



# June 26, 2023 Meeting

## Backup Materials

### Contents:

- Presentation: *2023 Broward Solar Co-op* {Laura Tellez, Solar United Neighbors}



# Advancing Solar Broward Solar Co-op



1

WHAT IS SOLAR UNITED NEIGHBORS?

**We're a vendor neutral,  
national 501(c)(3)  
nonprofit.**

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WHAT IS SOLAR UNITED NEIGHBORS?

We help people  
go solar,  
join together,  
& fight for their  
energy rights.

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## Our Theory of Change

### 1. Go solar

Support with new/existing system

### 2. Join together

Resources, solar tour, happy hours

### 3. Fight for energy rights

Net metering, HOAs represent solar owners



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## How SUN got started

2007

- 50 homes in Mt. Pleasant neighborhood Washington, DC



2015-16

- Volunteers began in Florida
- Launched 1st official FL Co-op



2023

- members in 50 states
- 392 solar co-ops run
- 8,025+ homes have gone solar

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**Our National Impact**  
 8,025+ families with solar  
 68.6+ Megawatts of solar  
 895,765 MetricTons of CO<sub>2</sub>e Saved

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## Florida's Program's impact since 2016

**2,391+** people gone solar w SUN

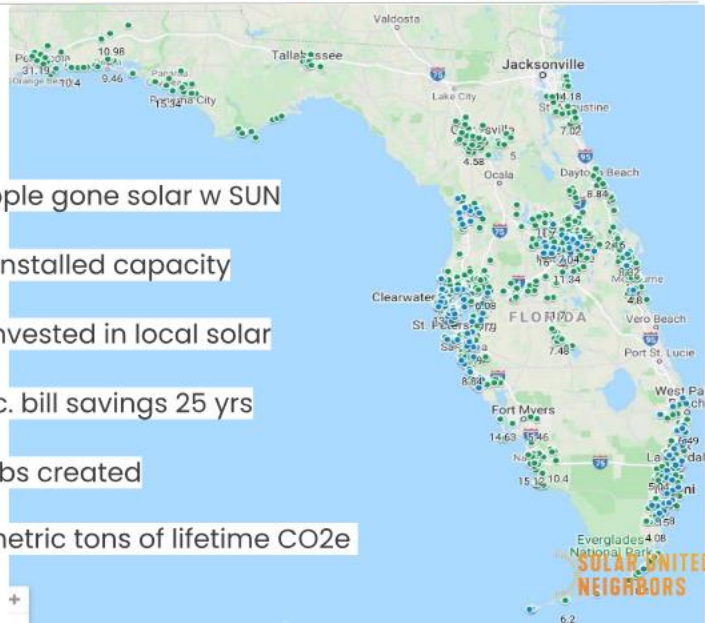
**23.6 MW** installed capacity

**\$56.8 M** invested in local solar

**\$110 M** elec. bill savings 25 yrs

**378** solar jobs created

**324,466** metric tons of lifetime CO<sub>2</sub>e offsets



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## What we'll cover today

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**Solar  
Technology**

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**Solar  
Economics**

3

**How Solar  
Co-ops Work**

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# Solar Technology

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## How do solar panels work?

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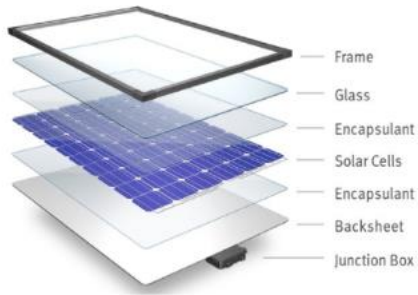


Solar photovoltaic (PV) converts solar energy to electricity.

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NEIGHBORS

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## System Components: Panels



**Panel / Module**

*Image Source: DuPont*



**Solar Array**



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## System Components: Racking



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## Racking: Standing seam metal roof



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## Racking: Concrete barrel tile roof



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## System Components: Inverters



**String Inverter**  
Mostly used for ground mounts & commercial



**String inverter & DC optimizers**



**Microinverters**



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## System Components: Electrical Panel



