



# Solar on Farms 2023



WHAT IS SOLAR UNITED NEIGHBORS?

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





**Our Impact**  
 On the ground: 12 states  
 6,000+ families  
 54 Megawatts  
 VA: 1,100, 8 MW  
 Equitable energy system



# Our Theory of Change

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## 1. Go solar

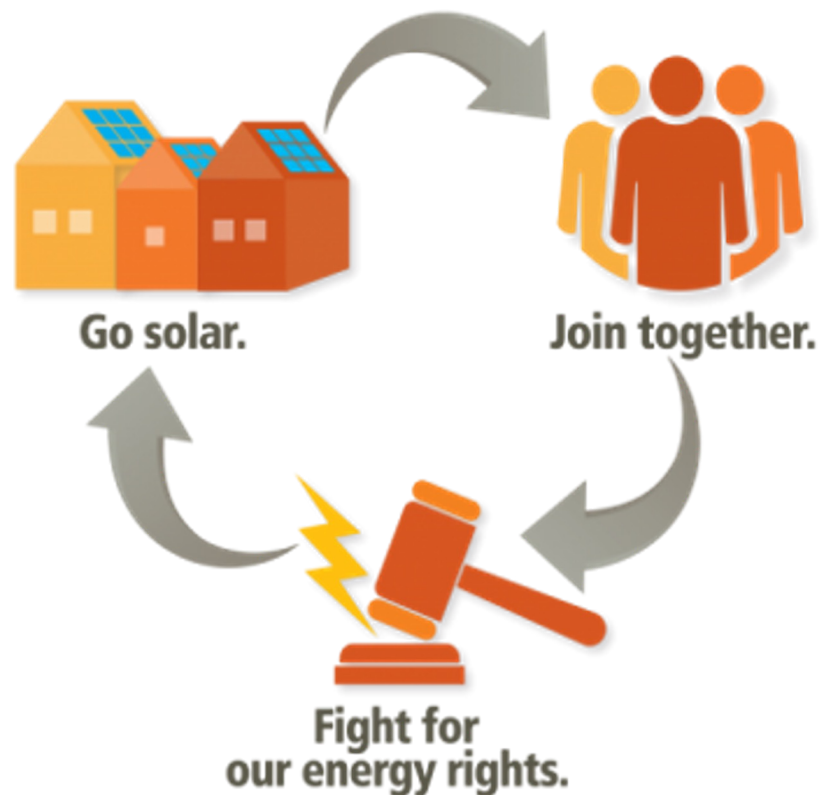
Support with new/existing system (Co-op) Installer & technology neutral

## 2. Join together

Resources, listserv, social events

## 3. Fight for energy rights

Net metering, HOAs, represent solar owners, non partisan





# How do solar panels work?

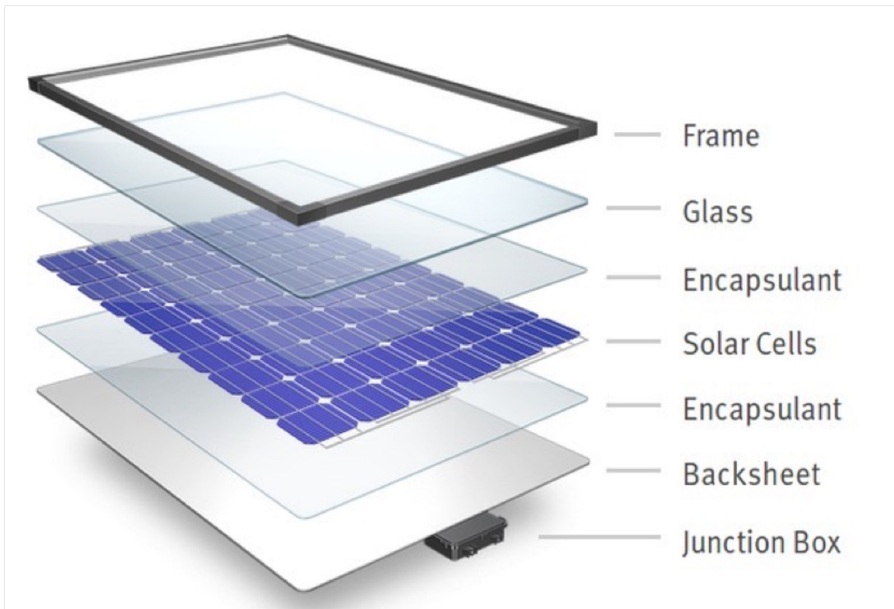
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Solar photovoltaic (PV) converts solar energy to electricity.

