THE STATE OF ROOFTOP SOLAR IN FLORIDA

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September 2020
Florida PSC Workshop

A non-profit organization working to make solar a mainstream energy resource across the U.S.

We bring technical expertise, public engagement and policymaker support to drive common sense solar policy at the state level.

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How much solar do we use in the Sunshine state?

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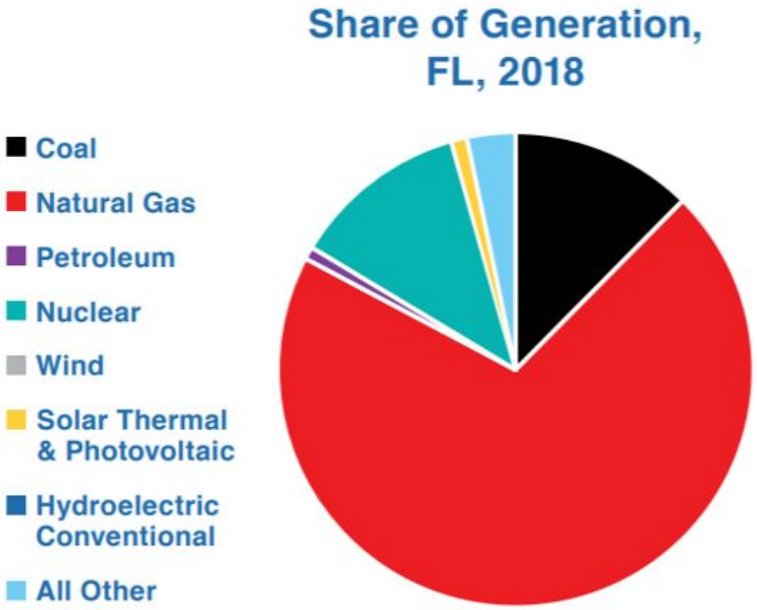
Only 1% of Florida's energy comes from solar

Compared to 70% from gas



Sources: PSC Net Metering Report (2019); U.S. EIA data (2018)

Why is solar good for Florida

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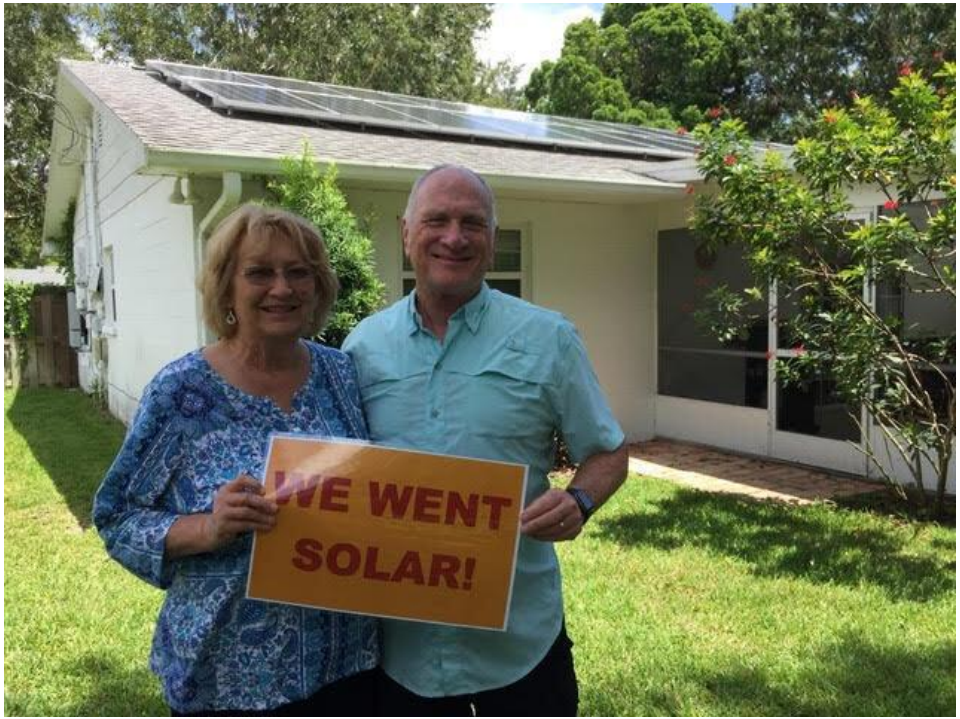
- Keeps our money in the state
  - $5B/year goes out of state for natural gas
- Creates local jobs
  - rooftop solar creates more jobs per MW
- Reduces air pollution
- Lowers carbon emissions
  - closer to load means less emissions
- Improves our ability to survive storms when paired with storage



The Murphys, Lakewood Ranch, Florida

What is net metering?

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Net metering is a popular, proven policy used in 42 states.

It allows families and businesses to get credit for the energy produced from their solar panels.

How much net metered solar does Florida have?

