in most cases. Solar Spectrum has stepped up and agreed to honor at least part of the Sungevity warranties, and the specific details of coverage will depend on your individual situation:*

- *Contracts signed prior to the formal bankruptcy date of March 13, system has reached PTO, Mosaic loan is fully funded. Borrower gets a 7 year warranty as a direct result of negotiation by Mosaic.*
- *Partially funded loan, pre-PTO. The full Sungevity agreement will be honored by Solar Spectrum.*
- *Signed agreement, installation has not commenced. Solar Spectrum will either honor the existing agreement or sign a new one with new terms.*

Whatever is left of Sungevity has been renamed Solar Spectrum and will no longer be offering third-party financing.

For your reference - the info below was extracted by Arlene Litvin, (856-772-0072) at [http:// pinklady101.com/\\$SolarPanels.htm](http://pinklady101.com/$SolarPanels.htm)

Extracted from - <http://www.nasdaq.com/article/sunrun-expands-adds-seven-more-states-in-its-service-zone-cm810069>

## Sunrun Expands, Adds Seven More States in its Service Zone

June 29, 2017, 10:50:00 AM EDT By Zacks Equity Research, [Zacks.com](http://Zacks.com)

Solar energy provider, **Sunrun Inc.** [RUN](http://RUN) announced that it has successfully expanded its solar energy customer base by reaching seven new markets in the U.S. This has resulted in the company adding nearly 12 million homes and expansion of its service area.

The expansion will allow the company to distribute solar energy to New Mexico, Rhode Island, Texas, Vermont, Wisconsin, Pennsylvania, Washington, D.C., Nevada, and Florida nearly doubling Sunrun's total addressable market, which will amount to an excess of 26 million users.

### Recent Expansions

Recently in June, the company forayed in to the market of Florida by promising to offer solar power at more affordable rates to residents of the state. This involved the installation of rooftop solar panels at house, consumers can either own the system outright with Sunrun BrightBuy, or finance the system purchase with Sunrun Bright Advantage, using a loan arranged by Sunrun.

Additionally, Sunrun re-entered the state of Nevada after the policymakers passed legislation to reinstate solar net metering and establish a bill of rights for solar users. The bill is a step toward cutting down of net metering credit rates for homeowners, ensuring that utilities cannot burden users with unanticipated fees, and ensures transparent sales practices in the State.

### What Lies ahead for Solar Stocks?

With the Trump administration having walked out of the Paris Agreement, where nearly 200 countries agreed to limit greenhouse gas emissions and move toward harnessing clean energy. For the time being, renewable companies - in particular solar stocks - are the ones being affected by this decision.

Even though coal stocks are expected to gain the most, state level incentives are being taken up to add renewables to the grid. At the Federal level, the solar investment tax credit remains the most important policy mechanism for supporting the solar industry, resulting in a huge boon to the industry and has been extended through 2021.

Notably, majority of solar projects undertaken are economic and are naturally going to prove beneficial for other stocks in the same industry such as that of SunPower Corporation [SPWR](http://SPWR) , 8point3 Energy Partners LP [CAFD](http://CAFD) , and First Solar, Inc. [FSLR](http://FSLR) .

According to a U.S. Energy Information Administration (EIA) report, the total utility-scale solar electricity generating capacity at the 2016 was 21 giga-watts (GW). EIA expects solar capacity additions during the year will take it to 29 GW by the end of 2017 and 32 GW by the end of 2018.

It is quite evident that despite Trump's efforts to revive the coal industry, the demand of renewable industry is continually on the rise with each passing day.

### Price Movement

In the last six months, Sunrun has outperformed the Zacks categorized [Solar](#) industry. The company's shares increased 33.2%, while the industry gained 20.4%.



This outperformance can be attributed to the company's growth strategy to develop relationships with third parties. It has been resourceful in establishing strategic relationships with market players across a variety of industries, including large retailers, to generate new customers.

The company's continued expansion clearly indicates that it is already on the path of undertaking steps to introduce new products to expand footprint across states in the U.S.

## Sunrun Expands Into Seven New States, Nearly Doubles Market Reach

June 29th, 2017 by [Joshua S Hill](#)






Extracted from - <https://cleantechnica.com/2017/06/29/sunrun-expands-seven-new-states-nearly-doubles-market-reach/>

Sunrun has just finished expanding its market share, extending its reach into seven new markets — New Mexico, Rhode Island, Texas, Vermont, Wisconsin, Washington D.C., and Florida — states which, according to recent analysis, add nearly 12 million candidate homes for residential solar systems. This effectively doubles the company's addressable market, thanks also to expanding operations in Pennsylvania, and re-entering Nevada after the state's policymakers passed legislation re-allowing solar net metering.

Extracted April 11, 2017 from -

[https://bestcompany.com/solar/?sort\\_option=our-score&states=NJ&sort=y](https://bestcompany.com/solar/?sort_option=our-score&states=NJ&sort=y)






## 2017 TOP Ranked - Best Solar Companies in New Jersey

#1		<p><u>Sungevity</u>  <b>March 14, 2017 Filed for Chapter 11 Bankruptcy</b>  <b>1-(855) 338-0912</b></p> <ul style="list-style-type: none"> <li>Buy, Lease, Loan, and PPA Options Available</li> <li>Available in 13 States</li> <li>25 Year Warranty</li> </ul> <p><b>Our Score - 8.7 // User Score - 8.9</b></p>
#2		<p><u>Sunrun</u>  <b>1-(855) 282-7743</b></p> <ul style="list-style-type: none"> <li>Buy, Lease, Loan, and PPA Options Available</li> <li>Available in 13 States</li> <li>10-20 Year Warranty</li> </ul> <p><b>Our Score - 8.6 // User Score - 7.3</b></p>
#3		<p><u>Dividend Solar</u>  <b>1-(855) 284-4144</b></p> <ul style="list-style-type: none"> <li>Buy, and Loan Options Available</li> <li>Available in 25 States</li> <li>25 Year Warranty</li> </ul> <p><b>Our Score - 7.9 // User Score - 9.3</b></p>
#4		<p><u>Vivint Solar</u></p> <ul style="list-style-type: none"> <li>Buy, Lease, Loan, and PPA Options Available</li> <li>Available in 14 States</li> <li>25 Year Warranty</li> </ul> <p><b>Our Score - 7.8 // User Score - 6.8</b></p>
#5		<p><u>SolarCity</u></p> <ul style="list-style-type: none"> <li>Buy, Loan, Lease, and PPA Options Available</li> <li>Available in 21 States</li> <li>20 Year Warranty</li> </ul> <p><b>Our Score - 7.8 // User Score - 5.8</b></p>