# System Components: Panels

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## Panel / Module

*Image Source: DuPont*

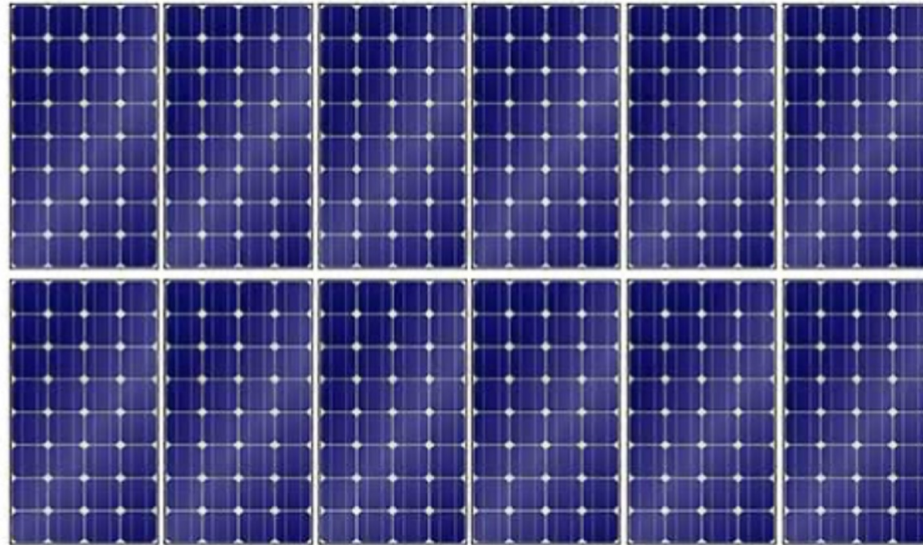


## Solar Array

# Important Terminology

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- **Kilowatts (kW):** System measured in kW
- **Kilowatt-hours (kWh):** Electricity production in kWh
- **Average size:** 6kW to 7kw, size based on site & goals (budget, covering % of annual consumption)



3.6kW Solar Panel Array to scale  
using 300W panels

# System Components: Inverters

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



**String inverter &  
DC optimizers**



**Microinverters**



# System Components: Electrical Panel

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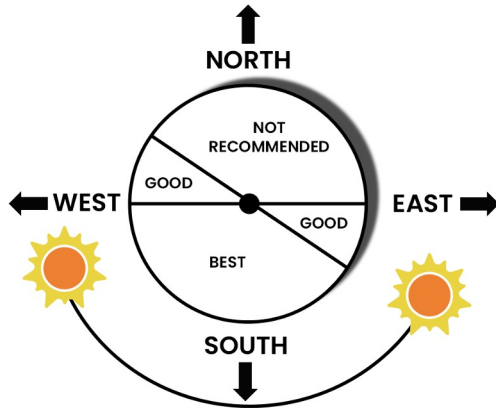
## How does my my solar connect to my electrical panel?