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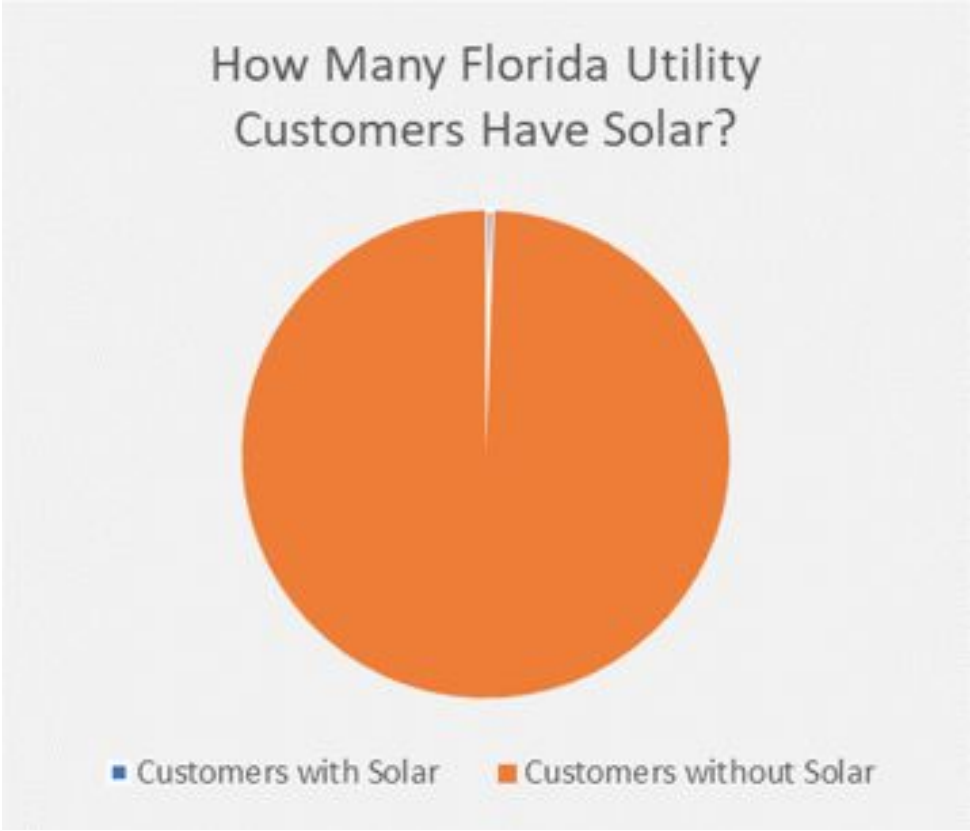
Fewer than 60,000 homes and businesses have rooftop solar – out of 10.6 million total electricity customers in Florida.



Source: FPSC 2019 Net Metering Report, US Energy Information Administration

Is 60,000 systems a lot?

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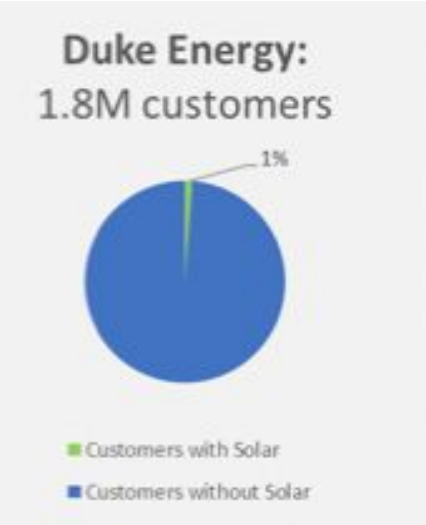

