## **Welcome to Our Solar Power Hour!**



- Introduction to Zoom
- Sign up for a free site assessment by following the link in the chat











































## **Illinois Power Agency Consumer Protection Brochure**



Illinois Shines and the Adjustable Block Program are administered by InClime, Inc. on behalf of the Illinois Power Agency, an independent

#### What is illinois Shines?1

Illinois Shines is the brand name of the Adjustable Block Program, a state-administered program for new solar photovoltaic ("PV") systems. The program provides payments in exchange for 15 years of Renewable Energy Credits ("RECs") generated by new PV systems. These payments, made by Illinois utilities, vary depending on the system's size and where it is located. Participating in Illinois Shines is the same thing as participating in the Adjustable Block Program.

#### What are RECs and why are they valuable?

RECs represent the environmental value of the electricity generated from solar panels, but not the electricity itself. Whoever owns the RECs has the right to say they used that solar power. Utilities must purchase RECs to meet their obligation to supply a certain amount of power from renewable energy. RECs can also be valuable to businesses seeking to be able to say that they use solar power.

A home PV system might generate 50-200 RECs over 15 years. By participating in Illinois Shines, you will transfer the RECs from your PV system to an Illinois electric utility. Selling your RECs will not affect your PV system's production.

For more information on RECs, see a video at vimeo.com/113250210.

#### Do you have to allow your RECs to be sold in order to go solar?

Although you can keep your RECs or sell them to someone besides utilities, participating in Illinois Shines and thus allowing your RECs to be sold to a utility is likely to be your best financial option. Selling your RECs through this program will make it more likely that your PV system will save you money.



#### What Information will you receive before you sign an installation contract?

Your contractor is required to provide you with an Illinois Shines Standard Disclosure Form. It includes contact information for everyone who has a part in your solar contract, information about the installation process, and an estimate of your system's costs and how much money you may save. Review this form carefully.

#### What are the financing and ownership options when installing solar?

The most common options are 1) buying the system, 2) leasing the system, or 3) signing a Power Purchase Agreement ("PPA"), If you lease or sign a PPA, you don't own the system, but you get many of the benefits. For more information, see www.cesa.org/resource-library/

When deciding on the best option for you, consider:

- · If you're buying the system, how much will it cost? Will you take out a loan to pay for it? How do the loan payments compare to projected reductions in your monthly electric bill?
- · If you're leasing, how much is your monthly lease payment? How does that compare to projected reductions in your monthly electric bill? Do you have to put money down at the start?
- · If you're signing a PPA, how much is the per kilowatt hour price for the energy produced? How does that compare to your current electricity rate? Do you have to put money down at the start?
- Does vour lease or PPA include an escalation clause that increases the amount of payments over time? If so, by how much do payments increase?

resource/a-homeowners-guide-tosolar-financing-leases-loans-and-

Going solar is a major decision, so exercise the same caution you would when making other major consumer decisions. It is good to get quotes from at least three contractors and to check references. Also, make sure to read and understand the entire contract before signing it.

#### If you get solar panels, are you quaranteed to save money?

You are not guaranteed to save money unless your contract includes an explicit guarantee. The guestions below will affect whether you save money.2 You can answer some questions yourself, while others can be answered by your installer or sales

- · What per kilowatt-hour rate are you currently paying for electricity? The higher the electricity rate
  - before you go solar, the more money you can potentially save.
- · Is your roof good for solar? The direction your roof faces and how much shade it gets will affect how much electricity roofmounted PV will generate. The roof's condition should also be considered.
- · How much electricity will the system generate?

If your system produces more electricity than you use over an annual period, you may not receive credit for all the electricity generated.

- · How much money will you receive for RECs?
- The Approved Vendor will be paid by a utility for your system's RECs and may use some of that money to reduce your cost of going solar.
- · Can you use the federal **Investment Tax Credit?** If you buy your system, you may qualify for a substantial federal income tax credit. Consult your tax adviser
- · How long do you expect to stay In your home or business location? If you lease or sign a PPA, you may be required to buy out the contract if you move. Read your contract to find out what happens if you move.