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

# What's a good roof for solar?

1

## Roof orientation



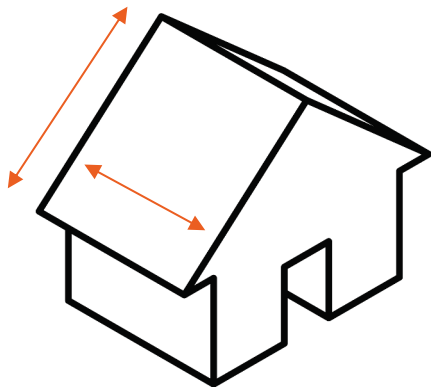
2

## Little or no shading



3

## Enough space to mount panels



4

## Newer, undamaged roof





# System Components: Racking





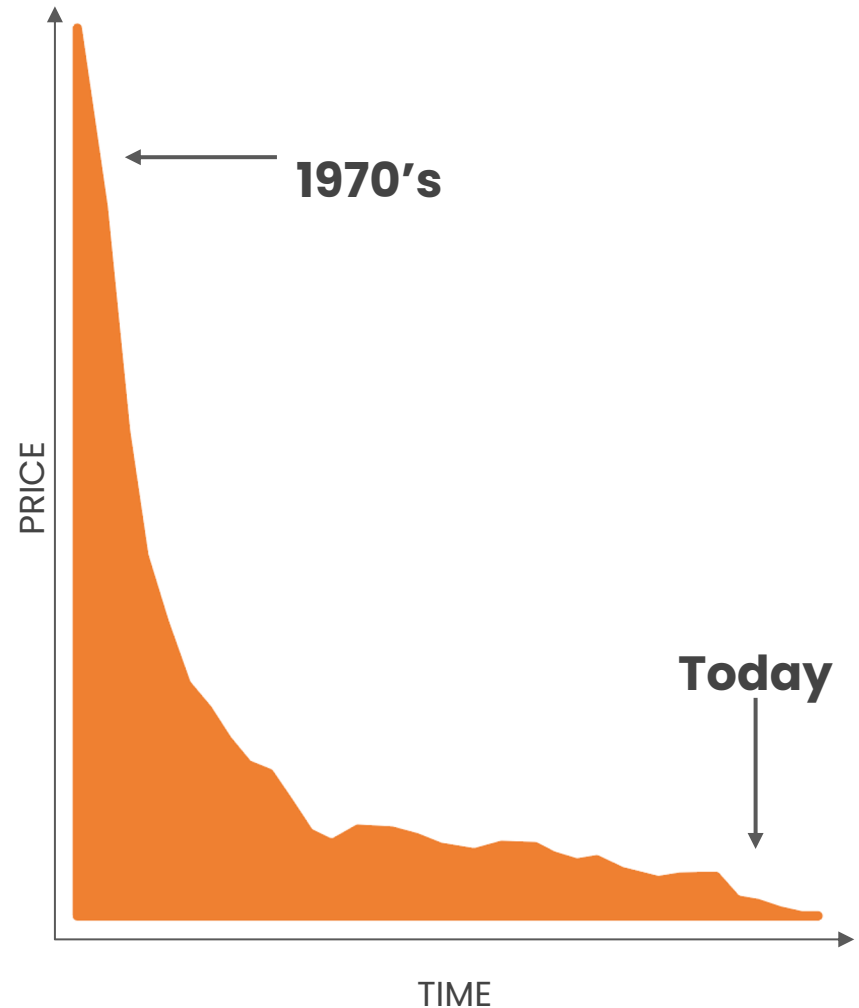
