

AUGUST 2020

THE STATE OF ROOFTOP SOLAR IN FLORIDA



**SOLAR UNITED
NEIGHBORS**



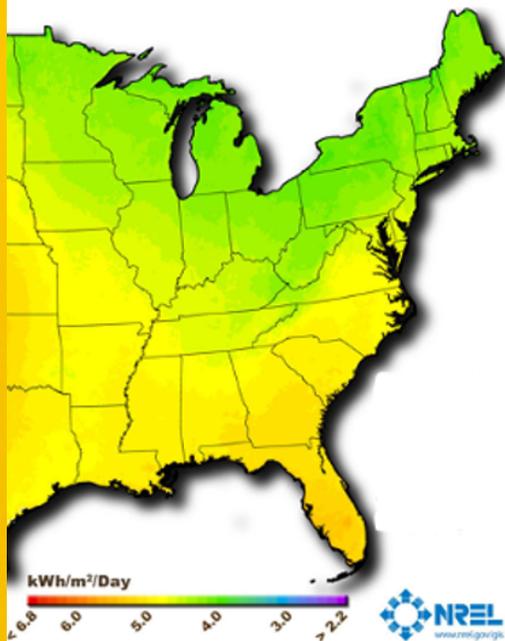
VOTE SOLAR





Michael, Betsy and Samantha went solar in 2015 at their Orlando, Florida home.

Solar PV Resource



The Sunshine State is a natural fit for rooftop solar energy. Florida's solar resource potential ranks highest on the East Coast, enough to easily meet all of the state's electricity needs. Despite the great resource, Florida has not been at the forefront of solar energy adoption to date. This report, co-authored by Vote Solar and Solar United Neighbors, lays out the facts about Florida's emerging solar market, focusing on a cornerstone rooftop solar policy called "net metering."

WHAT IS “NET METERING” AND WHY DOES FLORIDA HAVE IT?

Florida has enacted legal safeguards for homeowners with rooftop solar. They govern how utilities should treat customers’ solar investments. Without these protections, monopoly utility companies can penalize Floridians who go solar in order to protect their profits.



Image: US Department of Energy

One of the most important protections in Florida law is net metering. Net metering allows families and businesses to get credit for the energy produced from their solar panels. If their panels produce more energy than the household is using at a particular moment, the extra energy flows onto the grid. Their utility sells this electricity to their neighbors. The solar owner gets a credit on their utility bill. When the solar panels do not produce all the energy a homeowner needs, they can buy energy from the utility company. The homeowner can use the credit they’ve banked from net metering to offset the cost of this purchase, similar to rollover minutes on your cell phone. Net metering is a popular, proven policy used in 47 states.

"Ultimately it's a question of choice and sovereignty -- net metering is an important market option that helps Floridians to manage our electricity usage the way we want."

George Riley, State Director, Conservatives for Clean Energy

The Florida legislature unanimously enacted solar net metering as part of broad energy reforms passed in 2008 (H.B. 7135). It did so to help diversify fuel types to address Florida's growing dependency on natural gas for electric production, minimize the volatility of fossil fuel costs, encourage investment within the state, reduce health-harming pollution, and make Florida a leader in new and innovative technologies. This bill was sponsored by Rep. Stan Mayfield (R) and Rep. Paige Kreegel (R), a self-described free market Republican. Then-Republican Governor Charlie Crist signed the bill. He touted its support for renewable energy and called it the "most comprehensive energy and economic development policy in the history of our state."¹

Florida's net metering law did not cap the number of rooftop solar customers that were eligible to participate.

"By making it more attractive for customers to use renewables, we are promoting fuel diversity and reliability and increasing development of renewable generation in Florida. Today's approval will encourage eligible customers to reduce the electricity purchased from their utility – saving money for the customer and increasing grid capacity for the utility."

*PSC Chairman Matthew M. Carter II in 2008, when NEM rules were adopted.*²

"The benefits of solar energy. . . reach far beyond [the] rooftop, sending renewable energy back to the electric grid and decreasing the utility's need for fossil fuels."

*Commissioner Lisa Edgar, 2011*³

"As more and more consumers benefit from the PSC's net metering rules, Florida's economy and environment are also reaping rewards. Increased use of renewables helps create jobs within the industry, diversify Florida's fuel supply, and reduce greenhouse gas emissions."