#### What is net metering and how do you enroll?

Net metering measures the electricity your PV system produces and credits you for it on your electric bill. If you



buy electricity from your utility (e.g., basic service or hourly pricing), you must contact the utility to enroll in net metering. If you buy electricity from a Retail Electric Supplier (e.g., through municipal aggregation or an individual contract), you must contact the supplier to enroll in net metering. If you later change your electricity supplier, you will need to re-enroll in net metering with your new supplier. Failure to enroll or re-enroll may significantly impact the value you receive from your PV system.

#### Consumer rights

For your PV system to participate in Illinois Shines, an Approved Vendor will submit your PV system for application to the program, (The Approved Vendor will be identified on the Standard Disclosure Form you receive.) If the application is approved and after the system starts operating, the Approved Vendor will receive payments for the first 15 years of your system's RECs. You have a right to request Information about your system's application status and how

much a utility is paying for its RECs. Some of that information will be on the Standard Disclosure Form. The Approved Vendor must respond to issues related to ensuring that your PV system is generating electricity and producing RECs. Only companies that are Approved Vendors can submit your system to participate in the program.

#### Complaint procedures

If you have a problem related to your PV system or the sales process, first try to resolve it with your installer or the Approved Vendor. If you can't agree about how to solve the problem, you may contact the Illinois Shines/Adjustable Block Program Administrator by emailing admin@illinoisshines.com or by calling 877-783-1820.

If you have been subject to fraudulent or deceptive sales practices, the Illinois Attorney General's Consumer Protection Division may be able to help. Customers can contact it at:

800-386-5438 | TTY: 800-964-3013

Springfield 800-243-0618 | TTY: 877-844-5461

Carbondale 800-243-0607 | TTY: 877-675-9339

Spanish Language

#### For more information, go to www.illinoisshines.com

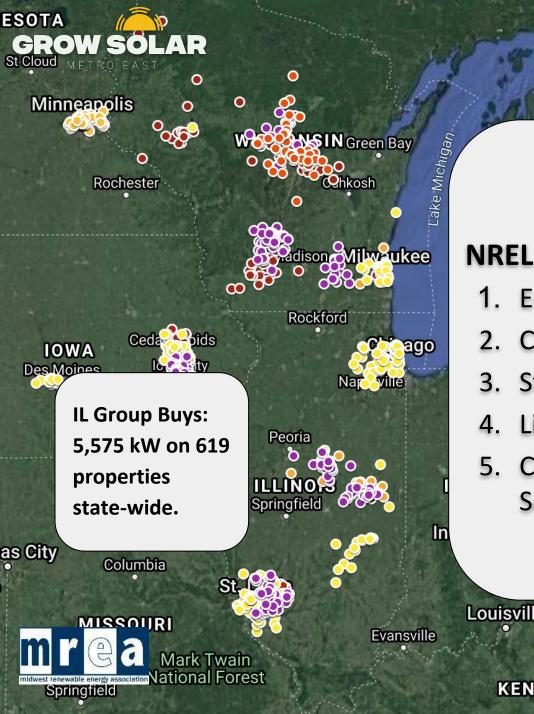
- 1 This brochure is designed primarily for customers of Ameren Illinois Company, Commonwealth Edison Company, and MidAmerican Energy Company. For consumers electric cooperative, municipal utility, or Mt. Carmel Public Utility territories, some policies—such as net metering—may vary. Contact those utilities for details
- 2 Commercial and multi-family residential buildings may be eligible for a rebate for a smart inverter. See https://illinoissolar.org/blog/6172611; also see www.comed.

JANUARY 2019









# What is a **Group Buy?**

Manitoulin

Island

### **NREL Model for Lower Prices:**

- 1. Economy of Scale
- Community-Led Outreach
- **Strong Customer Education**
- Limited-time Offering
- 5. Competitive Contractor Selection