Extracted April 11, 2017 from -

[https://bestcompany.com/solar/?sort\\_option=our-score&states=PA&sort=y](https://bestcompany.com/solar/?sort_option=our-score&states=PA&sort=y)

## 2017 TOP Ranked - Best Solar Companies in Pennsylvania

#1		<p><u>Sunrun</u>  <b>1-(855) 282-7743</b></p> <ul style="list-style-type: none"> <li>Buy, Lease, Loan, and PPA Options Available</li> <li>Available in 13 States</li> <li>10-20 Year Warranty</li> </ul> <p><b>Our Score - 8.6 // User Score - 7.3</b></p>
#2		<p><u>Vivint Solar</u></p> <ul style="list-style-type: none"> <li>Buy, Lease, Loan, and PPA Options Available</li> <li>Available in 14 States</li> <li>25 Year Warranty</li> </ul> <p><b>Our Score - 7.8 // User Score - 6.8</b></p>
#3		<p><u>SolarCity</u></p> <ul style="list-style-type: none"> <li>Buy, Loan, Lease, and PPA Options Available</li> <li>Available in 21 States</li> <li>20 Year Warranty</li> </ul> <p><b>Our Score - 7.8 // User Score - 5.8</b></p>
#4		<p><u>SunPower</u></p> <ul style="list-style-type: none"> <li>Buy, Lease, and Loan Options Available</li> <li>Performing Installs in California</li> <li>25 Year Warranty</li> </ul> <p><b>Our Score - 7.6 // User Score - 6.5</b></p>
#5		<p><u>Sunnova</u></p> <ul style="list-style-type: none"> <li>Buy, Lease, and PPA Options Available</li> <li>Available in 17 States</li> <li>25 Year Warranty</li> </ul> <p><b>Our Score - 6.8 // User Score - 4.8</b></p>

For your reference - the info below was extracted by Arlene Litvin, (856-772-0072) at [http:// pinklady101.com/\\$SolarPanels.htm](http://pinklady101.com/$SolarPanels.htm)

Extracted from - <https://electrek.co/2017/04/10/solar-powered-homes-worth-up-to-15000-more-10-northeast-usa-cities-under-focus/>

## Solar powered homes worth up to \$15,000 more – 10+ northeast USA cities under focus

[John Fitzgerald Weaver](#) - Apr. 10th 2017 10:19 am ET



[A recent analysis by Redfin and Sun Number](#), has rated 10+ cities in the northeast based on their solar power potential. Sun Number is a U.S. Department of Energy SunShot-funded startup that has developed a patented automatic process for helping homeowners/buyers understand the solar energy potential of their homes or future homes, using a Sun Number Scale that runs from 1-100, where the higher a reading, the better the property is suited for solar energy installation and use. As early as 2015, [a multi-institutional research led by U.S. Department of Energy's Lawrence Berkley Laboratory \(Berkley Lab\)](#) concluded that home buyers have consistently been willing to pay more for homes with host-owned solar photovoltaic (PV) energy systems. The data came from more than 20,000 sales of homes, about 4,000 of which contained a host-owned solar energy installation. The additional price home buyers were ready to pay was significant and worthy of serious consideration: a hefty premium of about \$15,000. Redfin and Sun Number partially support that prior data.

A key detail (and current weakness in the Sun Number in my opinion) in the ratings system I noted – the price difference between solar/non-solar homes shows more so that more expensive houses have installed solar, versus, showing the value of a solar system on a house. The NREL Berkley report is a better tool to get a pricing feel for solar without solar power – and it gets into the details on a state level.

A great tool I've discovered, developed by Sandia National Laboratories, [is called PV Value](#). Bookmark this website. It'll give you the ability to determine the value of a solar power system based upon the amount of energy it will generate – and it lets you figure out the value of the solar system at any point in the system's life, not just at the time of installation.

### **Cities in the North East with Prospect for Solar**

Here is the data from the joint research conducted by Redfin and Sun Number.

- 1. Providence, RI**  
Median Sale Price: \$139,400 // for Solar Listings: \$329,000  
Average Sun Number: 79
- 2. Rochester, NY**  
Median Sale Price: \$107,000 // for Solar Listings: \$136,500  
Average Sun Number: 80
- 3. Syracuse, NY**  
Median Sale Price: \$95,000 // for Solar Listings: \$262,500  
Average Sun Number: 84
- 4. Worcester, MA**  
Median Sale Price: \$173,000 // for Solar Listings: \$215,000  
Average Sun Number: 82
- 5. Buffalo, NY**  
Median Sale Price: \$108,000 // for Solar Listings: \$200,000  
Average Sun Number: 83
- 6. Boston, MA**  
Median Sale Price: \$450,000 // for Solar Listings: \$629,251  
Average Sun Number: 71
- 7. Newark, NJ**  
Median Sale Price: \$191,000 // for Solar Listings: \$345,050  
Average Sun Number: 76
- 8. Augusta, ME**  
Median Sale Price: \$115,450 // for Solar Listings: \$153,500  
Average Sun Number: 75
- 9. Albany, NY**  
Median Sale Price: \$171,495 // for Solar Listings: \$243,750  
Average Sun Number: 81
- 10. Concord, NH**  
Median Sale Price: \$182,500 // for Solar Listings: \$290,000  
Average Sun Number: 72

[As more homeowners/buyers and real estate agents become aware of solar energy and its usefulness](#), it is projected that the premium home buyers will need to pay more for homes with host-owned Solar PV systems.

*Considering residential solar? [Understand Solar](#) will connect you with local contractors. [Tweet me](#) to pick apart quote.*

*For more electric vehicle, autonomous transport and clean technology news, make sure to follow us on [Twitter](#), [Newsletter](#), [RSS](#) or [Facebook](#) to get our latest articles.*

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Extracted from - <https://www.usatoday.com/story/news/nation-now/2017/04/08/even-kentucky-coal-museum-going-solar/100205662/>

## Even the Kentucky Coal Museum is going solar

USA TODAY NETWORK Morgan Watkins, The (Louisville) Courier-Journa

17:23 a.m. ET April 8, 2017



(Photo: Courtesy of Bluegrass Solar)

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BENHAM, Ky. —Inside the Kentucky Coal Museum, visitors can peruse plenty of memorabilia on mining and the commonwealth's coal camps. But on the roof, [they'll find a display dedicated to an unexpected industry: Solar power.](#) In a cost-saving move, this museum in eastern Kentucky is embracing the sun as a source of affordable energy and installing approximately 80 solar panels on its roof.