# Racking: Ground mounted solar



# Solar economics

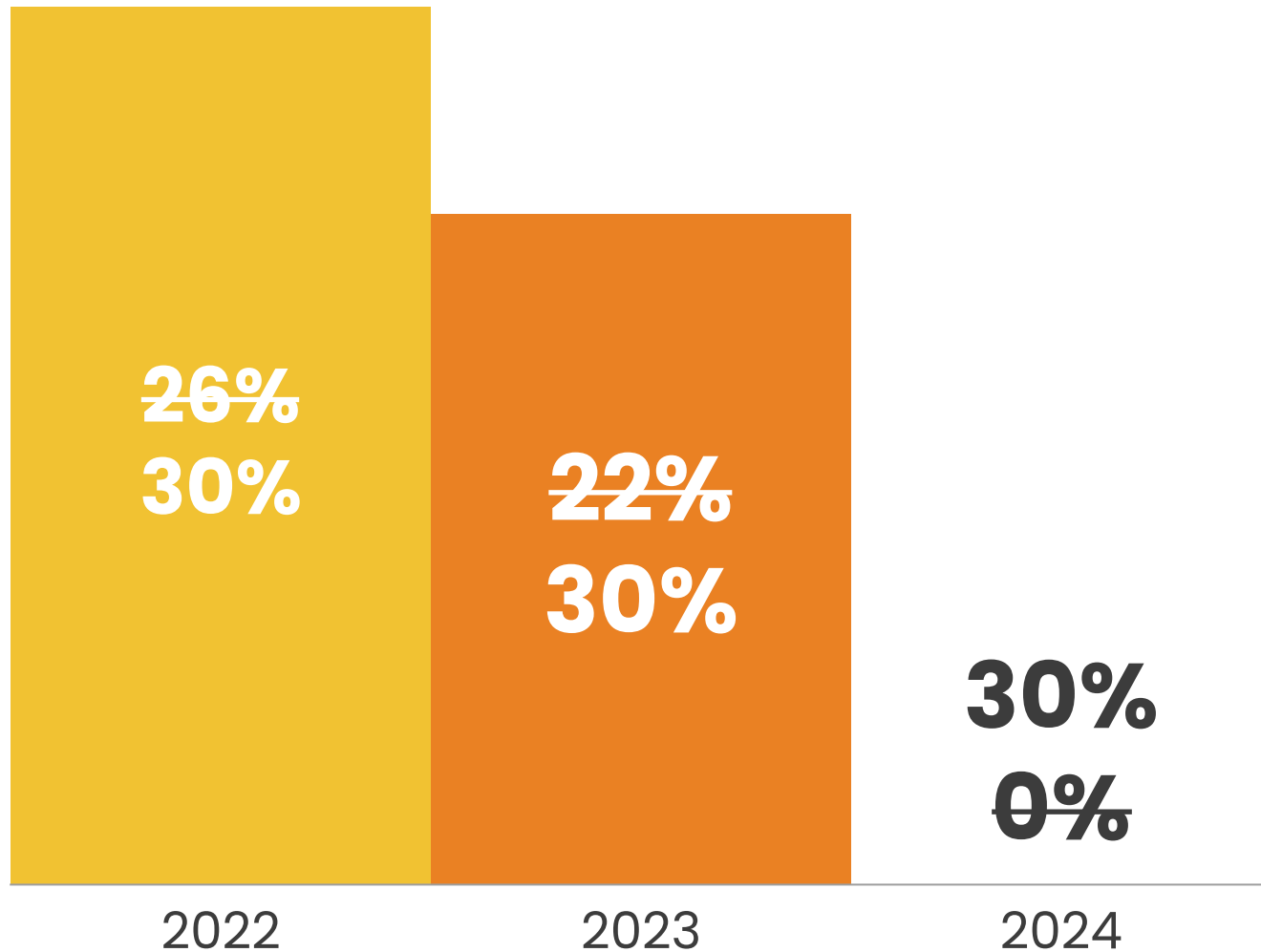
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- Costs have dropped 73% since 2010
- Solar is long-term investment
- No moving parts & 25 year lifespan
- Hedge against rising utility rates
- VA average ROI: 9–13 years