**Everyone** wins!

Louisville

WEOI VIRGINIA

Lexington

**KENTUCKY** 

VIRGINIA Roanoke•

Algonquir Provincial Park

to

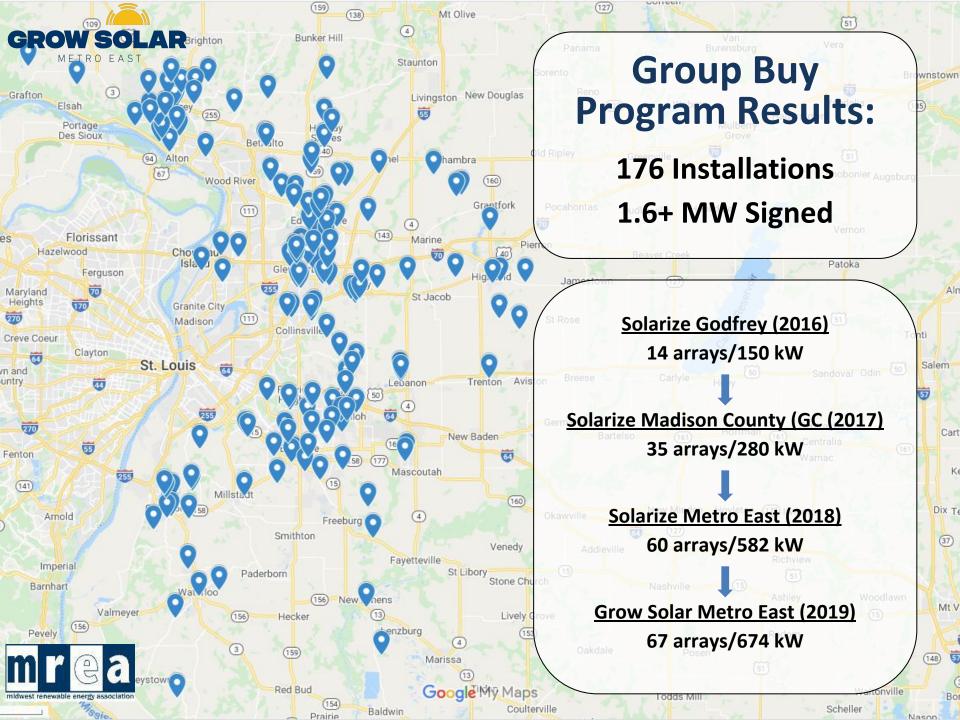
ga

Roc

Buffalo

PENNSY

Ric





# **Grow Solar Metro East Group Buy Program**

- 30 Virtual Solar Power Hour outreach sessions.
- Open to Calhoun, Madison, Monroe and St. Clair County residents, businesses, farms & nonprofits.
   System sizes 3.8 - 35 kW DC.
- <u>All-in Pricing</u>. Program pricing includes turnkey design, permitting, components, installation
- Additional rebates as more arrays are installed in Grow Solar territory
- Deadline: August 31
- MO residents can participate in Grow Solar St. Louis











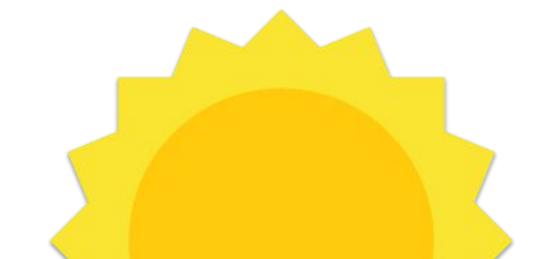


## About StraightUp Solar

- → Founded in 2006
- → Serves IL and MO
- → Won 12 MREA group buy programs
- → 1400+ installations
- → Part of Amicus Solar Cooperative
- Certified B Corporation
- → 75+ Employees with over 30% with NABCEP Certification
- → Tesla Powerwall and REC Premium Installer
- → 10-year workmanship and production warranty



# How Does Solar Work? Part 2 of 5







# What's a Kilowatt (kW) and a Kilowatt Hour (kWh)?



#### KILOWATT HOUR (kWh)

a unit of energy used or produced. This is what shows up on your bill.