Tre' Sexton said he was surprised when his company, Bluegrass Solar, was approached about the project. If there was one building in eastern Kentucky that wouldn't have a solar-power system, you'd think it would be the coal museum, he said.

"Really the first time that I sat down and was talking about it with everybody, I was like...are you for real? They're really going to go for this?" Sexton said. "I mean, that would be like showing up at a bank and they ask you if you'd mind taking some of this money out of the vault."

But putting solar panels on top of the coal museum makes sense economically, Sexton said. Public attractions like this one can't be profitable if they're dealing

with expensive electric bills every month. And people in eastern Kentucky are becoming more interested in alternative energy options.

"It's like, 'This might be coal country, but I cannot afford \$600 a month.' And that's for a home," he said. "If it's a business, God be with them, (the bills are) in the thousands."

Bluegrass Solar and an Indiana-based company called Star Solar are working together on the project, according to a news release from Southeast Kentucky Community and Technical College, the museum's owner. The coal museum's electric bill typically costs about \$2,100 per month, but this initiative is expected to save between \$8,000 and \$10,000 a year.

About 50 solar panels already have been installed on the museum's roof, Sexton said. Once the rest are in place, the system should be able to generate about 60 kilowatts of electricity when it's running at maximum capacity.



About 50 solar panels on the museum's roof could cut electricity costs by nearly \$10,000 annually. (Photo: Courtesy of Bluegrass Solar)

This solar project won't solely benefit the museum. It's also expected to benefit the small city of Benham, which is home to the coal museum as well as approximately 500 residents.

The Benham Power Board, which is a municipal utility, will be able to save money by using the energy the museum's panels generate through an agreement with the college, according to Brandon Robinson, the college's communications director.

It might seem odd for a town that once was "one of the Cadillac coal camps" to embrace solar power, according to Carl Shoupe, a member of the Benham Power Board. But he said local officials have welcomed new ideas.

"They're willing to sit down and talk about things and be open-minded about this kind of change," Shoupe said. "We're just trying to create our own help."

Putting solar panels on the roof of the coal museum is just one part of Benham's energy project, which is expected to cost between \$400,000 and \$500,000 and is being funded through philanthropic donations, according to Robinson. Plans to establish two more local solar-panel sites are in the works as well.

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Extracted from - <http://www.jsonline.com/story/money/business/energy/2017/01/18/2016-shines-wisconsins-brightest-year-solar/96724132/>

## Solar company Sunrun expands to Wisconsin

[Rick Romell](#), Milwaukee Journal Sentinel

Published 9:20 a.m. CT March 29, 2017 | Updated 13 hours ago



Residential solar company Sunrun Inc. has opened an office in Waukesha and is starting operations in Wisconsin, the San Francisco-based firm said Wednesday.

The Wisconsin venture is Sunrun's first in the Midwest. The company hopes to create more than 50 jobs in Wisconsin within its first year in the state, spokeswoman Amy Heart said by email. Sunrun's website currently shows openings for eight jobs here, including a master electrician, a construction supervisor, a solar technician and five sales positions.

Sunrun installs solar energy systems on its customers' homes and sells the power to them under 20-year agreements.

The firm describes itself as the largest dedicated residential solar company in the U.S. Revenue last year totaled \$454 million, up from \$305 million in 2015 and \$199 million in 2014.

**RELATED:** [2016 shines as Wisconsin's brightest year for solar](#)

**RELATED:** [NextEra eyes big solar project at nuclear plant](#)

**JAGLER:** [Werner sees bright future in solar energy](#)

**ARCHIVE:** [Biggest solar project in Wisconsin goes online at coal-ash landfill](#)

## 2016 shines as Wisconsin's brightest year for solar

[Thomas Content](#), Milwaukee Journal Sentinel | Published 3:32 p.m. CT Jan. 18, 2017 | Updated 5:03 p.m. CT Jan. 18, 2017



Buoyed by a major investment in solar by Dairyland Power Cooperative, other utilities and Target Stores Inc. as well as projects around the state, Wisconsin solar industry saw its most active year of development, new data show.

Across the state, which had 25 megawatts of solar power installed at the start of the year, projects exceeding 30 megawatts started construction last year. The new projects, once fully online, will be capable of powering about 5,000 homes.

That's nearly five times as much development as took place in 2015 as utilities, businesses and homeowners responded to falling solar prices.

"Wisconsin solar energy saw its best year ever in 2016, with the projects installed and under construction more than doubling the state's total production," said Tyler Huebner, executive director of Renew Wisconsin, a clean energy advocacy group based in Madison. "But we can't stop here, because our neighboring states are growing even faster than us."

Among the [biggest solar projects](#) to be highlighted at a [renewable energy policy summit](#) on Thursday in Madison include Dairyland Power Cooperative's multi-site project that's actually a series of solar fields across western Wisconsin.

When Dairyland put out a request for proposals last year for up to 25 megawatts of solar, the response was strong and competitive, said chief executive Barbara Nick, a keynote speaker at Thursday's policy summit.

The power cooperative ultimately decided to [move forward with 12 projects](#) scattered around Wisconsin at the site of its local member electric cooperatives. And then the local coops were given the chance to build their own community solar projects alongside the big one.

"It's a real story of Dairyland doing what the communities want," she said.

Nine cooperatives ended up building their own solar projects totaling 2 megawatts, with the economics just as favorable as for Dairyland for its move to add 19 megawatts.

"Of the cooperatives throughout the nation we're the first to be able to do this and at this scale," said Nick.

Nationally, statistics for 2016 aren't yet available but industry forecasters expect that the number of installations doubled from 2015, with the growth linked to the fact that [solar panel prices have dropped 80% in five years](#), Tom Werner, chief executive of SunPower, told the Journal Sentinel recently.

"You're seeing Dairyland sign contracts that are really quite competitive, and that's something that the state's investor-owned utilities would do well to copy," said Adam Browning, executive director of Vote Solar, an advocacy organization based in California.

Many Wisconsin utilities have stalled in new investments in renewable energy given the state's ample power supply and the fact that they have already complied with the state's renewable energy target.

The Legislature set a target more than a decade ago to get more than 10% of its electricity from renewable energy, and the utilities complied in advance of the 2015 deadline. Since Gov. Scott Walker and the Republican Legislature took control in 2011, there's been some talk of relaxing the standard but little push to expand the state's renewables target.