**How does my my solar connect to my electrical panel?**

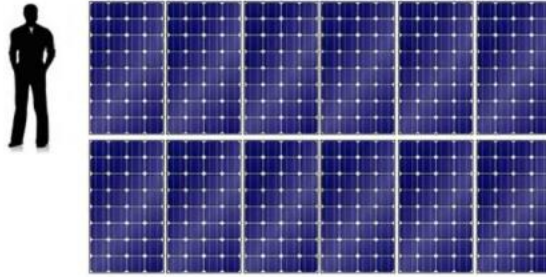
- Simple connection in panel
- Most home electric systems don't need upgrades before solar



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## Important Terminology

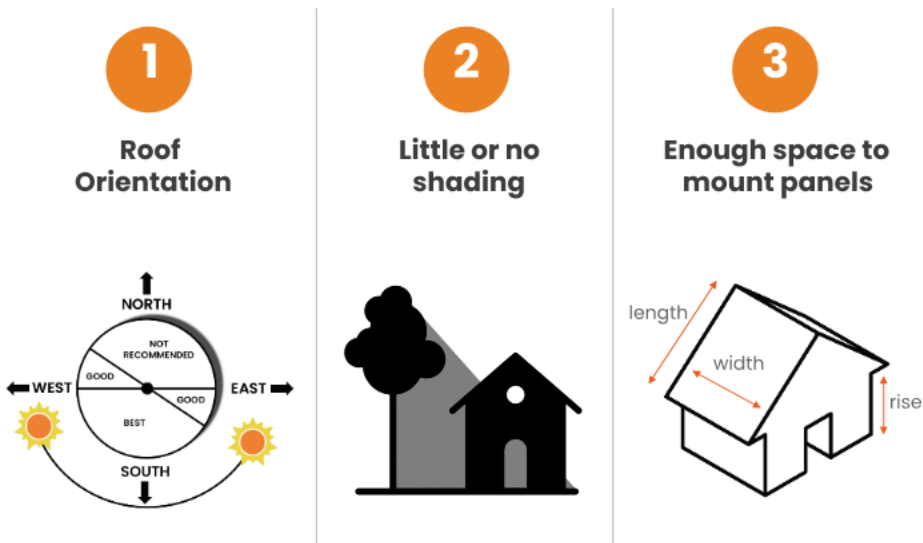
- **Kilowatts (kW)** System measured in kW
- **Kilowatt-hours (kWh)** Electricity production in kWh
- **Average size:** 4 kW - 12 , size based on site & goals (budget, covering 100% consumption)



4.2kW Solar Panel Array to scale using 350W panels  
(350w x 12 panels = 4,200 watts or 4.2 kW)

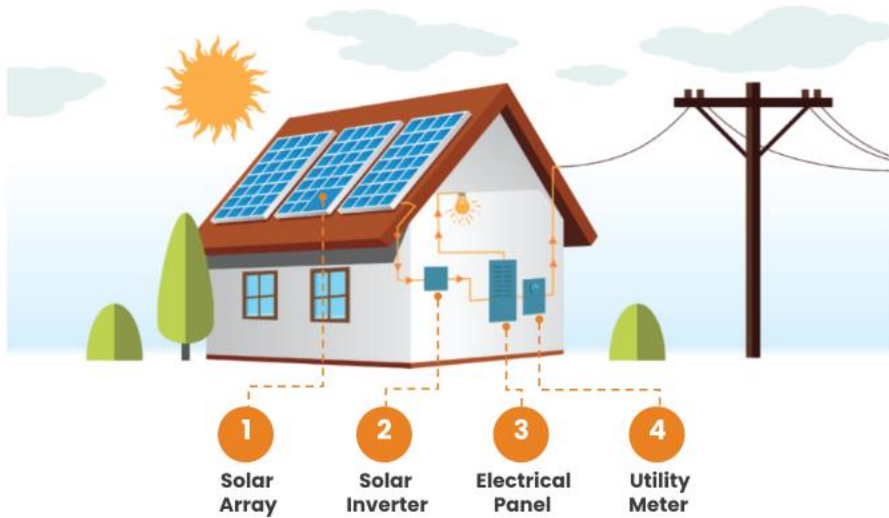
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## What's a good roof for solar?