*PSC Chairman Ronald A. Brisé, 2012*⁴



"I am a rural home owner, engineer, and farmer in the Florida Panhandle where I have installed a significant solar system (21 Kw) to provide primary power to my home and farm. I did this due to having numerous, sporadic power outages over the years from hurricanes and bad weather. It also gives me the opportunity to contribute to the community my excess generated power... This power system is a significant portion of my retirement strategy, and if it is removed from my control, my potential retirement will suffer immeasurably."

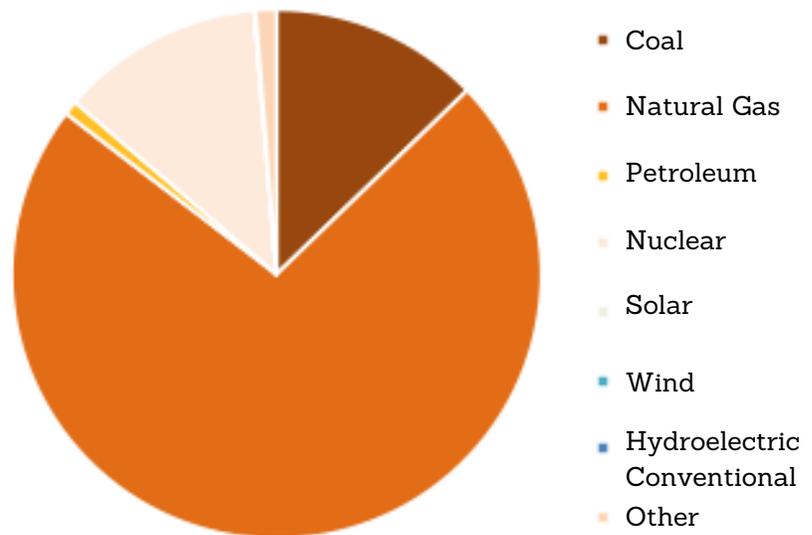
Frank Borsi, Baker, FL

PUTTING FLORIDA'S ROOFTOP SOLAR ECONOMY IN CONTEXT

How much does solar from Florida utility customers' rooftops contribute to Florida's energy economy?

In 2018, solar power of all kinds constituted just under 1% of all energy generated in Florida. Gas generation, the largest source by far, accounted for more than 70 times the energy of solar.⁵

Share of generation, Florida, 2018



Data source: EIA

As costs for solar panels have continued to fall, solar's role on America's grid has grown. While Florida's solar share grew to one percent, other states have made even bigger strides -- so much so that today, Florida's total solar energy share is below the national average. Florida's neighbors in the Southeast, like North Carolina and Georgia, generate a substantially higher portion of their electricity from solar.

Solar as a percent of all electricity generated in 2018, Selected States

California	14.00%
Vermont	4.90%
North Carolina	4.55%
Georgia	1.54%
U.S. Average	1.53%
Florida	0.99%