A large solar field built for Dairyland Power Cooperative in Medford. (Photo: Courtesy of Renew Wisconsin)

**Article goes onto tell about Dairyland Power Cooperative**



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Extracted from – <https://www.greentechmedia.com/articles/read/CEO-Lynn-Jurich-Sunrun-Now-Leading-Standalone-Solar-Installer-Aiming-to>

## CEO Lynn Jurich: Sunrun Now 'Leading Standalone' Solar Installer, Aiming to Extend Lead



Sunrun has an opportunity to gain even more market share amidst SolarCity's retreat and Sungevity's fade. **by Eric Wesoff - March 13, 2017**

In a tricky U.S. solar market, Sunrun just posted strong financial results for the quarter and year, emerging as the "leading standalone company in the industry," according to CEO Lynn Jurich.

The U.S. solar market had a record-breaking year and is poised to triple in the next five years. Yet, this same buoyant market has SolarCity taking shelter within Tesla, Sungevity on its last legs, and the loss of NRG's residential solar unit.

Sunrun's Q4 and 2016 results:

- The firm deployed 77 megawatts, up 13 percent year-over-year. Last quarter, Sunrun installed 65 megawatts of residential solar systems.
- Sunrun closed out 2016 with 39 percent full-year growth in deployments and over 60 percent growth in customer net present value.
- According to the CEO, "In Q4, we were able to gain market share, increase deployments, reduce our creation cost by 8 percent, and generate \$67 million in net present value. In the year, we grew at double the industry growth rate and improved our unit economics, all while maintaining our cash position."

The company missed slightly on its full-year deployment guidance, coming up 3 megawatts, or 1 percent, short of its 2016 goal of 285 megawatts.

### A corporate structure that actually works

Whereas SolarCity tries to do everything and Sungevity tried to do nothing, Sunrun's "model makes use of the fragmented local solar industry paired with activities that benefit from our scale."

Jurich noted that her firm had seen demand soften "particularly in the second half of the quarter and in California," but she is confident that "a rebound is occurring, as lead volumes in California registered by our lead-gen business Clean Energy Experts have increased each month from the December lows." She is also seeing some growth in storage: "Customers have placed more than 1,000 orders for our BrightBox product in Hawaii and California alone. The numbers are not small. These systems represent over 20 megawatt-hours of storage. This will be a massive growth market for us and the industry."

### Regulatory optimism

Jurich said, "We believe we are moving from utilities trying to block rooftop solar to them accepting its inevitability and investing time and capital in the sector."

She added, "Just as utilities are switching tactics to embrace distributed energy, so are policymakers. We saw policy advances in Nevada, where the regulator ordered the reinstatement of net metering in northern Nevada and raised the aggregate cap for such systems by 40 percent. This proves that a too-much, too-fast retreat from net metering won't hold up against public scrutiny." During last quarter's call, Sunrun's Edward Fenster said, "The Clean Power Plan was...a utility-scale item that didn't really affect rooftops. In fact, you could easily argue that [its dismantling] could be positive and negative for rooftops."

### PPAs still rule at Sunrun

The company expects installation costs to continue to decline, driven by panel and inverter prices "likely to deliver more than \$0.15 per watt of equipment cost savings in 2017." Sunrun's CFO Bob Komin noted, "Install cost for systems built by Sunrun remained roughly flat at \$2.04 per watt, a reduction of \$0.29, or 12 percent year-over-year." He added, "Our cash and third-party loan mix was 13 percent in Q4, relatively flat with Q3. We expect this to remain at about this level for the year. We believe our PPA and lease product mix of over 80 percent better matches consumer preferences and delivers our customers significant value, which is one of the reasons we have been able to grow faster than the market in 2016."

Jurich said, "And we're not contorting what we offer as a product based on our capital needs. And so I do believe that we have the purest view of what...customers want, because we're customer-first oriented. And so it's no surprise that we grew at double the market

share of the rest of the market, despite people arguing that the future is...more loans than leases." Jurich also sees the storage business working more with PPAs rather than loans.

UBS agreed: "In spite of the sharp shift back toward loans by SCTY, we note RUN is sticking with the leasing model and attribute its relative success in market deployment to the continued acceptance of this approach by customers. We note just ~13% loans in Q4, and likely at this level still through 2017. We continue to perceive a higher margin product for RUN, emphasizing that it has consistently opted for improved margin over cash liquidity in contrast to its peers."

The firm ended 2016 with \$206 million in unrestricted cash, an increase from 2015 and the sixth consecutive quarter the figure has been above \$200 million.

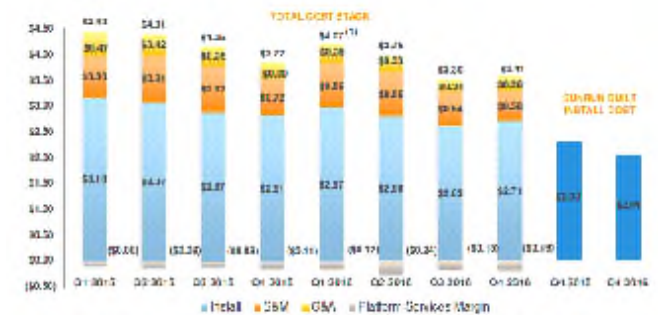
### Confident guidance, bullish prospects

Sunrun issued a Q1 guidance of 69 megawatts. For the full year, guidance is 325 megawatts, representing a 15 percent growth rate year-over-year.

Analyst Colin Rusch of Oppenheimer noted, "[Sunrun] continues to march forward with solar quarterly results and guidance for 15 percent megawatt annual deployment growth in 2017. We believe this is a reasonable rate and sustainable. We are encouraged to see the company's upfront monetization strategy to be growing to ease cash flow along with continued cost declines. We are slowing our lease revenue growth estimates in line with a more conservative view of end-market growth, but offset that with slower spending. We continue to believe the company is well positioned to gain share, leveraging its mixed-channel sales approach, as we expect Tesla Energy (formerly SolarCity) to contract deployments this year."

CEO Jurich is confident, saying, "With our balance sheet strength, we remain on offense in a consolidating and somewhat tentative market. We plan to accelerate our lead."

**Costs Declined 8% Year-Over-Year**  
Sunrun Built Install Cost At \$2.04 / Watt, a \$0.29 decrease year-over-year



Costs Declined 8% Year-Over-Year. Sunrun Built Install Cost At \$2.04 / Watt, a \$0.29 decrease year-over-year. Sunrun's total cost per watt decreased from \$2.33 in Q1 2015 to \$2.04 in Q4 2016. Sunrun's total cost per watt is the sum of the costs of the solar panels, inverters, and other equipment used in the solar system, plus the cost of the solar panels, inverters, and other equipment used in the solar system, plus the cost of the solar panels, inverters, and other equipment used in the solar system.