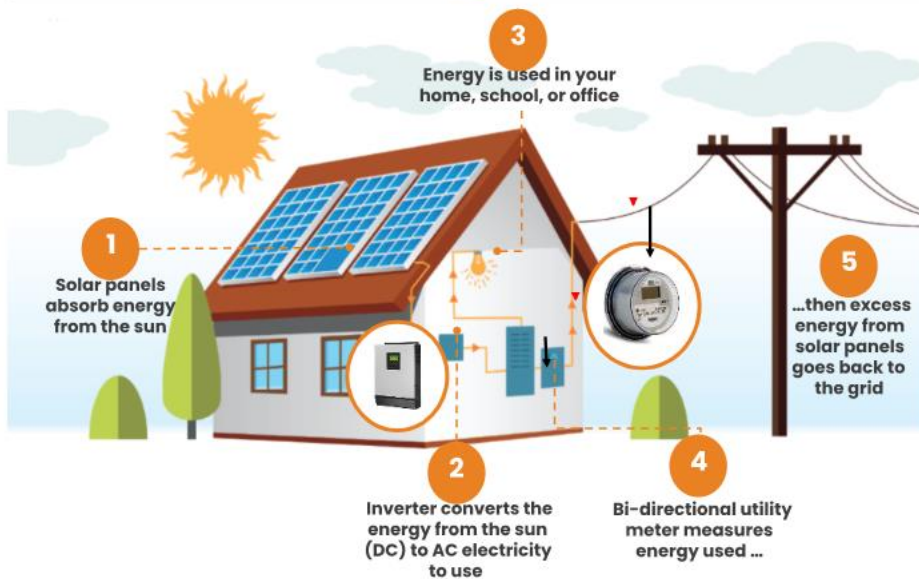
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## Important Terminology



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## What is Net Metering?



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## What will your electric bill look like?

Example Electrical Bill	
Electricity used from the grid	300 kWh
- Electricity exported	200 kWh
= Amount of electricity you pay for on your bill	100 kWh

\*Your bill may have a service fee or minimum charge

\*\*Many electric bills do NOT reflect your self usage. This means that the 200 kWh exported above is what goes to the grid **after** your self consumption

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## System Component: Batteries



Mypanhandle.com Hurricane Sally

### What happens when the power goes out?

- When grid is down, solar shuts off (safety mechanism)
- Need batteries if you want you want power during outages



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## Value of Battery Storage

### You might want storage if...

- Frequent utility outages
- Critical loads at home (i.e. well pumps, medical equipment)
- Emergency/disaster preparedness



**BACKUP POWER FOR YOU**

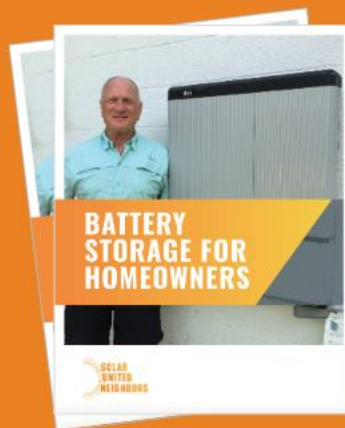


**SAVE MONEY OR GET PAID TO HELP THE GRID\***

\*This is coming! How fast depends on where you live.

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## Battery Storage for Homeowners Guide



[solarunitedneighbors.org/storage](https://solarunitedneighbors.org/storage)

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## Example of Battery

### 13.5 kWh Battery Bank

- Fully re-charged by solar (6kW) daily
- Without sun shining only have 1 day of power

### What will run when the power is out:

- Refrigerator; microwave
- Some lights & outlets
- Cable modem
- Small window air conditioner

### What they chose not to power:

- Stove; dryer; electric water heater



*The Johnsons lose power several times of year. Each time the power is out for the entire day.*

\$16,500 Retail Solar Array 6kW  
 \$11,500 Battery Storage 13.5 kWh  
 (Lithium ion battery w/ PV installation)



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## Frequently Asked Questions

- Warranties?
- Homeowners' insurance?
- Maintenance?
- How long do systems last?
- Will HOA allow solar on my home?
- What if I'm In a historic district?



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# 2 Solar Economics

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## Working for Equity

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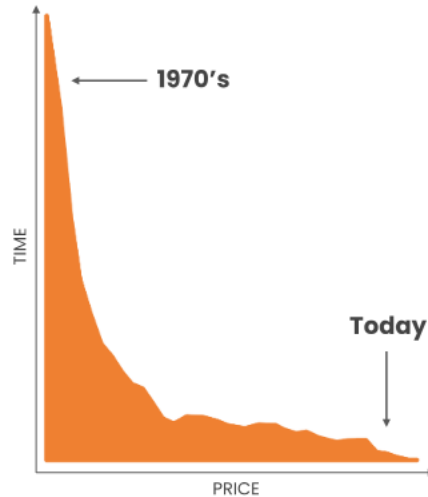
We're working toward a new energy system – one that is fair and equitable.