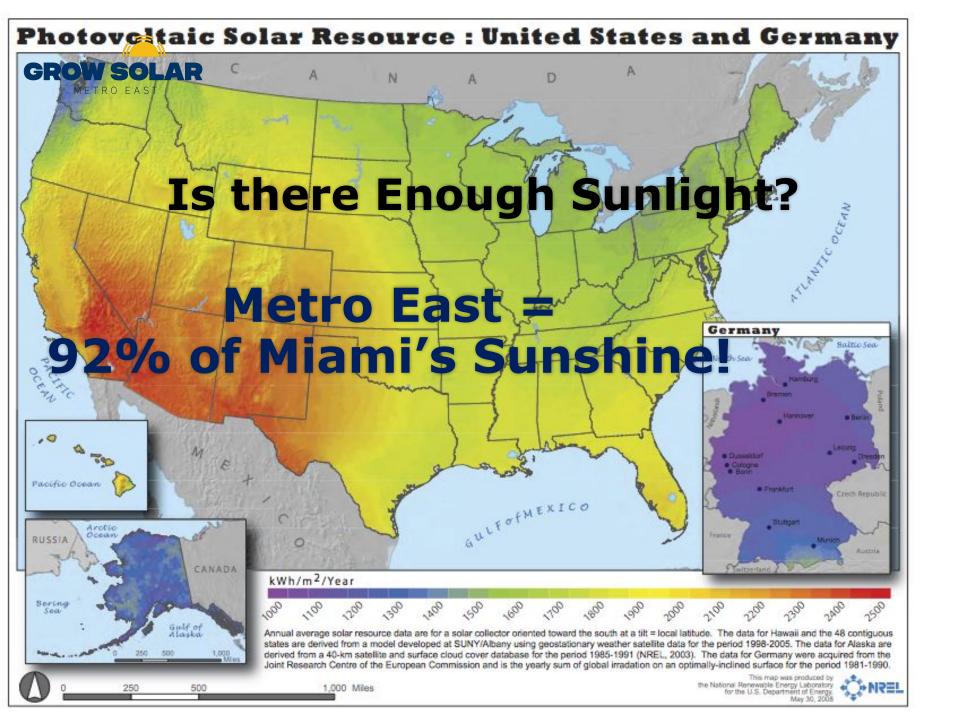
#### KILOWATT (kW)

a measurement of capacity: how big your array is.

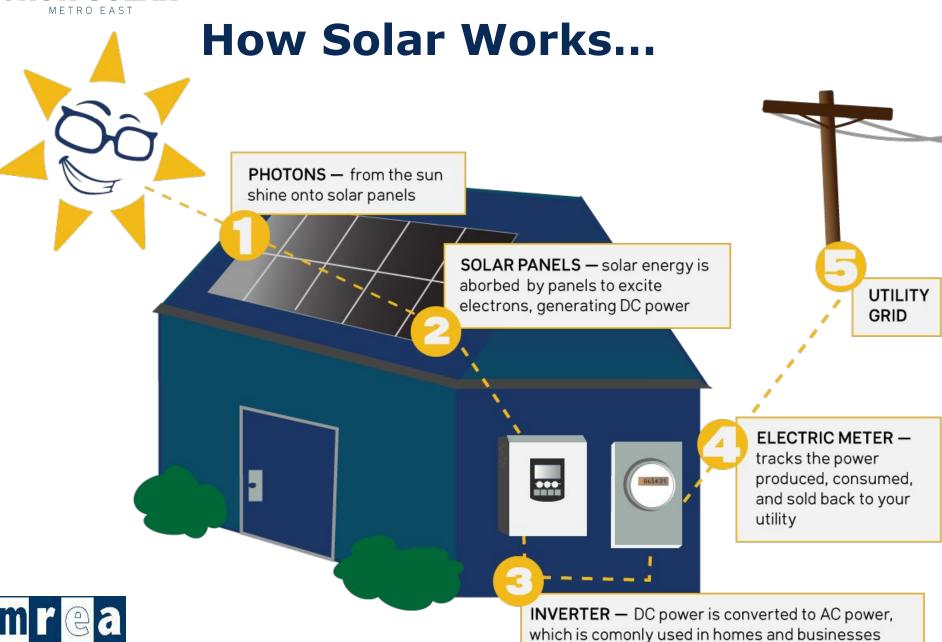


Every home's system size and energy use is different.