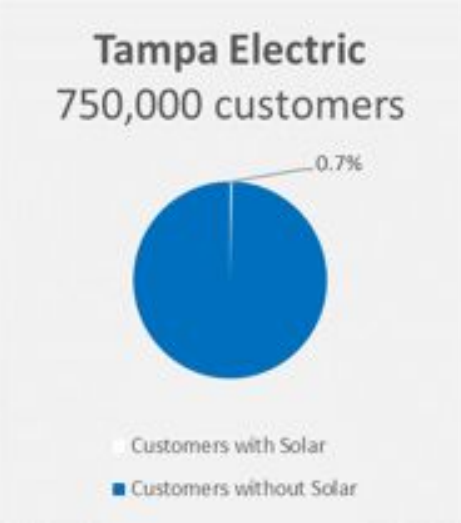

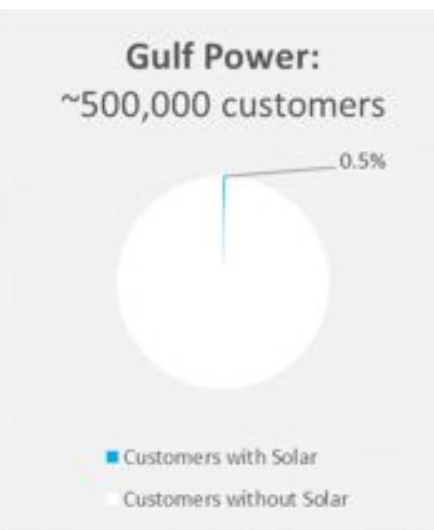

Duke: 1% penetration

Tampa Electric: 0.7% penetration

Gulf Power: 0.5% penetration

FP&L: 0.3% penetration

Source: FPSC 2019 Net Metering Report, U.S. Energy Information Administration

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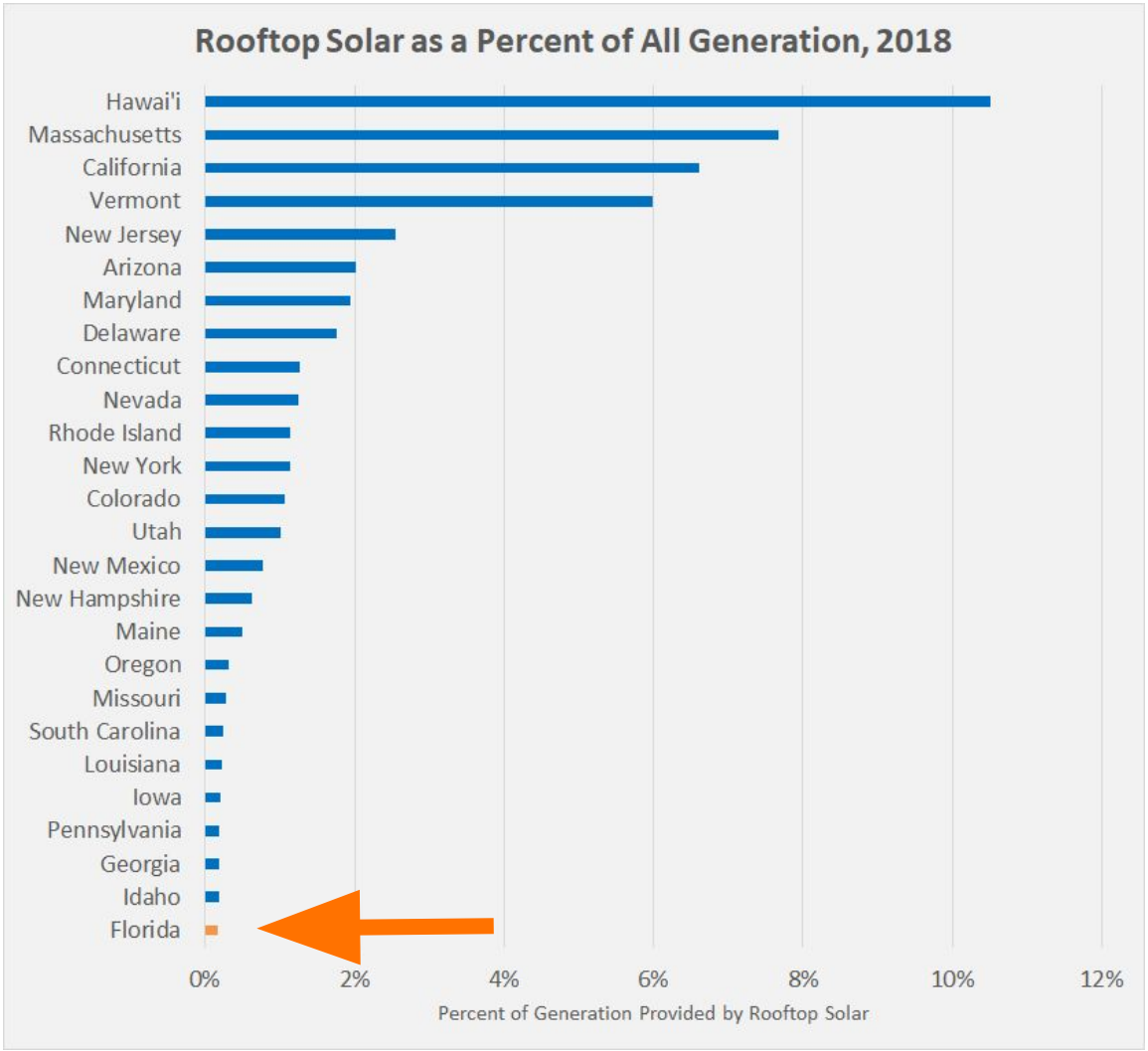
Only half a percent of
FL 0.5% RIDA
customers have net metering



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Florida is in the bottom half nationally - 25 states have higher rooftop solar penetration

Source: U.S. EIA (2018)

Why does Florida have net metering?

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The Florida legislature unanimously enacted net metering as part of broad energy reforms passed in 2008 (H.B. 7135).

Goals: to address Florida's growing dependence on natural gas, minimize volatile fossil fuel costs, encourage investment within the state, reduce 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.

Republican then-Governor Charlie Crist signed the bill.