# Federal tax credit is no longer decreasing!

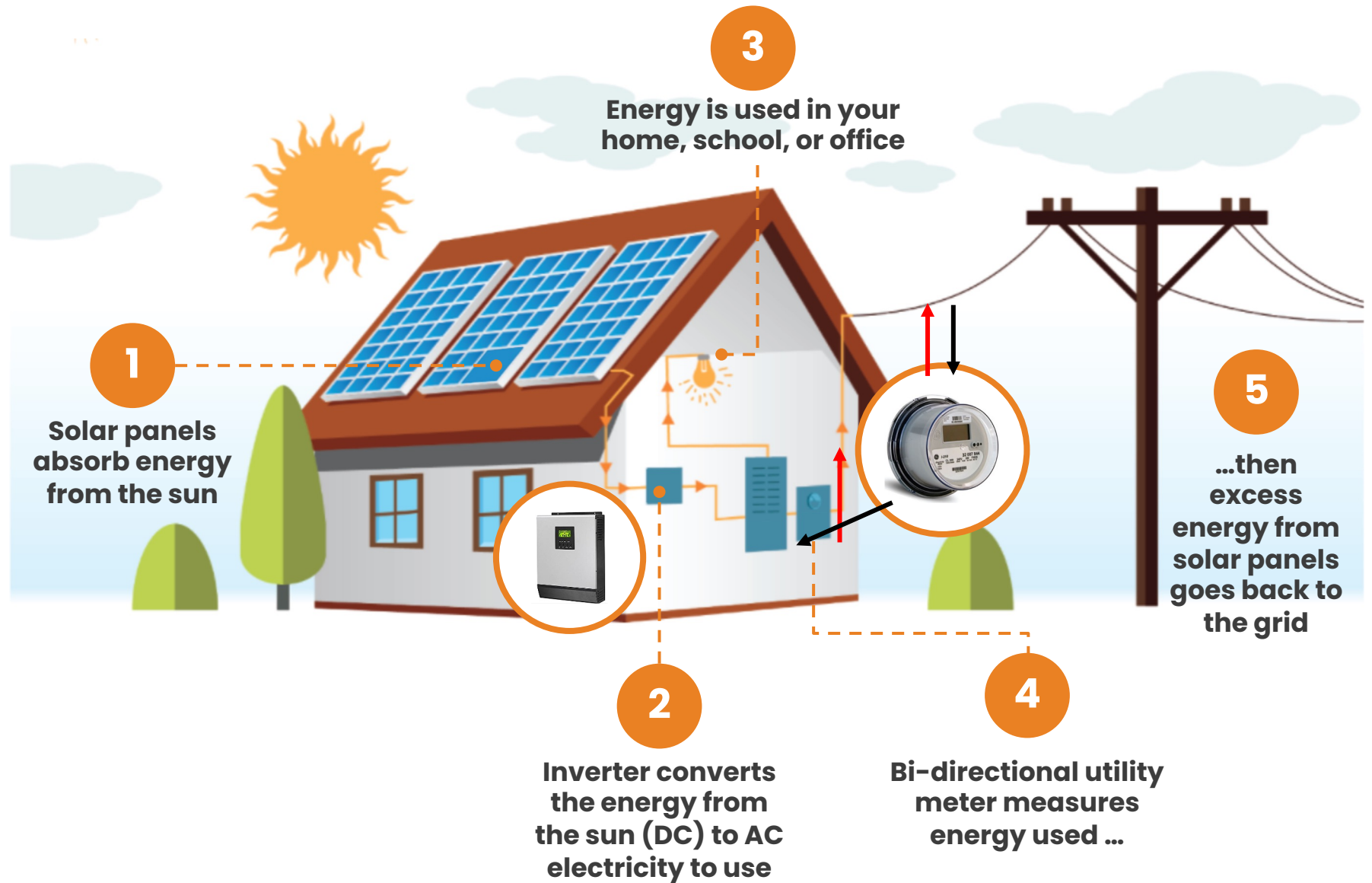
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*\* Not inclusive of state and local incentives*



# Net Metering



# Net Metering effect on electric bill

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<b>Example Electrical Bill</b>	
<b>electricity you consume</b>	300 kWh
<b>- electricity produced by solar</b>	250 kWh
<b>= amount of electricity you pay for on your bill</b>	50 kWh

- Fixed connection charge (i.e Dominion \$6.58 plus tax)
- Surpluses carried over month to month
- Annual billing cycle: based interconnection date

# We Can Help!

**Email: [VATeam@SolarUnitedNeighbors.Org](mailto:VATeam@SolarUnitedNeighbors.Org)**

- Understand pricing
- Components
- Warranties
- Economics/Incentives
- Financing options
- Compare Proposals





# Thank You!

Solar United Neighbors of VA  
[vateam@solarunitedneighbors.org](mailto:vateam@solarunitedneighbors.org)