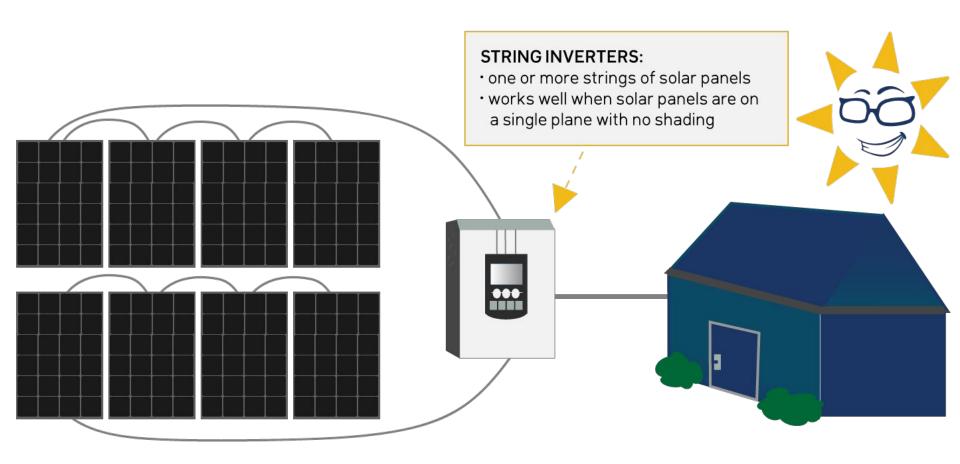








## **Inverter: The heart of the solar array**



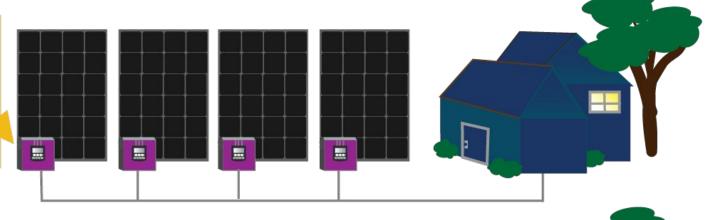




# Inverter: The heart of the solar array

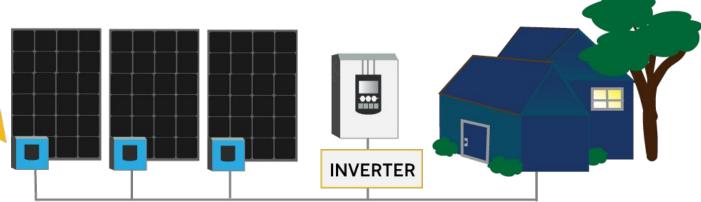
#### MICRO INVERTERS:

- · one microinverter per panel
- function well on roofs with shade or multiple panel orientations

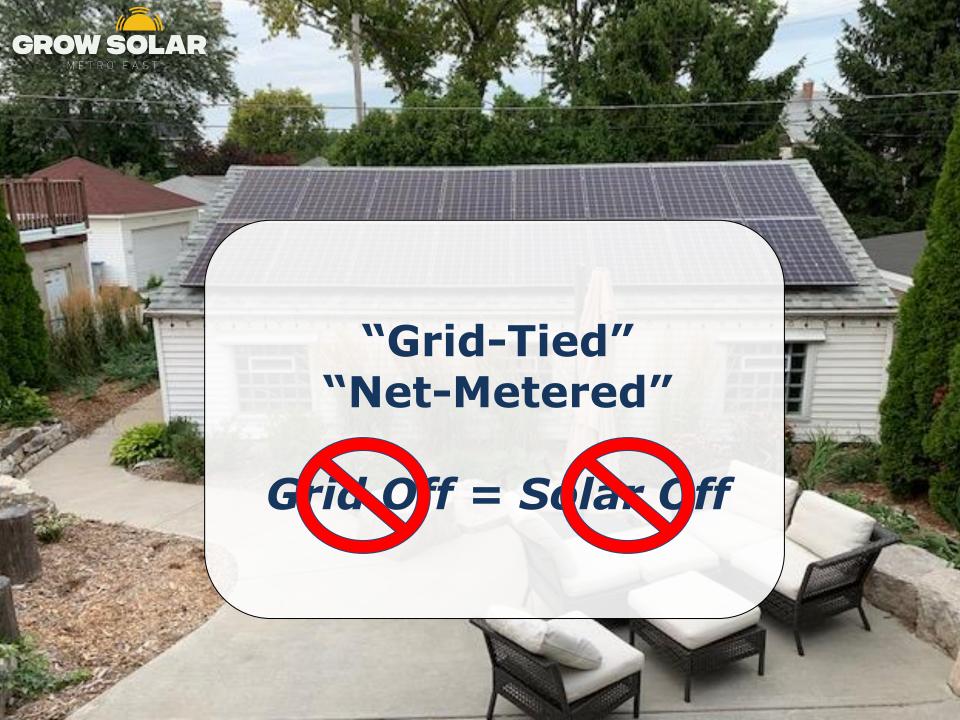


#### **POWER OPTIMIZERS:**

- one optimizer per panel,plus central string inverter
- function well on roofs with shade or multiple panel orientations