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Extracted from - <https://www.earthsfriends.com/sunrun-vs-solarcity-vs-sungevity-vs-verengo/>

## Best Solar Panels for Your Home: SunPower vs Sunrun vs Solarcity vs Sungevity vs Verengo vs Vivint Solar vs NRG

**Sally Jones October 21, 2016**

Tired of high electric bills? Worried about the impact of CO<sub>2</sub> emissions on our environment? Look no further than that big ball of energy in the sky. Did you know homeowners **save an average of \$1,000 per year** on electricity by installing rooftop solar panels? The residential solar power industry is steaming hot these days. In 2015 alone, the number of U.S. homes harnessing solar power grew by 66% over the previous year. With ever-evolving financing options and the cost of utilizing solar energy continuing to decline, your choices for an affordable switch-over to solar are better than ever.

### How Do Solar Panels Work?

First, it helps to understand how solar panels work. Solar panels contain silicon or other photovoltaic (PV) materials that absorb the sunlight's energy. Typically when sunlight hits an object, its energy creates heat. But when sunlight hits PV materials, their atoms release electrons that bind together to create an accelerated level of energy. It's this higher level of energy that provides electricity for your home. Learn more in our [How Does a Solar Panel Work article](#).

### What Should You Consider Before Going Solar?

- **Are you a good candidate?** Most likely if the expanse of your roof gets at least five hours of direct sunlight each day and you have high electricity bills. Most sun-powered companies give you a free consultation to see if you're a good fit.
- **Get estimates and consultations from several different companies** to compare your options and gauge their customer service. Ask for their residential project references.
- **Solar lease vs buy?** Solar panel cost is a major consideration. Many companies give you the option of leasing panels rather than purchasing them outright. A solar panel lease is a good option for people who don't want a lot of upfront costs and want to break even much sooner than you would by purchasing solar panels. Most leases require at least a 10-year commitment.
- **Know the difference between leasing and power purchase agreements (PPAs).** In many ways, leasing and PPAs are the same, but when you lease a sun-powered system, you pay a fixed monthly fee as you would if you're leasing a car. With PPAs, however, you pay by kilowatt-per-hour similar to your electricity bill, but typically the solar rates are lower.
- Look into local, state and federal **solar rebates and tax incentives** that can help you save even more money when you're considering solar panels for your home.

### Our Top Picks for Best Residential Solar Companies

We researched dozens of companies and consumer reviews to help you narrow down the playing field. Here we present our top picks for best solar companies, including locations, financing options, features, customer service and more. But how much do solar panels cost? We don't include actual pricing due to the wide variety of financing options and the custom-design aspect of installing solar cells for your home. All companies we review here have a simple "request-a-

quote" website form to help you get started. Just click on the "Visit Website" link next to each company review.

### How much money can a solar roof save you in New Jersey?

Profit from your roof space: find local deals on solar in your area, eliminate your power bill, and join the solar revolution.

### #1 - SolarCity Review - [Visit Website](#)

**Our number one pick, SolarCity, holds nearly a third of the U.S. market share, making them the one to beat in the residential solar industry.** An all-service company, SolarCity is a one-stop shop for financing, designing, obtaining permits and installation with several financing options, including **purchasing, loan financing, leasing and PPA**. SolarCity gives you one team that takes care of it all, with locations in the District of Columbia and 20 states (AZ, CA, CO, CT, DE, HI, MD, MA, NV, NH, NJ, NM, NY, OR, PA, RI, TX, UT, VT and WA).

Pros	Cons
<ul style="list-style-type: none"><li>• Excellent financing options, including lease, loan and PPA</li><li>• They hire their own installers</li><li>• Solar City monitors your system 24/7</li><li>• Mobile app tracks system's production and your home's consumption</li><li>• <b>Battery backup if your grid goes down</b></li><li>• Award-winning customer service</li><li>• In-person evaluation of your roof</li><li>• Team of engineers designs your system</li><li>• BBB accredited: A+</li></ul>	<ul style="list-style-type: none"><li>• <b>Doesn't offer energy performance guarantee</b> that several other companies do offer</li><li>• Some consumer complaints about <b>pushy salespeople and installation delays</b></li></ul>


### Sunrun Review - [Visit Website](#)

Sunrun is a large player in the residential solar industry. In fact, Sunrun pioneered the business model of leasing panels, taking away the high upfront costs incurred if you purchase. Now, they offer solar panels for purchase, loans, leases and PPAs. They **partner with local market installers** to encourage community-wide job growth and to provide local customer support. You can find Sun Run in 14 states: AZ, CA, CO, CT, HI, MA, MD, NH, NV, NJ, NY, OR, PA and SC.

Pros	Cons
<ul style="list-style-type: none"><li>• Financing options include loan, lease and PPA</li><li>• <b>They pay the difference</b> if you're not producing what they quoted you</li><li>• Sunrun monitors your system 24/7</li><li>• PC and mobile monitoring give you your stats and environmental impact</li><li>• <b>Rates locked in for 20 years</b></li><li>• BBB accredited: A+</li></ul>	<ul style="list-style-type: none"><li>• Sunrun outsources some installers</li><li>• <b>No battery backup if your power goes out</b></li><li>• Many customer complaints about poor customer service and panels not producing the energy they quoted</li><li>• System design based on satellite imaging of your roof instead of an in-person evaluation</li></ul>

For your reference - the info below was extracted by Arlene Litvin, (856-772-0072) at [http:// pinklady101.com/\\$SolarPanels.htm](http://pinklady101.com/$SolarPanels.htm)

Extracted from - <http://news.energysage.com/home-solar-power-increase-property-values-across-us/>

	Posted on <b>JULY 26, 2016</b> by <b>ENERGYSAGE</b> .
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## New Report Says Solar Panels Increase Home Value



Installing solar panels can significantly increase your property's value, according to a new study from the Lawrence Berkeley National Lab (LBL). The report, titled "*Selling into the sun: Price premium analysis of a multi-state dataset of solar homes*", builds on previous research which concluded that homes with [solar panels in California](#) sold for more than those without. In addition to [California](#), the new study investigates home pricing trends [Connecticut](#), [Florida](#), [Massachusetts](#), [Maryland](#), [North Carolina](#), [New York](#) and [Pennsylvania](#) by analyzing the sales of over 20,000 homes in these states. LBL's analysis of the housing markets in these other states shows that the premium paid for homes with solar is not a phenomenon isolated to the Golden State.

The takeaway is this: If you are thinking about [purchasing a solar system for your home](#), the study's conclusions should give you a boost of confidence that you are making a smart investment. LBL finds that homes with solar panels will benefit from a 'solar premium' when they are sold because buyers are willing to pay more for a home with solar panels.