"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

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2008 Rulemaking

Spurred by FL Executive Order 07-127 in mid-July

Rule 25-6.065, F.A.C. amended to allow for net metering and interconnection

Net metering matters to Florida voters

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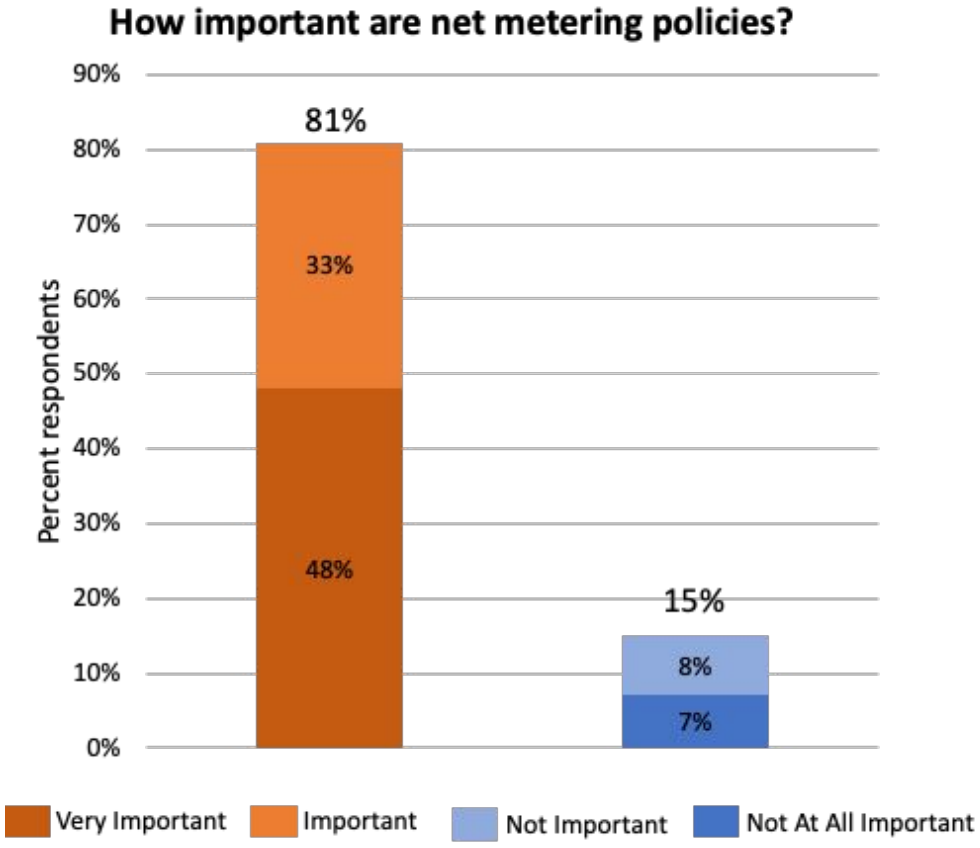

Building a resilient Florida

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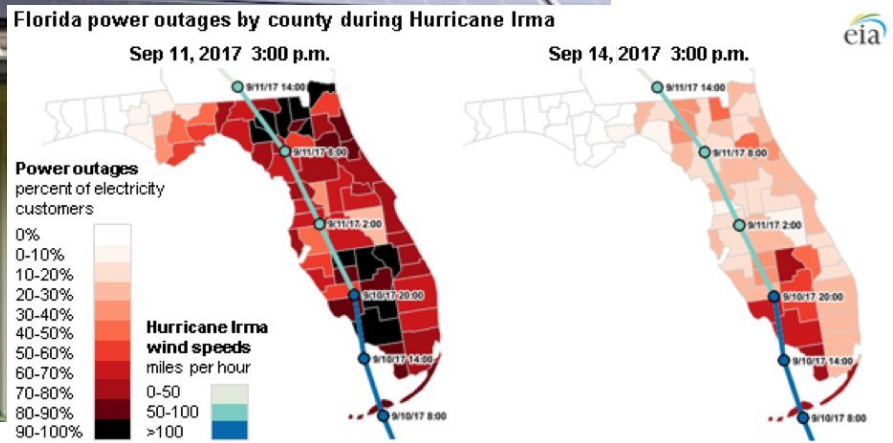

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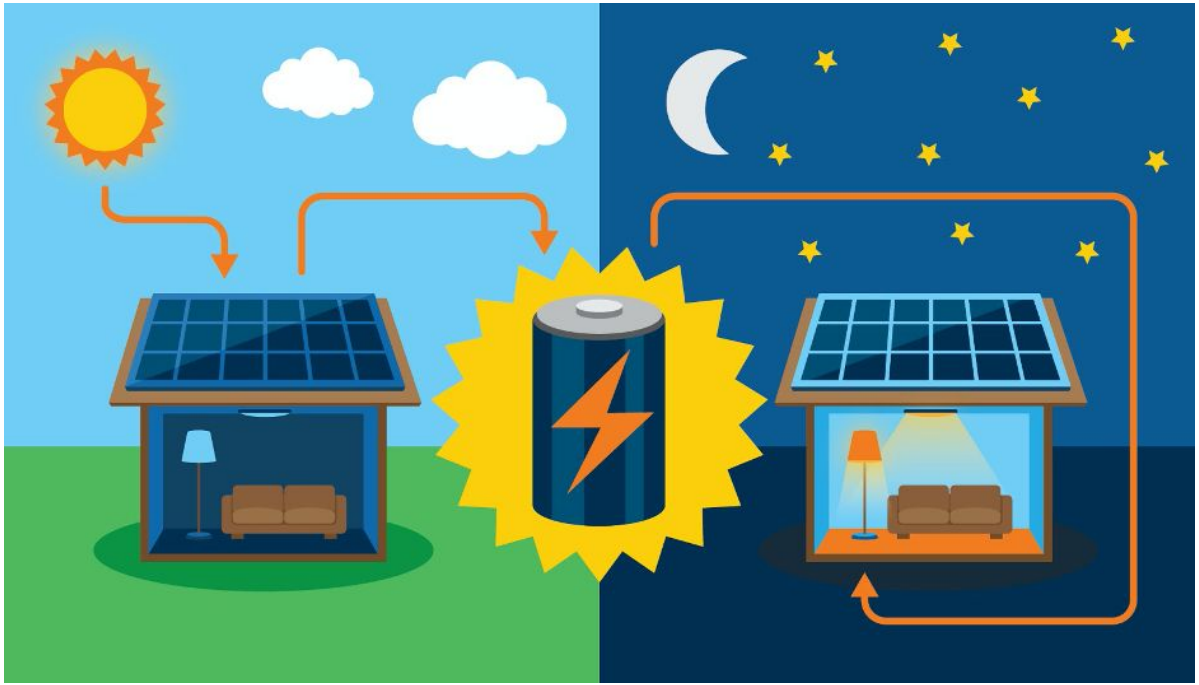