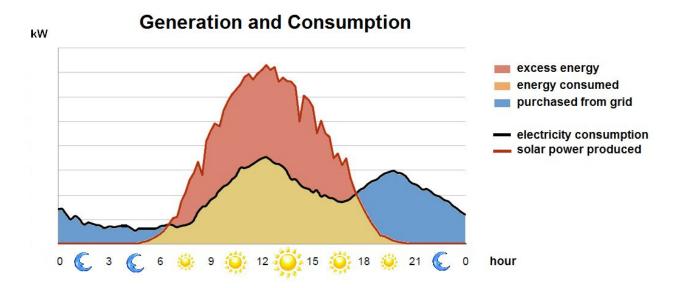




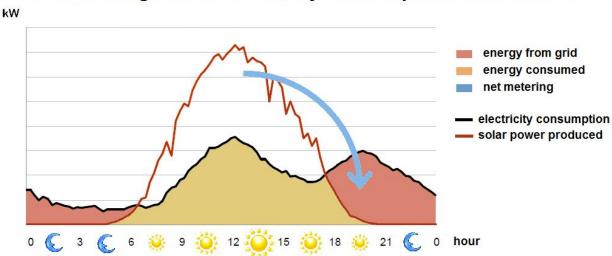




# "A Day in the Life" of a Grid-Tied/Net Metered Home



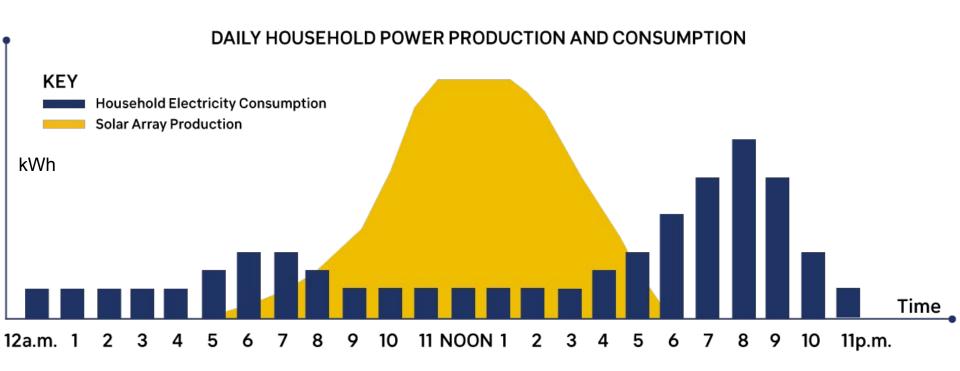
#### Net Metering Allows Electricity Consumption When Needed





# "A Day In The Life" Of a Grid Tied, Net Metered Solar Array

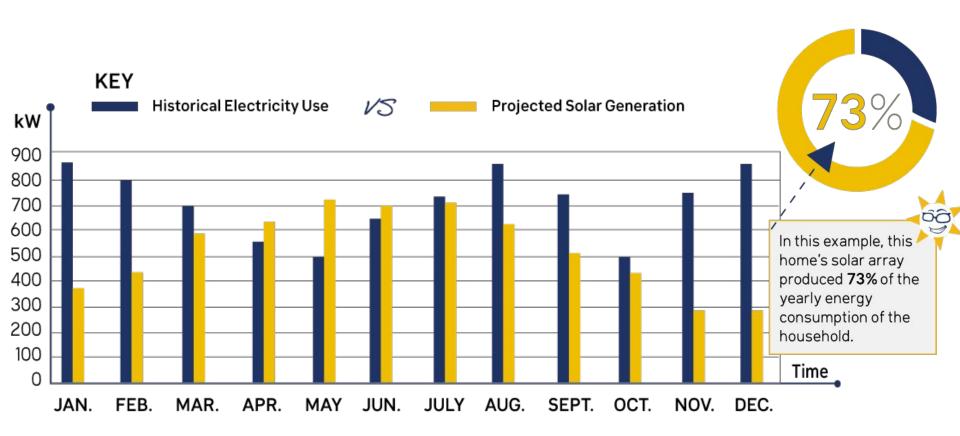
- Generally calculated on a monthly basis
  - Ameren, Southwestern Electric Coop & Muni's have different policies