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## Solar Economics

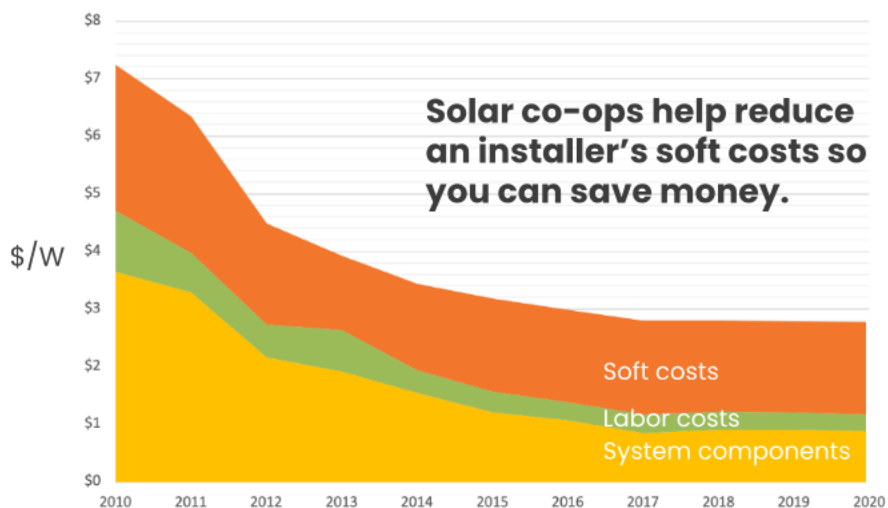
### Solar is a great investment!

- Costs have dropped 73% since 2010
- No longer a specialty or boutique project
- Excellent ROI
- 26% federal tax credit (steps down after 2022)



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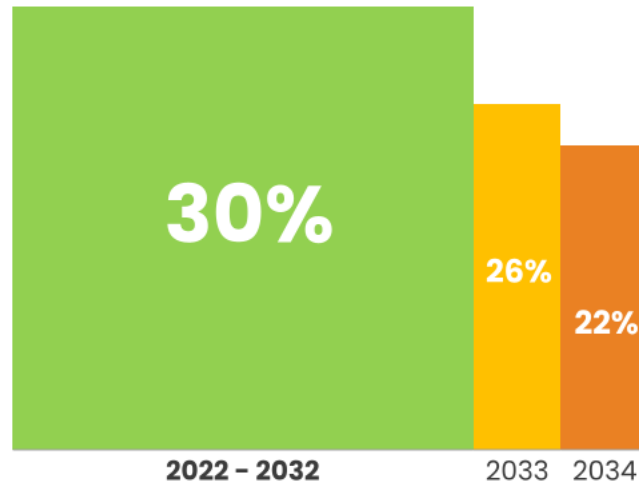
## Breaking down the cost of solar



Sources: NREL's "Quarterly Solar Industry Updates" & SEIA/Wood Mackenzie Power & Renewables' "U.S. Solar Market Insight" reports

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## Federal tax credit



- Not inclusive of state and local incentives

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## Pricing & Sizing – How Many Panels?



**26 Panels**  
**8 KW**  
**40% of the kWh usage**



**26 Panels**  
**6.7 KW**  
**100% of the kWh usage**

- System measured in kW (compare to horsepower)
- Electricity production in kWh (compare to mph)
- Most homeowners install between 4 kW – 12 kW

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## Example Pricing

<b>SAMPLE CASH PURCHASE</b>	<b>4kW</b>	<b>8kW</b>
Average FL solar co-op price (\$2.25/watt)	\$9,000	\$18,000
26% Federal tax credit	-\$2,340	-\$4,680
<b>Net Cost</b>	<b>\$6,660</b>	<b>\$13,320</b>
Estimated year 1 electricity savings*	\$675	\$1,351
Estimated year 10 savings (cumulative)*	\$7,225	\$14,449
Estimated lifetime savings (25 years)*	\$20,277	\$40,554
<b>Net Profit</b>	<b>\$13,617</b>	<b>\$27,234</b>

EXAMPLE PRICING ONLY. ACTUAL SYSTEM SIZES WILL VARY.