### How Much Does Solar Power Increase Home Value?

Example: a 5 kilowatt (kW) solar system (the national average) will offer 5,000 watts of power. LBL says that each watt of solar adds about \$4 to a home's value in California and about \$3 elsewhere. Thus, a home with solar should sell for about (\$4 x 5,000W =) **\$20,000** more in CA or still (\$3 x 5,000W =) **\$15,000** more outside of CA.

Specifically in this state analysis, prospective buyers wondering if solar panels increase home value were pleasantly surprised. What is surprising about these figures is that they are very close to what you would pay for a brand new solar system today. Our own analysis of prices for [6kW solar systems](#) in California reveals that some of the more expensive systems cost just over \$4/W. And bear in mind that these prices are what you would pay before you take into account the generous 30% [Federal tax incentive](#) that is available until the end of 2016.

## Low Cost Solar Power In California is Your Best Investment



The report notes that the difference between the solar premium for [solar panels in California](#) as opposed to the non-Californian states is "not statistically significant": The lower premiums may be due to "lower net costs and income estimates" in the other states. In essence, the premiums in non-Californian states may have to do with lower solar installation prices and electricity rates rather than because solar has a lower valuation there.

**All of this suggests that if you sell your house soon after you have solar system installed, you will recoup most or all of your investment, even as you save money on your power bills.** It also confirms what we've said before: [Payback periods on solar power systems](#) are not something to be overly concerned about. Your solar system will either increase your home value significantly should you decide to sell your house, or it will pay itself off in power bill savings before you move out. In both cases, solar is a sound investment.

### Other interesting points from the report include:

- The solar premium for newly-built homes was slightly lower than for older homes, indicating that retrofit solar installations are valued the same as systems which are built into the home.
- The \$/W solar premium was smaller in homes with larger systems, indicating that there may be a 'green cache' effect. As the report says, "Buyers might be willing to pay a certain amount for having any size of PV system on their homes and then some increment more depending on the size of the system".
- The authors recommend that homes that went solar through [solar leases or PPA](#) programs should be an area of future research; the current study examines only homes with owner-owned systems.

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Extracted from – <https://www.greentechmedia.com/articles/read/breaking-house-passes-1.1-trillion-spending-bill-with-renewable-energy-tax>

## Congress Passes Tax Credits for Solar and Wind: 'Sausage-Making at Its Most Intense'



The biggest federal policy development of the year for renewables plays out on Congress' last day of work in 2015.

by [Stephen Lacey](#) - December 18, 2015

Lawmakers in the House and Senate passed a spending package today that includes multi-year extensions of solar and wind tax credits, plus one-year extensions for a range of other renewable energy technologies.

The pair of bills, which included tax extenders and \$1.1 trillion in funding to keep the government running for the next year, passed hours before lawmakers adjourned for the holidays.

"May the force be with you," said Senator Dianne Feinstein, urging her fellow Senators to vote in favor of the package shortly after the House approved the bills.

The force was certainly with renewables.

**Under the legislation, the 30 percent Investment Tax Credit (ITC) for solar will be extended for another three years. It will then ramp down incrementally through 2021, and remain at 10 percent permanently beginning in 2022.**

The 2.3-cent Production Tax Credit (PTC) for wind will also be extended through next year. Projects that begin construction in 2017 will see a 20 percent reduction in the incentive. The PTC will then drop 20 percent each year through 2020.

[Denmark, Germany and the Netherlands Want to Build an Island Hub to Support 100GW of Offshore Wind](#)

Also included were geothermal, landfill gas, marine energy and incremental hydro, which will each get a one-year PTC extension. Those technologies will also qualify for a 30 percent ITC, if developers choose. In addition, the bill expanded grants for energy and water efficiency.

Business groups and analysts say the extensions will support tens of billions of dollars in new investment and hundreds of thousands of new jobs throughout the U.S.

"There's no way to overstate this -- the extension of the solar ITC is the most important policy development for U.S. solar in almost a decade," said MJ Shiao, GTM's director of solar research.

According to GTM Research, the ITC extension will help spur nearly 100 cumulative gigawatts of solar installations by 2020, resulting in \$130 billion in total investment. More than \$40 billion of investment will be "directly attributable to the passage of the extension," said Shiao.

The American Wind Energy Association expects similar growth. The group did not issue precise figures, but said the PTC extension would support tens of gigawatts of new wind projects through 2020.

The legislation also lifts a 40-year ban on exports of crude oil produced in the U.S. In exchange for lifting the ban, Democrats pushed for multi-year extensions of renewable energy tax credits and demanded that Republicans strip out any riders that would weaken environmental laws.

Both sides got what they wanted.

However, Pelosi publicly worried yesterday that she didn't have enough votes to support the bill. Many Democrats expressed concern about the oil export ban tradeoff, saying it would increase subsidies to fossil fuels and boost carbon emissions.

Congressional leaders and the White House lobbied hard to convince the Democratic base that the bill would be a win for the environment.

"While lifting the oil export ban remains atrocious policy, the wind and solar tax credits in the Omnibus will eliminate around 10 times more carbon pollution than the exports of oil will add," wrote Pelosi in a letter to lawmakers.

Katherine Hamilton, a partner with 38 North Solutions, called the bill "sausage-making at its most intense."

"The product should be palatable for most parties in clean energy. Extensions for renewables and efficiency tax credits were key sweeteners. In addition, clean energy R&D funding, land and water conservation funds, and clean energy funds were included in the deal," she said.

Other independent analysts found that the deal would be a net positive for the climate. Although emissions would increase slightly because of increased drilling activity, they would be easily offset by increasing renewable energy development and decreased coal consumption.

"Our bottom line: Extension of the tax credits will do far more to reduce carbon dioxide emissions over the next five years than lifting the export ban will do to increase them. While this post offers no judgment of the budget deal as a whole, the deal, if passed, looks like a win for climate," wrote Council on Foreign Relations fellows Michael Levi and Varun Sivaram.

The tax credit extensions cap a big month for renewable energy policy.

In early December, world leaders agreed to a framework for lowering global greenhouse gas emissions -- a deal that will leverage hundreds of billions of dollars in private investment for clean technologies.

And earlier this week, California regulators issued a new proposal on net metering that would preserve the retail rate paid to rooftop solar systems. The new rules -- combined with the continued federal tax credit -- will ensure strong activity in the top solar state.

National groups will now likely reset their sights on local battles around the U.S., said Hamilton.

"The renewable energy industries can turn their focus to state and local policies, siting and permitting issues, and compliance strategies for the Clean Power Plan," she said.

President Obama is expected to sign the bill into law today.