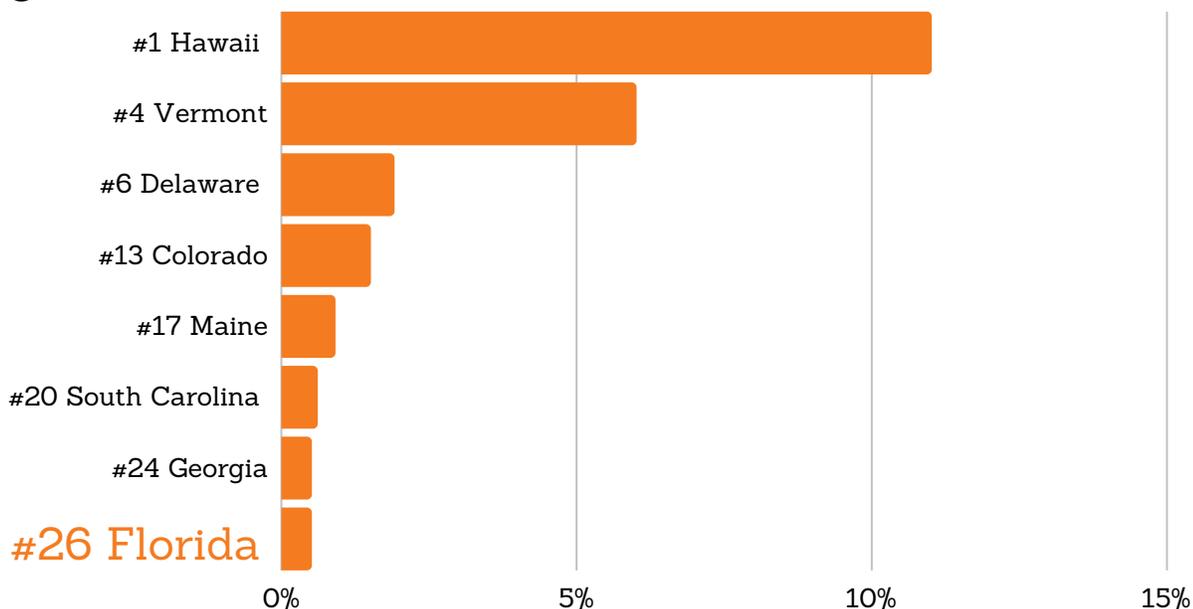
Data source: EIA

Customer-sited rooftop solar represents just one segment of the total solar market, which also includes community and utility-scale projects. In 2019, the Florida Public Service Commission reported that almost 60,000 Floridian households and businesses had gone solar, installing over 507 megawatts. That's just over half a percent of all Florida's electric customers. The Commission data also show that solar owners import more energy than they export back to the grid every year - meaning that even after adding solar, these customers continue to purchase electricity from the grid, similar to other energy conservation technologies.

In terms of rooftop solar's penetration on the grid, Florida ranks 26th in the country. Florida has only a fraction of the amount of rooftop solar generation compared to Massachusetts, California, Vermont, Arizona, and Maryland, to name a few.⁶ Florida is behind the curve on rooftop solar adoption, but we are beginning to see market growth. Florida installed 62% more residential solar in 2019 than the previous year.



Rooftop solar as a percentage of all generation, 2018



Data source: EIA

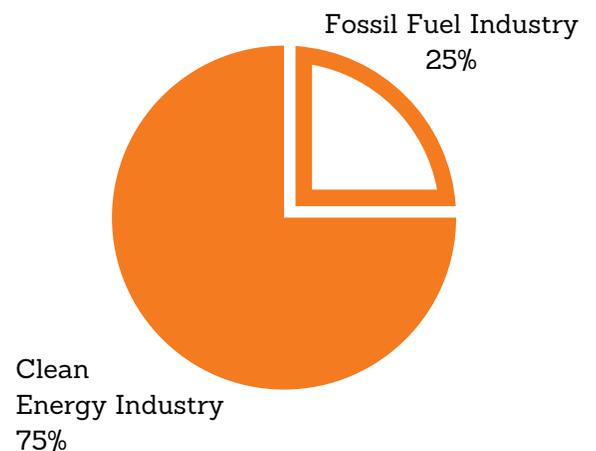
SOLAR IS HELPING TO BUILD A RESILIENT AND THRIVING FLORIDA

Solar power is a foundational energy resource for the future, but its benefits extend far beyond the grid. When cities and states embrace solar power, they receive a powerful engine for economic development as well as an added layer of resilience during storms and outages. And importantly, when homes and businesses decide to go solar, these benefits extend to their neighbors.

Economic value: Driving jobs and savings, while reducing risk

Prior to COVID's economic disruption, Florida's solar economy was growing, thanks mostly to utilities' large scale solar projects as well as the recent uptick in new residential solar systems. Florida led the nation in new solar jobs in 2019,⁷ with more than 12,200 solar workers in 434 homegrown companies.⁸ Florida is expected to rank 3rd for solar growth over the next 5 years, anticipating over 8 GW of more solar. This is part of a broader trend unfolding across the United States as clean energy jobs continue to grow. Clean energy jobs already outnumber fossil fuel jobs three-to-one.⁹

Where should Florida prioritize COVID-19 stimulus funds?



Data source: George Mason University

The benefits of increased solar activity spread across the economy. To date, solar projects have contributed \$6.6 billion into the Florida economy.¹⁰ This stands in stark contrast to the \$5 billion Floridians send out of state every year to pay for natural gas imports.¹¹ Florida's utilities are over-reliant on gas. They get 70 percent of all electricity from burning gas - double the national average of around 35 percent. Prioritizing rooftop solar will save customers money on their bills. It will also result in a more diversified electricity mix. This reduces risks of disruption in the gas supply chain, pipelines, and volatile fuel prices.

As we live through the COVID-19 pandemic and suffer from the economic fallout, now is not the time to stop a thriving economic engine. Florida's clean energy industry is not immune, having lost nearly 30,000 jobs in March and April alone.¹² Investing in clean energy projects is a tried and true path for revitalizing the economy that has created jobs in the past, and can put Floridians back to work again today. In fact, 75 percent of Americans polled by George Mason University agree that clean energy investments should be prioritized over fossil fuel bailouts in a COVID-19 response package.¹³

Florida is on its way to building a thriving clean energy economy, with a growing number of high-quality local jobs. But policies that hurt solar workers and ratepayers who choose to go solar will blunt these benefits, exacerbate the state's unemployment numbers, and result in spending even more money on out-of-state fossil fuels.