Grid security

Net metering has proven to be a core foundational policy to facilitate islanding with battery storage

A neighborhood's backup power

Kathy Kirkland's solar-powered farm near Apalachicola, Florida

"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."

“As a solar co-op leader, I've personally witnessed the difference that solar makes for families in Central Florida. Net metering puts boots on roofs across our state, creating good, local jobs and giving Floridians more control over their energy bills. I truly appreciate the savings each month that stretch my retirement funds so I can spend money in the community.”

Thad Barnes - Rooftop Solar Construction Supervisor, Tampa

“I work in the solar industry because I believe in the mission, I believe in creating a better future. I choose to put solar on my house to help reduce my carbon footprint and to be able to have Tesla storage batteries for times of no power. Living in Florida, extended power outages are a very real possibility during hurricane season. This gives me the piece of mind knowing my family will be safe in their home.”

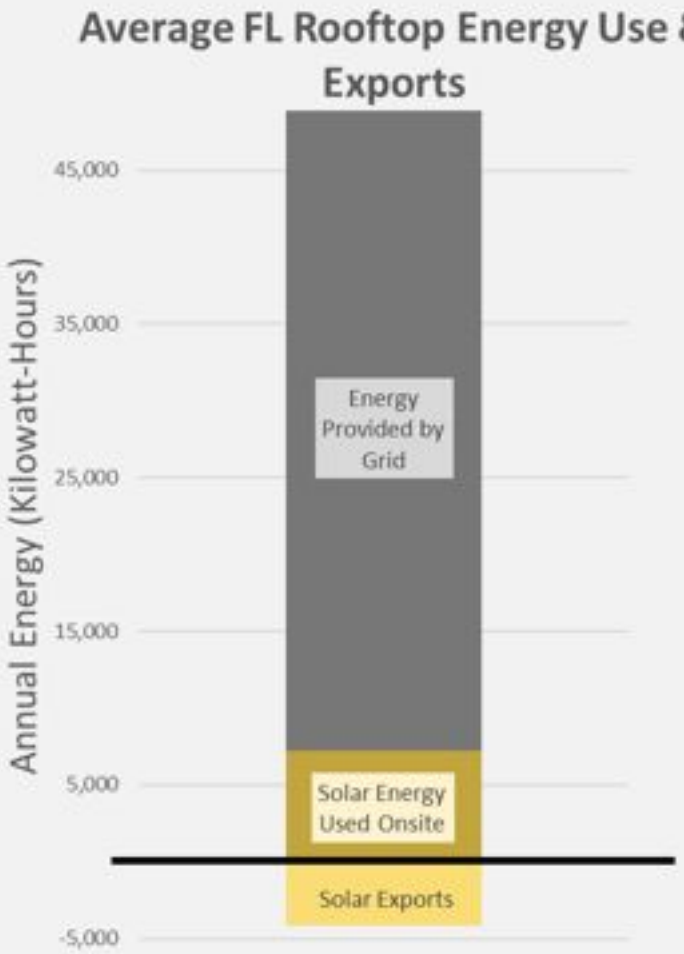
Rooftop solar customers are still buying electricity

The average solar customer still gets 80% of their energy from the grid

Average Florida solar customer uses about 10x what they export to the grid

A typical Florida solar customer uses about 2/3 of what their solar generates onsite

Source: FPSC 2019 Net Metering Report



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Data reported by utilities to PSC shows utilities sell more than ten times as much energy to rooftop customers as customers export to the grid.

Exported solar energy is a tiny sliver -- less than one quarter of one percent -- of residential energy use.

Source: FPSC 2019 Net Metering Report, FRCC Ten Year Site Plan Review

Does rooftop solar raise rates for non-participants?

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Lawrence Berkeley National Lab report

What lost revenues?