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Extracted from - <http://www.latimes.com/nation/la-na-no-solar-20140810-story.amp.html>

## Rules prevent solar panels in many states with abundant sunlight



Solarcity workers Joey Ramirez, left, and Taran Stone install solar modules on the roof of a Long Beach home. (Al Seib / Los Angeles Times)

**Evan Halper** – August 4, 2014

Few places in the country are so warm and bright as Mary Wilkerson's property on the beach near St. Petersburg, Fla., a city once noted in the Guinness Book of World Records for a 768-day stretch of sunny days.

But while Florida advertises itself as the Sunshine State, power company executives and regulators have worked successfully to keep most Floridians from using that sunshine to generate their own power.

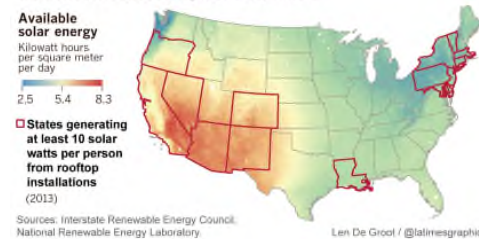
Wilkerson discovered the paradox when she set out to harness sunlight into electricity for the vintage cottages she rents out at Indian Rocks Beach. She would have had an easier time installing solar panels, she found, if she had put the homes on a flatbed and transported them to chilly Massachusetts.

"My husband and I are looking at each other and saying, 'This is absurd,'" said Wilkerson, whose property is so sunny that a European guest under doctor's orders to treat sunlight deprivation returns every year. The guest, who has solar panels on his home in Germany, is bewildered by their scarcity in a place with such abundant light.

Florida is one of several states, mostly in the Southeast, that combine copious sunshine with extensive rules designed to block its use by homeowners to generate power.

States like Massachusetts, New Jersey and New York — not known for clear, blue skies — have outpaced their counterparts to the south in the installation of rooftop solar panels.

### Southern states lag on solar use



While the precise rules vary from state to state, one explanation is the same: opposition from utilities grown nervous by the rapid encroachment of solar firms on their business.

The business models that have made solar systems financially viable for millions of homeowners in California, New England and elsewhere around the country are largely illegal in Florida, Virginia, South Carolina and some other Southern states. Companies that pioneered the industry, such as SolarCity Corp. and Sunrun Inc., do not even attempt to do business there. "We get all kinds of inquiries every day" from the South, said Will Craven, spokesman for SolarCity. "People there want to be our customers."

It has a ton of sunshine, a ton of rooftops. But there is no rooftop solar industry in Florida.— Will Craven, spokesman for SolarCity  
Florida, in particular, is known as the "sleeping giant" of his industry, Craven said. "It has a ton of sunshine, a ton of rooftops," he said. "But there is no rooftop solar industry in Florida."

In South Carolina and Virginia combined, only a few hundred homes have solar panels, according to the Solar Energy Industries Assn. New Jersey has 21,500; California, 234,600.

Under the typical business model for the solar industry, homeowners sign lease agreements with installation companies. The homeowners pay the cost of the panels over time and sell any excess power the systems generate.

Along with tax breaks and other government incentives, the lease agreements have made solar installations increasingly affordable. States where solar thrives typically pay homeowners attractive rates for the excess power they generate and require utilities to get a considerable share of their power from renewable sources. That gives companies an incentive to promote use of solar.

Southern states, several of which cherish low electricity rates afforded by extensive use of coal, typically have far fewer solar incentives.

Several also have rules that specifically discourage homeowners from going solar. In addition to the bans and restrictions on leasing arrangements, some Southern states assess taxes and fees on solar equipment and generation that do not exist elsewhere. When Washington and Lee University in Lexington, Va., installed solar panels a few years ago, for example, the local utility, Dominion Virginia Power, threatened legal action. The utility said that only it could sell electricity in its service area. The university and the solar firm it worked with had to change their lease arrangement and forfeit valuable tax credits.

Soon after, in South Carolina, objections from another utility forced the cancellation of about 80 contracts under which a solar firm had planned to provide panels free of charge to churches and school districts.

The resulting backlash forced a change in the state's law, but a limited one. South Carolina Gov. [Nikki Haley](#) last week signed a bill that directed regulators to establish rules under which leasing would be permitted.

The details still need to be worked out, however, and solar firms worry the rules will be heavily influenced by electric companies that will insist on provisions to discourage installations. For now, many homeowners and businesses that want to install panels are in the same predicament as Wilkerson. Finding no viable option to lease a system in Florida, she is exploring paying cash to buy one outright for three of the cottages she owns. The cost: \$106,000.

Utility officials say the policies inhibiting solar installations result from more than a mere turf battle. Utilities bear the cost of maintaining the power lines, switches and extensive computer networks that make up the electrical grid. How much of a burden homeowners who install rooftop solar systems place on the grid is hotly debated between utilities and environmentalists. "We want to bring on more renewables, but we also want to make sure the cost of electricity stays reasonable," said Randy Wheelless, a spokesman for [Duke Energy Corp.](#), which serves customers in the Carolinas, the Midwest and Florida.

Officials at Dominion Virginia Power say they are moving as aggressively as they can to promote solar in a heavily regulated, fiscally conservative state reluctant to subsidize homeowners who go green.

Nearly two years ago, the company launched a pilot program that mimics the SolarCity and Sunrun models for leasing solar equipment to businesses. So far, two systems have been installed.

"It might sound small," said Dianne Corsello, manager of customer solutions at Dominion, but she says regulators want to see evidence that such programs will not create unreasonable costs for the utility.

"We are studying the impacts and assessing the benefits to our grid," she said. "It is providing an opportunity to get data."

Solar installation firms scoff at such utility programs. Sunrun Vice President Bryan Miller calls the Dominion rooftop effort "a make-believe program" designed for public relations, not to entice customers to install panels.

Back in South Carolina, solar advocates were pleased last week to see the governor sign the new law loosening restrictions on the industry, but were also growing impatient.

"There is so much pent-up demand," said [Blair Holman](#), managing attorney at the Charleston office of the Southern Environmental Law Center. "The sunshine is so obviously abundant. It is 98 degrees here today."