Resilience Value: Powering Resilient Households



Solar projects carry two unique characteristics: First, they require no fuel, and second, they are located close to the energy user. Solar-powered systems with backup energy storage can continue to provide critical services, even when the broader electric grid isn't working. This makes them a crucial part of resilient communities. And, as energy storage technologies continue to proliferate, the power that solar provides can be spread over more hours of the day.

Resilient power is vital to healthy and safe communities in Florida. Tropical storms batter Florida coasts each year.

They can cause extended electricity shut offs. When Hurricane Michael hit in 2018, 182,000 customers remained without grid power for over a week.¹⁴ For older or medically vulnerable residents, any power outage can precipitate a crisis. And this is particularly important for the Sunshine state. Florida has the highest percentage of senior citizens in the U.S. It has the second highest number of Medicare recipients that are electricity-dependent due to medical conditions -- over 169,000 people.¹⁵

When households and institutions like schools, hospitals, and nursing homes get access to solar and backup energy storage, they're able to provide essential services to their community, even during an emergency. With the right policies in place, those systems are cost-effective.¹⁶ In the midst of increasingly extreme weather events, solar power paired with storage can be a lynchpin for reducing climate vulnerability in Florida.

Florida's largest utility, Florida Power and Light has almost 4.4 million residential customers. And as of 2019, only 552 of those customers had solar + battery storage systems on their homes. We can do more to protect our residents from the dangers of power outages. Solar + battery systems are the clean and safer alternative to diesel generators. Nationwide, these generators cause 20,000 emergency room visits and 80 deaths each year from carbon monoxide poisoning.¹⁷ Net metering is one of the most important policies enabling customers to invest in these energy secure systems for emergency back-up power.



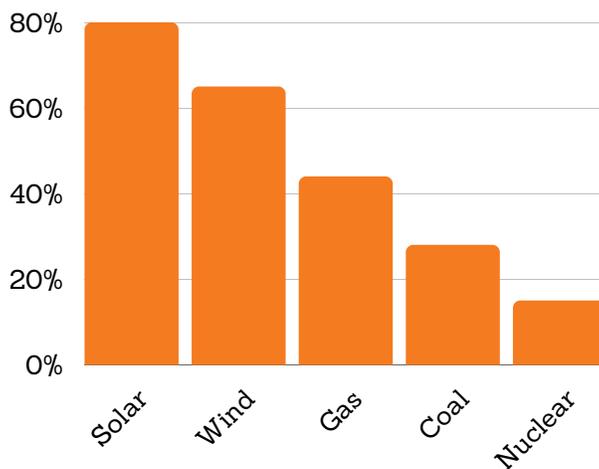
"In my neighborhood in Apalachicola, my house is often the only one that still has electricity when outages occur. Thanks to my solar-plus-battery storage system, my home can power itself without fully depending on our utility company. Before regulators move forward with any action on net metering, I encourage them to look for input from those of us who have seen the benefits of net metering and home solar. I'll be happy to tell them - and so will the neighbors in Bonifay who enjoyed my electricity during the weeks our neighborhood went without power back in 2018."

Kathy Kirkland, Apalachicola, Florida

FLORIDIANS ARE UNITED IN SUPPORT OF SOLAR

With all of the benefits outlined above, it's no surprise that Floridians from all walks of life want to see solar power grow in their state. When Conservatives for Clean Energy surveyed Floridians in 2019, they found overwhelming support for solar power: It was the power that deserved the most emphasis in the future across every demographic surveyed, from right, left, and independent voters.¹⁸ Seventy-seven percent of respondents said that solar power should receive more emphasis than it has currently gotten.

Where to put more emphasis on Florida's energy production?