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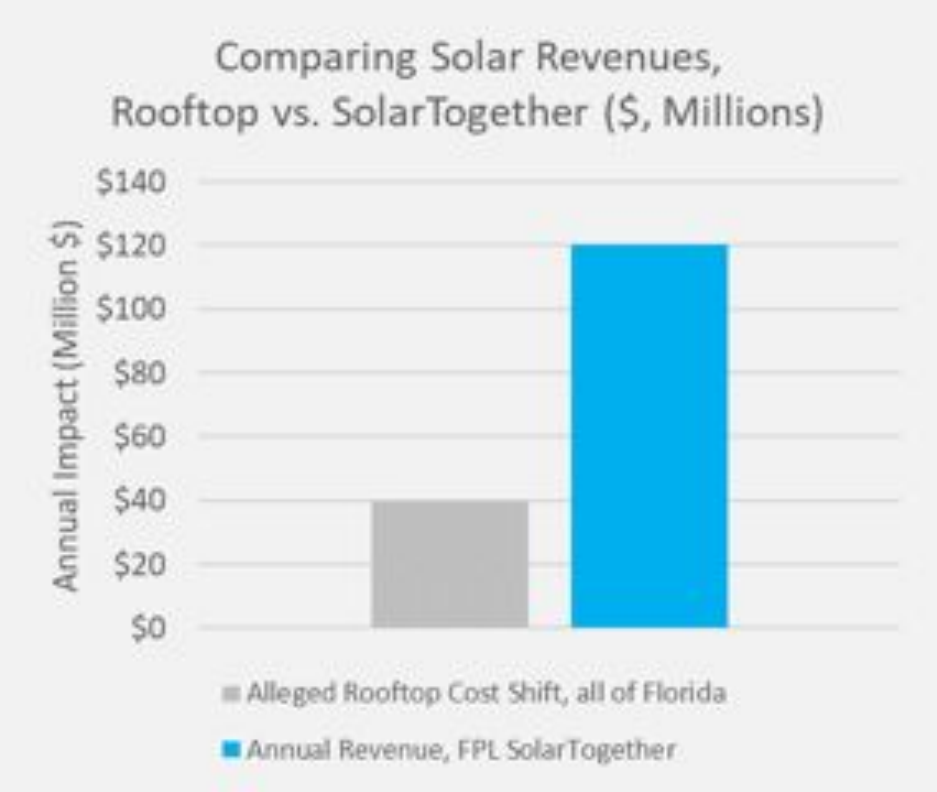
Utility arguments of solar revenue "subsidies" have been present since 2008, when there were only 200 rooftop solar customers

FP&L's SolarTogether, a single project approved by the Commission this year, will generate three times as much annual revenue to FPL as the "cost shift" alleged to accrue across the whole state.



Source: FPL SolarTogether application

Is rooftop solar affecting load?

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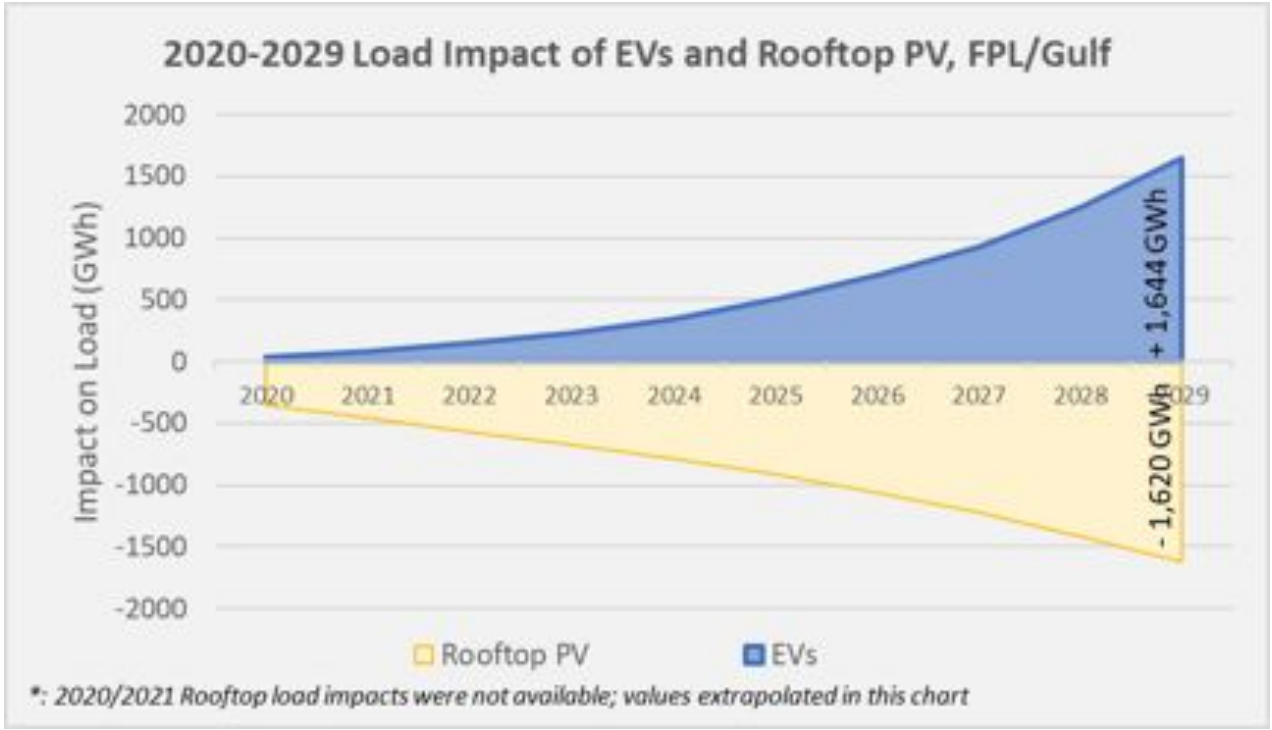

According to FPL and Gulf Power's projections, electric vehicles will add more load to the grid than rooftop solar will avoid by 2029.