For your reference - the info below was extracted by Arlene Litvin, (856-772-0072) at [http:// pinklady101.com/\\$SolarPanels.htm](http://pinklady101.com/$SolarPanels.htm)

Extracted from – <https://www.sunrun.com/why-sunrun/about/news/press-releases/sunrun-acquires-rec-solars-residential-division-aee-solar-and-snapnrack>

## April 4, 2014

# Sunrun Acquires REC Solar's Residential Division, AEE Solar and SnapNrack

## Leading Solar Service Provider Expands Capabilities to Bring Affordable Home Solar to More Consumers

[Sunrun](#) and Mainstream Energy Corp. today announced that Sunrun has acquired the residential division of REC Solar, AEE Solar and SnapNrack. The companies represent Mainstream Energy's residential solar sales, design and installation; wholesale distribution; and mounting systems and hardware businesses, respectively. In the commercial market, REC Solar will continue as an independent organization under the legal name REC Solar Commercial Corp. The value of the transaction was not disclosed.

'Sunrun pioneered solar service to remove the most significant barriers to going solar. We continue to innovate our business to further drive down costs, increase quality and broaden our reach to consumers so more homeowners have access to affordable home solar,' said Lynn Jurich, Chief Executive Officer of Sunrun. 'The residential solar market is growing rapidly and this acquisition marks the next step in our multi-channel growth strategy. REC Solar's residential division, AEE Solar and SnapNrack complement our thriving channel business and further enable us to fulfill the enormous market potential for home solar nationwide.'

REC Solar is a national leader in solar electric system design and installation, with more than 11,000 customers across seven states. Since becoming Sunrun's first installation partner in 2007, REC Solar has helped thousands of homeowners elect solar energy with Sunrun's solar service, which allows homeowners to pay a low rate for clean energy and fix their electric costs for 20 years.

'REC Solar is the industry leader in customer satisfaction and high quality construction, while AEE Solar and SnapNrack bring capabilities that allow us to make solar energy affordable for more consumers, provide superior systems and service, and lay the foundation to become a major energy company,' Jurich said.

Under the terms of the acquisition, Sunrun will expand its executive leadership team. Lynn Jurich will lead the company as Chief Executive Officer, while co-Founder Ed Fenster will continue in his operating role under the new title of Chairman. Tom Holland assumes the role of President and will guide the company's strategy and execution. Mainstream Energy CEO Paul Winnowski joins Sunrun as Chief Operating Officer and Timothy Ball, Chairman of Mainstream Energy Corp., will join Sunrun's board of directors.

'Mainstream Energy and Sunrun have always been perfectly aligned in focusing on customers, maintaining high quality and driving down costs,' said Paul Winnowski, CEO of Mainstream Energy Corp. 'Combining our capabilities deepens our relationship and strengthens our shared vision for greater adoption of home solar by more families across the country.'

### About REC Solar, Inc. (Residential)

The Residential division of REC Solar, Inc., a subsidiary of Mainstream Energy Corporation, is a national leader in residential solar electric system design and installation with a local presence in all major solar markets in the U.S. By providing innovative products, efficient processes and integrated services, REC Solar's residential solar solutions deliver high-quality systems while lowering the cost of solar power for all. In 17 years of business, REC Solar has installed more than 11,000 homeowner systems nationwide.

### About AEE Solar

AEE Solar is one of the nation's leading distributors of solar products, with more than 30 years of history, supplying a full suite of products and services to large and small solar PV installers nationwide since 1979. For more information, visit [AEEsolar.com](http://AEEsolar.com) or call 800-777-6609.

### About SnapNrack

SnapNrack, a division of Mainstream Energy Corporation, is a leading manufacturer of solar panel racking systems, with more than 250 megawatts (MW) deployed across the U.S. SnapNrack offers a full suite of PV mounting systems for residential and commercial customers, featuring fast and elegant solutions for any roof or ground project. For more, visit [SnapNrack.com](http://SnapNrack.com) or call 805-540-6999.

Sunrun pioneered solar as a service, a way for homeowners to go solar without a significant upfront investment, and is the largest dedicated residential solar company in the U.S. Sunrun provides end-to-end service for homeowners to choose clean, solar energy and receive predictable pricing for solar energy for 20 years. The company designs, installs, finances, insures, monitors and maintains the solar panels on a homeowner's roof, while families pay just for the electricity at a lower rate than their current utility. Since Sunrun introduced solar as a service in 2007, it has become the preferred way for consumers to go solar in the national top solar markets.



## Learn how to put the Sun's Power to Work in Your Home



By: **Arlene E. Litvin** at Braddock Preserve @ Winslow  
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April 1, 2014

Below is some information from the Web concerning residential solar panels that you might find both informative and interesting.

Have you considered alternative energy? Here are reasons why you should

- Pay less for electricity today and your savings can grow over time as utility rates continue to increase.
- An ever-rising electric bill is powerful motivation to consider adding an alternative-energy system to your home. Solar is the most viable alternative for most homeowners.
- Solar energy is an infinitely renewable resource that uses the sun's rays to generate electricity for use in your home. By going solar, you can reduce your energy costs and also lower your dependence on fossil fuels, thereby making your own contribution to a cleaner environment.
- A residential solar-energy system uses solar modules, made up of photovoltaic (PV) cells, to harvest the sun's energy and convert it into electricity that can be used to power your lights, appliances and other electrical devices in the home.
- A grid-tied system is the most common and least expensive of all residential solar systems. It allows you to use your own solar-generated electricity to save energy and reduce costs. At times when the PV system isn't producing electricity, such as at night, electricity is provided by the utility company's grid, or network of power stations.
- One of the benefits of a grid-tied system is that any excess electricity produced by your solar system can be fed back to the grid through a process known as net metering. With net metering Atlantic City Electric will replace your meter at no cost to you, so that when you use electricity from the grid your meter spins forward. The less electricity you use from off the grid, the slower your meter spins. Even better, when you are feeding electricity back to the grid, your meter spins backwards!
- Many people who invest in a solar-energy system assume that they no longer have use for their electric meter or the company that formerly supplied their power. This is a mistake for two reasons.  
First –
  - There may be times when your solar power generation does not meet your needs if your power consumption increases for some reason.
  - Of course, solar panels keep performing during the colder season. Solar cells produce electricity when exposed to sunlight and, in fact, are more efficient in colder temperatures. Therefore, as long as the sun is shining, a solar electric system will continue to produce electricity. If you're still hooked up to the grid, traditional retail electricity can fill the gaps.Second –
  - If your system generates more electricity than you need, your electric company will actually buy the excess power from you at competitive rates. Note, however, that you will have to install a net metering system in order to feed power back into the grid.
- Explore the different ways to obtain them – lease or purchase.

Hope you found this both informative and interesting.

**See you all in the neighborhood.**

**If you are interested in Solar Panels – please feel free to contact me at 856-772-0072.**

**NOTE - Anyone signing up through me, especially those in a HOA and all their paperwork requirements - I will help you with your paperwork to make the process as painless as possible at no cost to you.**