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EXAMPLE PRICING ONLY.  
ACTUAL SYSTEM SIZES WILL VARY.

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## Example Financing

<b>SAMPLE LOAN PURCHASE</b> Home equity line of credit, interest rate 4%, 26% down (then take the tax credit)	4kW (\$11,000)		8kW (\$22,000)	
	10 year	15 year	10 year	15 year
Monthly Loan payment	\$67	\$49	\$135	\$99
Monthly electric savings**	-\$56	-\$56	-\$113	-\$113
Net monthly payment	\$11	+\$7	\$22	+\$14
Net Profit (25 years)	\$12,200	\$11,400	\$24,400	\$22,800

Lower monthly payment vs. lower total interest and fees paid overall.



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	10 year	15 year	10 year	15 year	10 year	15 year
Monthly Loan payment	\$67	\$49	\$135	\$99	\$202	\$148
Monthly electric savings**	-\$56	-\$56	-\$113	-\$113	-\$169	-\$169
Net monthly payment	\$11	+\$7	\$22	+\$14	\$33	+\$21
Net Profit (25 years)	\$12,200	\$11,400	\$24,400	\$22,800	\$36,600	\$34,200

Lower monthly payment vs. lower total interest paid



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## Example Financing

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## Financing Options

### Cash Grants

- USDA Rural Energy for America Program (REAP)
- Agricultural producers or Small Businesses in eligible rural areas

### Loans

- Learn more about national and local options: [Solarunitedneighbors.org/financing](https://solarunitedneighbors.org/financing)
- Paying For Your Panels Flyer



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## Loans

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- Go through through installer or on your own
- Home equity line of credit (HELOC), mortgage refinance and include solar
- Installer financing (through installer's financing company)
- Banks & Credit Unions: Admirals Bank, SeaCoast Bank, Climate First Bank, Clean Energy Credit Union or Community 1<sup>st</sup> Credit Union\* (open to SUN members)
- SELF Solar Energy Loan Fund - CDFI non-profit community lender [SolarEnergyLoanFund.org](http://SolarEnergyLoanFund.org)



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## Why join a solar co-op?

- Best value on installation
- Support throughout the process
- Connect with fellow solar enthusiasts
- Become part of growing solar movement



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Selection Committee: Member driven process

**We're a vendor neutral,  
national 501(c)(3)  
nonprofit.**

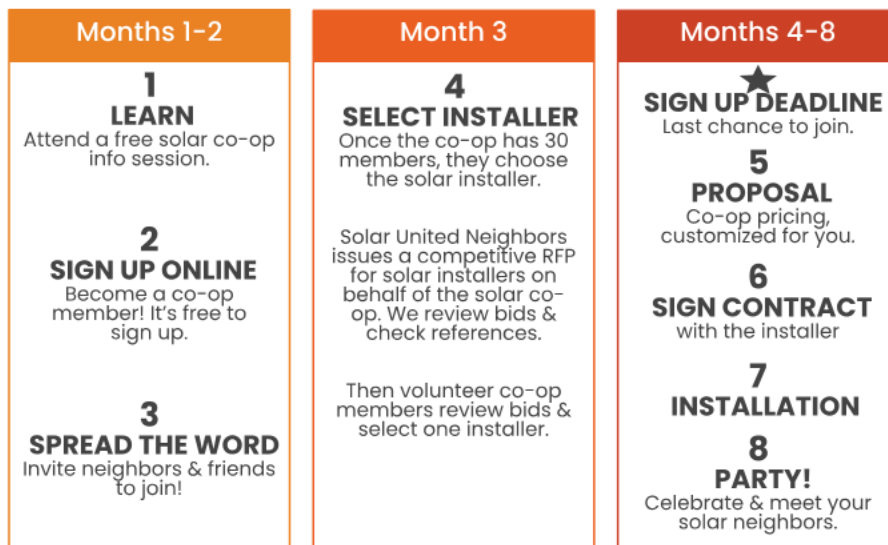
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## How does the co-op work?