Source: FPL/Gult Ten Year Site Plan Data Request Response 1-20 (2020)

Customers have choices – we think that's a good thing

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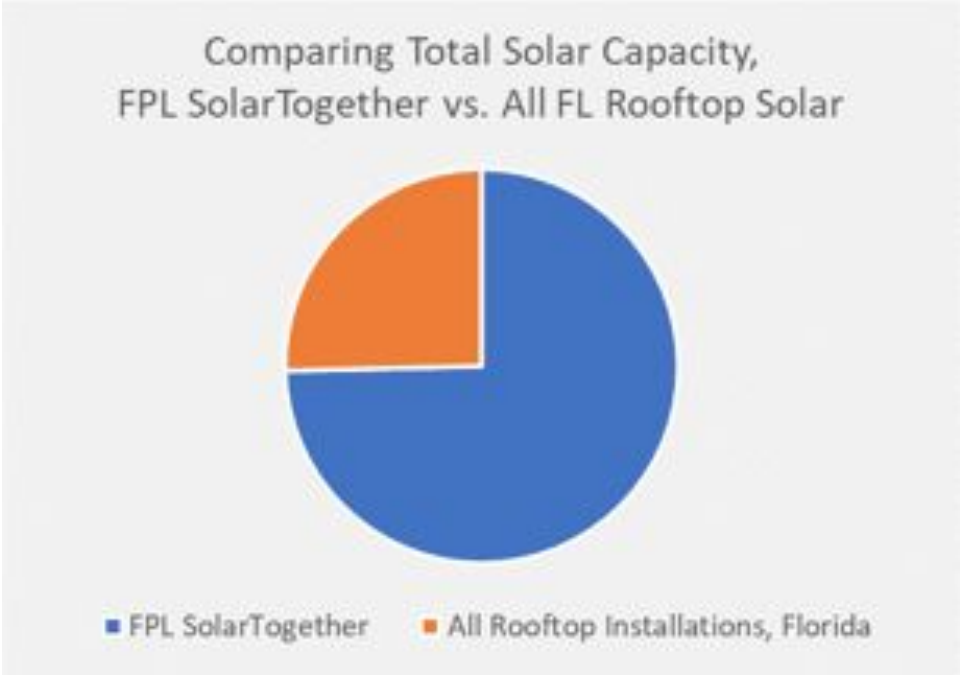
FPL SolarTogether:
7 year payback

Rooftop NEM:
8-9 year payback



Issues in 2008 rulemaking

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- Defining “customer-owned renewable generation” and implications for financing
- Setting 3 tiers and interconnection standards
- Disconnect switches
- IX studies
- Inspection by utilities
- Insurance requirements ($1 m. over 10 kW)
- Value of exports at end of year
- REC treatment

Process matters

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FLORIDA PSC 2007-08: 14 months from initial inquiry to final amended rule

Jan 2007	PSC workshop on renewable energy
April 2007	2 staff workshops held on expanding Small PV Rule
Apr/May 2007	Staff review of post-workshop comments
July 2007	Crist EO requesting rule changes
Aug 2007	Commission rule development workshop
Sept 2007	Staff review of comments, works on draft
Oct 2007	Staff rule development workshop
Oct 2007	Comments submitted on draft rule
Dec 7, 2007	Staff proposes rule change for Commission approval
Dec 18, 2007	PSC votes to issue notice of rule modification
Jan 25, 2008	Comment deadline on proposed rule
Mar 19, 2008	PSC adopts staff's rule amendment

Phase I (Methodology) (9 months from Scheduling Order to Order)

August 29, 2014	Notice of Technical Conference
Nov. 5, 2014	Technical Conference on Company Load Research Study Design
Dec. 5, 2014	Comments on Load Research Technical Conference
Jan. 12, 2015	Scheduling Conference
Jan. 14, 2015	Scheduling Order
Feb. 6, 2015	Initial Comments on NEM Analytical Framework
Feb. 20, 2015	Reply Comments on NEM Analytical Framework
March 16, 2015	Tech Conference 1
April 27, 2015	Tech Conference 2
May 6, 2015	Deadline for Briefs / Motions (to limit scope of NEM framework)
May 12, 2015	Tech Conference 3 (Cost-benefit studies vs Cost of Service studies, avoided cost and IRP Frameworks)
May 27, 2015	Responses to Briefs and Motions on scope of NEM framework
June 25, 2015	Tech Conference 4 (Overview of DSM tests)
July 1, 2015	Order on Conclusion of Law on Scope of NEM Framework
July 8, 2016	Tech Conference 5 (Synapse Presentation on NEM, Rate Design)
July 30, 2015	Phase I Direct Testimony
September 8 2015	Phase I Rebuttal Testimony
September 29, 2015	Phase I Surrebuttal Testimony
October 6-8, 2015	Evidentiary Hearings (took one day)
November 10, 2015	Order establishing NEM Framework