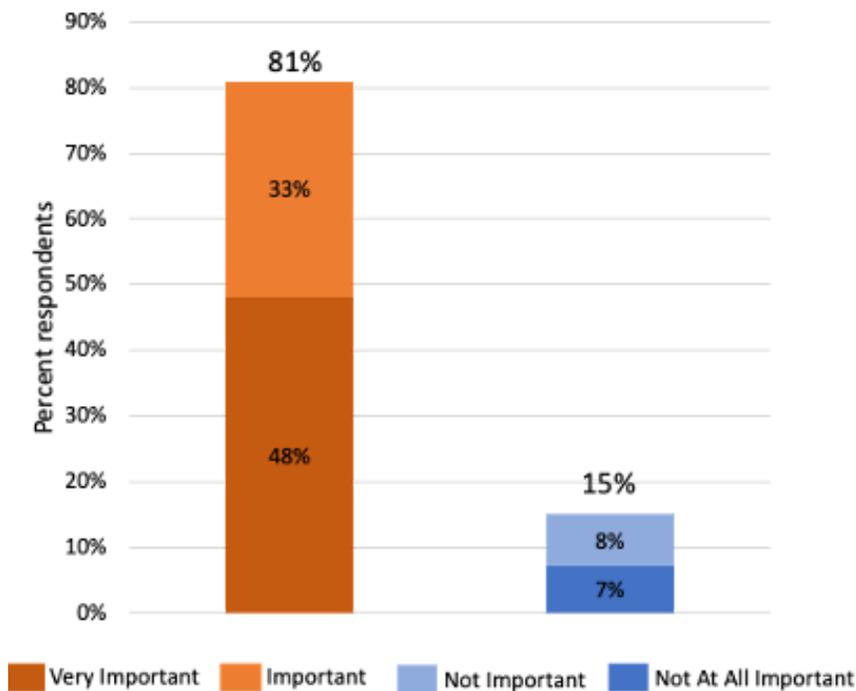


Data source: Conservatives for Clean Energy

"Florida-grown, home-powered rooftop solar grows our economy, creates local jobs that can't be outsourced, and helps families control their electric bills. That's why the legislature unanimously decided in 2008 to protect solar rights. Those rights still need and deserve protection today."

*Katie Chiles Ottenweller
Southeast Director, Vote Solar*

How important are net metering policies?



Data source: *Conservatives for Clean Energy*

That same sentiment extended to the policies that drive rooftop solar power in Florida and across the country. When respondents were asked about net metering, almost half of respondents called the policy “Very Important” with 81 percent of respondents saying the policy was either “Important” or “Very Important.”

“Even though I do not have solar in my home, I support solar rights for all those who do. I’m so grateful that people around the country are shifting to clean, renewable energy sources. Putting up roadblocks to thwart that progress is a terrible idea.”

Floridian Jen Underhill

Solar's popularity among Floridians, coupled with Florida's low adoption to date and the myriad benefits of the resource, all help to explain why the Florida Public Service Commission has continued to act to ensure that rooftop solar can grow in the Sunshine State.

The Commission recently reaffirmed its net metering policy in 2019, finding that "the installation of demand-side renewable energy systems continues to grow without any utility incentives," indicating that the net metering program "is an effective means of encouraging the development of demand-side renewable energy systems that allow participants to offset their energy usage."¹⁹ The Commission continues to rely on net metering to satisfy its dual statutory obligations to promote renewable energy under both FEECA (Florida's efficiency statute) and the net metering statute.

But recently, the Commission has expressed its intention to revisit this landmark solar policy, raising questions about whether net metering will continue in the Sunshine State.



Agustin and Mildred Castro have solar panels on their Kissimmee, Florida home

WHAT'S FAIR FOR FLORIDA'S RATEPAYERS?

Despite the community benefits and popularity of solar, some actors are painting solar customers with a broad brush. They accuse them of being bad citizens. These complaints are most often heard from investor-owned utility companies. They would prefer their customers have fewer options for generating their own power. It's important to set the record straight on these issues.

What's the right amount of solar on the grid?

Opponents of solar power often attempt to paint the natural, predictable variability of solar power as a fundamental departure from how the grid works. This ignores that grid operators match varying generation (from all sources) and demand (from all users) at the same level, twenty-four hours a day. The addition of solar power does not fundamentally change the job of grid operators.

Nevertheless, it can be helpful to take stock of other places where solar provides a much larger portion of overall electricity with no issue. As we noted above, Florida's solar penetration is below the national average for the country, which has had no change in reliability. When National Renewable Energy Laboratory scientists looked at the operation of the grid with renewable energy providing 30 percent of the grid's needs – thirty times that of Florida – they found that grid operation continues to work as intended, with little changes to the system.²⁰ Over the course of 2018, 18 percent of Texas's energy came from wind and solar, and at their highest point, wind and solar met 54 percent of Texas's energy needs. Across the Southwest Power Pool, grid operators integrated an average of 28 percent variable renewable energy in 2018.²¹

What's driving rates up?