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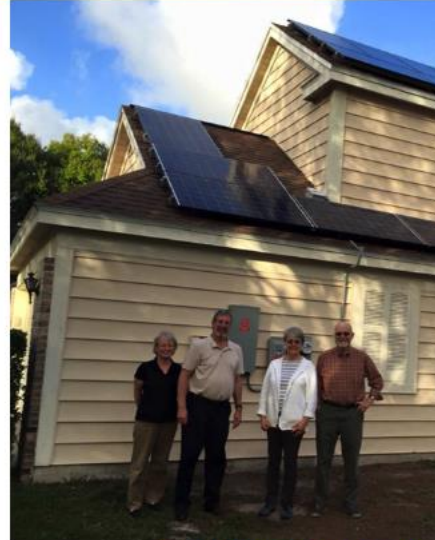
## The solar co-op process



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## Solar Co-ops benefits:

- Best value on installation
- Support throughout the process from neighbors and a neutral, unbiased advocate
- Become part of the growing solar movement



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## Helping Floridians Go Solar

### Co-op/group purchase

- 100+ neighbors
- Group decision process
- 5 - 8 month process
- Bulk negotiation for best pricing
- Sign individual contract
- No cost to join co-op

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# Help spread the sunshine!



Events actively promoted via Facebook, partner newsletters, commissioner e-blasts, newspaper placement through municipalities, NextDoor and tabling events.



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The EVs are here.

Charge your EV with sunshine for \$.01/mile.

That's \$.27/gallon equivalent in gasoline!

= 15% ROI

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# Solar Makes \$ and Sense

## Before Solar

Amount of your last bill	104.44
Payment received - Thank you	-104.44
<b>Balance before new charges</b>	<b>\$0.00</b>
<b>NEW CHARGES</b>	
Rate: RS-1 RESIDENTIAL SERVICE	
Customer charge:	\$7.57
Non-fuel: (First 1000 kWh at \$0.057690)	\$37.35
(Over 1000 kWh at \$0.068510)	
Fuel: (First 1000 kWh at \$0.028020)	\$27.85
(Over 1000 kWh at \$0.039020)	
<b>Electric service amount</b>	<b>92.77</b>
Storm charge	1.39
Gross receipts tax	2.41
Franchise charge	5.60
Utility tax	8.12
<b>Taxes and charges</b>	<b>17.52</b>
<b>Total new charges</b>	<b>\$110.29</b>
<b>Total amount you owe</b>	<b>\$110.29</b>

## After Solar.

Amount of your last bill	9.42
Payment received - Thank you	-9.42
<b>Balance before new charges</b>	<b>\$0.00</b>
<b>NEW CHARGES</b>	
Rate: RS-1 RESIDENTIAL SERVICE	
Customer charge:	\$7.87
Non-fuel energy charge:	
First 1000 kWh	\$0.065950 per kWh
Over 1000 kWh	\$0.075950 per kWh
Fuel charge:	
First 1000 kWh	\$0.024910 per kWh
Over 1000 kWh	\$0.034910 per kWh
<b>Electric service amount</b>	<b>7.87</b>
Gross receipts tax	0.20
Franchise charge	0.49
Utility tax	0.86
<b>Taxes and charges</b>	<b>1.55</b>
<b>Total new charges</b>	<b>\$9.42</b>
<b>Total amount you owe</b>	<b>\$9.42</b>

Results vary based on roof size, electrical use, and budget.



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# Join The Co-Op!

Help up promote info sessions!

Join the co-op with your neighbors  
It's free to sign up and there's no obligation to go solar through the co-op.

[SolarUnitedNeighbors.org/Waitlist](http://SolarUnitedNeighbors.org/Waitlist)  
[www.SolarUnitedNeighbors.org/Broward](http://www.SolarUnitedNeighbors.org/Broward)



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# Learn about solar

Solar 101 Info Session

Wednesday, June 28 at 6pm

Learn about solar technology, the co-op process and solar economics. Ask live questions

It's free to sign up and there's no obligation to go solar through the co-op.

[www.SolarUnitedNeighbors.org/Events](http://www.SolarUnitedNeighbors.org/Events)

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## What's next?

Join Our Open Solar Co-ops:  
[SolarUnitedNeighbors.org/Waitlist](http://SolarUnitedNeighbors.org/Waitlist)

**Broward Co-op coming up in August!**



*Tell your friends  
and neighbors  
about the co-op!*

*Join our network!*



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# Thank You!

**Laura Tellez**

Solar United Neighbors of Florida  
FLTeam@SolarUnitedNeighbors.org



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