Phase II (RMP application) (11 months from Application to Order)

Nov. 9, 2016	Application filed
Nov. 17, 2016	Scheduling Conference (paused for legal briefing on motions)
Dec. 20, 2016	Dispositive Motions (on single issue ratemaking claim)
Jan. 12, 2017	Responses to dispositive motions
Jan. 16, 2017	Replies in support of dispositive motions
May 18, 2017	Technical Conference (RMP to go over filing: Commissioners present)
June 8, 2017	Direct Testimony
July 18, 2017	Rebuttal Testimony
August 8, 2017	Surrebuttal Testimony
August 9, 2017	Public Witness Hearing
August 14, 2017	Evidentiary hearing (Delayed to allow settlement talks to proceed)
August 25, 2017	Stipulation between Vivint Solar and RMP
Sept. 18, 2017	Hearing on stipulation
Sept. 29. 2017	Ordering accepting Stipulation

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Utah

Source: Dkt 14-035-114

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Arkansas

Phase I Proceedings to Adopt Amended NMRs - *15 months*

2015	Act 827 called for changes to net metering
July 2016	Staff comments filed
Aug/Sept 16	Parties file reply and surreply comments and testimony
Oct 2016	Public hearing on Phase 1
March 2017	Commission order on Phase 1
Sept 2017	Rule effective
Nov 2017	Compliance tariffs revised by Commission, then approved

Phase 2 Proceedings - Rate Issues - *20 months*

Aug 2016	Net Metering Working Group created, led by staff, to address rate structure and tariff issues
June 2017	NMWG files first joint progress report and proposed procedural schedule
Sept 2017	NMWG joint report and recommendations filed
Oct/Nov 17	Reply and surreply comments filed
Nov/Dec	Two day evidentiary hearing held by PSC
Feb/Mar 18	Initial and reply briefs filed

Phase 3 - Rate Issues After Act 464 of 2019 - *13 months*

May 2019	NMWG re-convened
Sept 2019	Staff files proposed rule
Oct/Nov 2019	Initial, reply and surrebuttal comments filed
Dec 2019	Hearing held
Feb 2020	Second hearing held
June 2020	Order on Phase 3

Source: PSC Docket 16-027-R

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NH

Pre-filing Phase (5 months)

May 19, 2016	Order of Notice
June 10, 2016	Prehearing conference and tech conference (discussion of scope)
June 22, 2016	Tech Session to discuss scope and procedural schedule
June 24, 2016	Staff Report on Tech Conference
June 27, 2016	Data Requests to Utilities (informal) for production of data
July 5, 2016	Utility responses to initial data requests
July 11, 2016	Tech Session to review data produced and resolve questions
July 18, 2016	Parties file Cost-Benefit component outlines
July 21, 2016	Tech Session to discuss Cost-Benefit outlines
July 25, 2016	Utility Near-term data responses due
August 8, 2016	Utility remaining data responses due
August 11, 2016	Tech Session to discuss rate structures, frameworks, evidence, proposed studies
Sept 14, 2016	Discuss parameters of proposed tariff filings
Sept. 16, 2016	Voluntary marginal COS and other studies filed
Sept. 21, 2016	Tech Session to discuss any studies filed; review data responses (any unanswered questions)

Rulemaking Phase (9 months)

Oct. 21, 2016	Initial filings, supporting testimony
Nov. 15, 2016	Tech Session to discuss initial filings and NEM tariff proposals
Dec. 2, 2016	Rebuttal Testimony and exhibits
Dec. 21, 2016	Interim NEM Tariff approved (extended schedule beyond statutory deadline of March 1)
Jan. 4, 2017	Tech session/Settlement Conference
March 10, 2017	Coalition Settlements Filed (Solar parties and utility parties each filed settlement)
March 27, 2017	3 days Evidentiary Hearings on Competing Settlements
June 23, 2017	Order accepting settlement provisions and adopting new NEM tariff

Source: Dkt DE 16-576

Technical workshops

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Long-run marginal costs and T&D planning (SC)

Distributed energy resources (SC)

Successor tariff and rate design (SC)

Company Load Research Study Design (Utah)

Cost-benefit studies, cost of service studies, avoided cost (Utah)

NEM and rate design (Utah)

rate structures/frameworks (e.g., by customer class, by system size, by technology, etc.) (NH)

relevant cost and benefit components (NH)

Precursor: Access to NEM data

- **Individual customer interval load data, including rate schedule; whether a NEM customer; installed capacity size; technology type; interconnection date; meter type; and hourly interval load data (delivered load, exported load, solar production and self-consumption)**
- **Cost of service study on DG customers; how allocation factors were set**
- **Any incremental metering or other costs for DG and non-DG customers**
- **Battery storage and EV adoption information**

Proposed rules of engagement

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Everyone gets a seat at the table.

This is about customer control.

We need more energy access, not less.

Gather all relevant information.

Understand the role of new technologies.

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