As rates for electricity continue to increase in Florida and across the country, some utilities unfairly blame rate increases on solar adopters. Researchers at the Lawrence Berkeley National Lab sought to better understand the role of distributed solar power in electricity rates. They found that the influence of distributed solar is negligible on the grid, and may well actually improve electricity rates. This is because of the value solar brings to the grid – especially at 10 percent solar penetration. (Florida rooftop solar adoption is only at 0.5 percent penetration today). In contrast, new capital investments in expensive gas transmission and generation and unnecessary grid upgrades will substantially increase rates for all customers (by up to as much as 20 percent in Florida) between now and 2030.²²



"As our homes have become our sanctuaries, local solar has given people peace of mind financially and enabled them to safeguard their families against the increasingly unreliable and unpredictable electricity grid."

José Murphy, disabled veteran and Florida solar homeowner



Rene and Julia added solar to their home in Pinecrest, Florida in 2018.

Do customers owe utility companies any more than what they pay?

Electric utilities and their special interest groups try to argue that ratepayers who choose to go solar are somehow not paying their fair share when they pay their monthly energy bill. This claim is confusing because for all customers, the energy bill is our only way to know how much we ‘owe’ the utility company.

Even in 2008, when there were only 200 rooftop solar customers in Florida, utilities were complaining to regulators of “substantial subsidies” being provided to these customers.²³ Often, utilities assume that they are entitled to some portion of the lost revenues that they *could* have received if a customer hadn’t installed solar. This would be similar to utilities trying to charge you extra because you installed energy efficient light bulbs or went away for the weekend. Utilities are not entitled to guaranteed profits from customers -- and such monopoly abuses are why net metering protections were created in the first place. The appropriate question is whether rooftop solar customers are paying what it costs to actually provide them electric service - a question that has been answered in the affirmative time and again.²⁴

"Florida utilities have a monopoly. We have little choice over where our electricity comes from or what it costs. Net metering gives us more control over our energy usage."

Angela DeMonbreun, Regional Field Director, Solar United Neighbors

Fairness means giving customers control.

One of the fundamental, guiding principles of our electricity grid since it was founded is the concept of freedom and independence for users: Customers should be free to do what they want to manage their electricity usage without undue interference by a monopoly utility. When opponents say solar customers are 'shifting' costs by choosing to manage their solar power in the way they choose, they erode customer choice. Like solar, energy-efficient homes and businesses are a win-win-win for customers, the economy, and the environment, despite the fact that these technologies decrease utility revenue.

Fairness means more energy access, not less.

To date, solar has not been as easily accessible to our most vulnerable neighbors and community members. Solar adoption is growing among middle-income families due to decreasing technology costs and expanded financing options in the market, with 61 percent of rooftop solar adopters having annual incomes below \$100,000.²⁵ But only a quarter of solar adopters have incomes below the area median income. This means low-income families who are most in need have yet to gain equal access to the solar technologies that will lower their energy bills. Net metering is an important way to defend the rights of those who wish to go solar, but it's only a partial solution for ensuring that all Floridians have the ability to go solar if they wish. A more fair energy system should seek to expand the ability for Floridians to become solar households.

Fairness means customers choosing how the grid operates for themselves.

Over 60,000 Florida homeowners and businesses have invested in rooftop solar to date, giving them a unique stake in the future of this policy. Regrettably, customers' needs and interests are often overshadowed by the outsized influence of regulated utility companies. This can be especially true when regulatory processes aren't set up in a way that clearly affords opportunities for public participation, input and meaningful engagement. Crowding out citizens from making their voices heard about how their grid should work clouds decision-makers' perspectives on what policies are truly in the public interest. Expanding the discussion to include the voices of all impacted customers will make our grid more accessible, freer, and fairer.

"We need to make solar and wind energy more attractive, not less attractive in order to insure a future for my kids and grandkids."

Retired Florida firefighter and solar homeowner Jerry Buechler

"I am a single mother who several years ago took out a loan to install solar panels on my house. I invested in my home and in the environment and renewable energy."

Jordan Levin, Florida solar homeowner

"I would never have been able to make utility payments had it not been for the net metering program here in Florida."

John Eftimiades, Florida solar homeowner

A WAY FORWARD FOR FLORIDA

A Transforming Grid

We are going through an unprecedented period of transition in the way that we generate, distribute, and consume electricity. On the supply side, clean, renewable energy technologies are increasingly outcompeting conventional generation on cost alone.²⁶ On the demand side, customers have become more sophisticated than ever before in the way they consume electricity. The rise of electric vehicles, for example, could upend conventional expectations about when energy is needed and how much we'll need in the coming years.

An even more fundamental change is coming to how we think about our energy grid. Every day, more corporations, institutions, and households announce their commitments to a zero-carbon energy economy.

We're also becoming more aware that clean, distributed energy will provide support for our most vulnerable communities as heat waves and tropical storms continue to intensify.

The fact is, the conventional way of thinking about, planning for, and operating the grid is becoming out of sync with the needs of a 21st century energy infrastructure. In a time of transition, we should be more focused than ever on customer choice, and ensuring that every stakeholder has an opportunity to have their voice heard.



A Path Forward for Rooftop Solar

There is no doubt that rooftop solar will play a major role in that 21st century grid. It is a versatile, cheap, clean, and resilient power source. Rooftop solar will be foundational to the modern grid. When electric utilities inevitably seek to curtail rooftop solar through policy changes, we encourage policymakers to be thoughtful and deliberate when engaging in these often contentious debates. Below are several core principles that will guide a fair and productive conversation:

- Everyone gets a seat at the table. Any policy conversation about rooftop solar should be open to every member of the public, with opportunity for both written and oral comments. Customer voices and perspectives should be front and center.
- Put customers first. The chief concern of policymakers should be protecting and empowering customers' choices. Customers' ability to control their electric usage in their own homes through technology investments should always be protected. Where utilities' profit-making incentives are out of sync with customer value, be it related to solar, energy efficiency or other technologies, those incentives should be re-aligned to match modern customer needs.
- Gather all relevant information. A series of transparent, data-rich and robust technical workshops and collaborative stakeholder processes should form the backbone of any discussion of rooftop solar policy, and must precede any rulemaking process. Utilities should be required to gather and share data on solar adoption, solar customer usage patterns, cost of service information, and other key information that will equip all stakeholders to rely on hard facts, not overused talking points. This open, pre-litigation process has been critical to helping find common ground in other states.
- Understand the role of new technologies. Rooftop solar is at the vanguard of a long list of emerging technologies, including battery storage, electric vehicles, smart homes, and other distributed energy resources. Any discussion of rooftop solar should consider the interplay of these other technologies in terms of both customer engagement and grid value.

ENDNOTES

1. South Florida Business Journal, (2008, June). "Crist signs energy bill, FP&L plans solar projects. Retrieved at: <https://www.bizjournals.com/southflorida/stories/2008/06/23/daily24.html>.
2. Florida Public Service Commission, (2008, September). "PSC Approves Net Metering Interconnection Agreements." Retrieved at: <http://www.floridapsc.com/Home/NewsLink?id=437>.
3. Florida Public Service Commission, (2011, October). "PSC Commissioner Lisa Edgar Observes Net Metering in Action for Energy Awareness Month." Retrieved at: <http://www.floridapsc.com/Home/NewsLink?id=821>.
4. Florida Public Service Commission, (2012, June). "Customer-Owned Renewable Energy Continues to Grow in Florida." Retrieved at: <http://www.floridapsc.com/Home/NewsLink?id=911>.
5. Vote Solar (2020, July). The Costs & Risks of Florida's Dependence on Natural Gas. Retrieved at: https://votesolar.org/files/3115/9441/6366/The_Costs_and_Risks_of_Floridas_Dependence_on_Natural_Gas_-_FINAL.pdf.
6. United States Energy Information Administration (US EIA) Form 861.
7. Ward, B., (2020, February). "Florida added almost 2,000 solar jobs last year, the most in the nation." Tampa Bay Business Journal. Retrieved at: <https://www.bizjournals.com/tampabay/news/2020/02/24/florida-added-almost-2-000-solar-jobs-last-year.html>.
8. Solar Energy Industries Association (SEIA), (2020, August). Florida Solar. Retrieved at: <https://www.seia.org/state-solar-policy/florida-solar>.
9. Marcacci, S., (2019, April). "Renewable Energy Job Boom Creates Economic Opportunity as Coal Industry Slumps." Forbes. Retrieved at: <https://www.forbes.com/sites/energyinnovation/2019/04/22/renewable-energy-job-boom-creating-economic-opportunity-as-coal-industry-slumps/#c9bcb1536654>.
10. SEIA.
11. Ottenweller, K. C. (2020, July). "More than \$5 billion flees Florida's economy every year to pay for out-of-state fossil fuels." Vote Solar. Retrieved at: <https://votesolar.org/usa/florida/updates/more-5-billion-flees-floridas-economy-every-year-pay-out-state-fossil-fuels/>.
12. This includes energy efficiency and renewable energy jobs. Source: BW Research Partnership, (2020, May). "Memorandum: Clean Energy Employment Initial Impacts from the COVID-19 Economic Crisis, April 2020." Retrieved at: <https://e2.org/wp-content/uploads/2020/05/Clean-Energy-Jobs-April-COVID-19-Memo-FINAL.pdf>
13. ClimateNexus Polling, Yale Program on Climate Change Communication, George Mason University Center for Climate Change Communication. (2020, April). National Poll Toplines. Retrieved at: <https://climatenexus.org/wp-content/uploads/2015/09/Coronavirus-National-Poll-Toplines-and-Crosstabs-FINAL.pdf>.

14. Clean Energy Group (2019, April). Resilient Southeast: Exploring Opportunities for
15. Solar + Storage in Miami, FL. Retrieved at: <https://www.cleaneenergy.org/wp-content/uploads/Resilient-Southeast-Miami.pdf>.
16. US Department of Health and Human Services (2020, August). HHS emPOWER Map 3.0. Retrieved at: <https://empowermap.hhs.gov/>.
17. Clean Energy Group.
18. Churchill, S., (2020, February). Resilient Clean Energy for California. Vote Solar. Retrieved at: <https://votesolar.org/usa/california/updates/resilientca/>.
Public Opinion Strategies, (2019, April). Florida Clean Energy Survey. Retrieved at: <https://www.cleaneenergyconservatives.com/wp-content/uploads/2019/02/Florida-Clean-Energy-Survey.pdf>
19. Florida Public Service Commission, (2019, November). Final Order Approving Numeric Conservation Goals. Docket Nos: 20190015-EG, 20190016-EG, 20190017-EG, 20190018-EG, 20190019-EG, 20190020-EG, 20190021-EG. Retrieved at: <http://www.floridapsc.com/library/filings/2019/11134-2019/11134-2019.pdf>.
20. Kroposki, B., (2018, December). Integrating High Levels of Variable Renewable Energy into Electric Power Systems. National Renewable Energy Laboratory. Retrieved at: <https://www.nrel.gov/docs/fy17osti/68349.pdf>.
21. National Renewable Energy Laboratory, (2020, February). 2018 Renewable Energy Grid Integration Data Book. Retrieved at: <https://www.nrel.gov/docs/fy20osti/74823.pdf>.
22. Barbose, G., (2017, January). Putting the Potential Rate Impacts of Distributed Solar into Context. Lawrence Berkeley National Laboratory. Retrieved at: <https://emp.lbl.gov/sites/default/files/lbnl-1007060.pdf>.
23. Florida Power & Light, Gulf Power, Progress Energy Florida, and Tampa Electric Company, (2008, January). Comments of Investor-Owned Utilities. Docket No. 070674-EI. Retrieved at: <http://www.floridapsc.com/library/filings/2008/00653-2008/00653-2008.pdf>.
For example, a study commissioned by the California Public Utility Commission found that net metering customers were in fact paying 133% of the costs they generate (Retrieved at: https://s3.amazonaws.com/dive_static/editorial/NEMReportWithAppendices.pdf).
Another study commissioned by the Public Utilities Commission of Nevada found that net metering customers had provided \$36 million of net benefits to non-NEM customers (Retrieved at: http://pucweb1.state.nv.us/PDF/AxImages/DOCKETS_2015_THRU_PRESENT/2016-8/14179.pdf). And the Oklahoma Commission rejected utility attempts to penalize net metering customers after testimony demonstrated that residential DG customers were paying more than the cost to serve them, providing a subsidy to non-DG residential customers, not the other way around. See also Responsive Testimony of Mark E. Garrett to the Corporation Commission of Oklahoma, Cause No. PUD 201500273 (Mar. 31, 2016); Final Order, Corporation Commission of Oklahoma, Cause No. PUD 201500273 (Mar. 20, 2017) (Retrieved at: <http://imaging.occeweb.com/AP/Orders/occ5360859.pdf>);

24. The Alliance for Solar Choice v. Public Service Commission of Wisconsin, Dane County Circuit Court, Case No. 15-CV-153, Final Order (Nov. 20, 2015) (Retrieved at: <http://imaging.occeweb.com/AP/CaseFiles/occ5245850.pdf>) (overturning PSC imposition of demand charges on rooftop solar customers).
25. Lawrence Berkeley National Lab Solar Demographics Trends and Analysis (2018 data) <https://emp.lbl.gov/projects/solar-demographics-trends-and-analysis>
26. Sierra Club, (2019, October). Clean Energy Costs Less than Florida's Gas Addiction. Retrieved at: <https://www.sierraclub.org/press-releases/2019/10/new-finding-clean-energy-costs-less-floridas-gas-addiction>.