### ROW SOLAR METRO EAST

# "A Year In The Life" Of a Grid Tied, Net Metered Solar Array







# Reduce Your Energy Bill

Energy Costs for 7.2kW Array



Estimated electric bill over 25 Years: 11.4 cents/kWh + 2.0% annual increase

25-year electricity cost post-solar: 6.5 cents/kWh

Estimated 25-Year Savings: \$31,352!





Statement Issued

05/22/2019

**Amount Due** 

**Due Date** 

Jun 12, 2019

**Account Number Customer Name** 

Service Address

BELLEVILLE, IL 62220

Payment I	Detail	s
-----------	--------	---

DATE

AMOUNT

**Payment Received** 

April 26, 2019

Electric Service	Kesiaentiai Billing	j Detaii - Kate Zone III

04/10/2019 - 05/15/2019 (35 days)

Electric Meter Read for 04/10/2019 - 05/15/2019 (	(35 days)
---	-----------

READ TYPE	METER NUMBER	<b>CURRENT METER READ</b>	PREVIOUS METER READ	READ DIFFERENCE	MULTIPLIER	USAGE
Total kWh	72260189	389.0000 Actual	0.0000 Actual	389.0000	1.0000	389.0000
Peak kW	72260189	6.1940 Actual	0.0000 Actual	6.1940	1.0000	6.1940
kWh Out	72260189	902.0000 Actual	0.0000 Actual	902.0000	1.0000	902.0000

Energy **Used From** The Grid

#### **Usage Summary**

Total kWh On-Site Excess Gen kWh

Del Prior Carryovr Gen Delivery Carryovr Gen kWh

Supply Prior Carryovr Gen

Supply Carryover Gen kWh

Energy Sent To

Non-Summer kWh 389,0000 -902.0000 Delivery Net Total kWh Delivery Net Billable kWh

-513,0000 Supply Net Total kWh 0.0000 Supply Net Billable kWh

-513.0000

**Net Metering** Value

-513.00000.0000 -513.0000 0.0000

389.0000

The Grid Net Metering-Method A/C-Non-TOU Smart Meter

CHARGE DESCRIPTION

**Electric Delivery** Ameren Illinois

DS-1 Residential Delivery

Service

**Customer Charge** Meter Charge

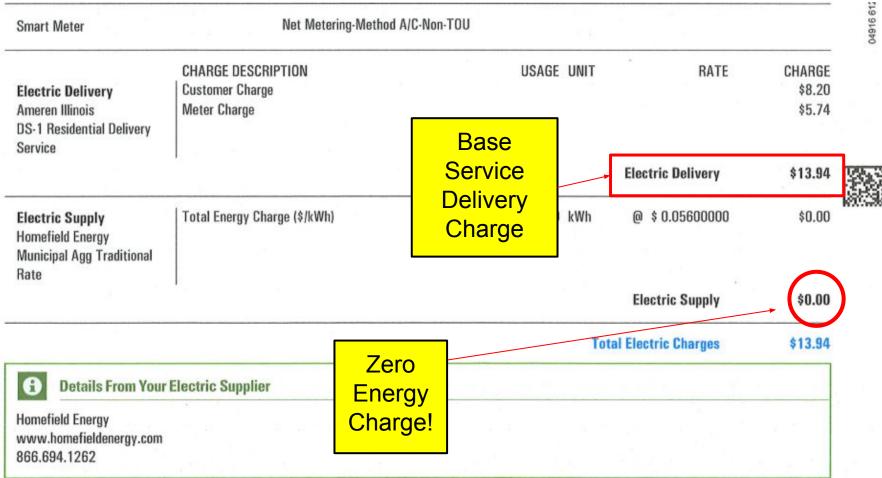
**USAGE UNIT** 

RATE

CHARGE \$8.20 \$5.74

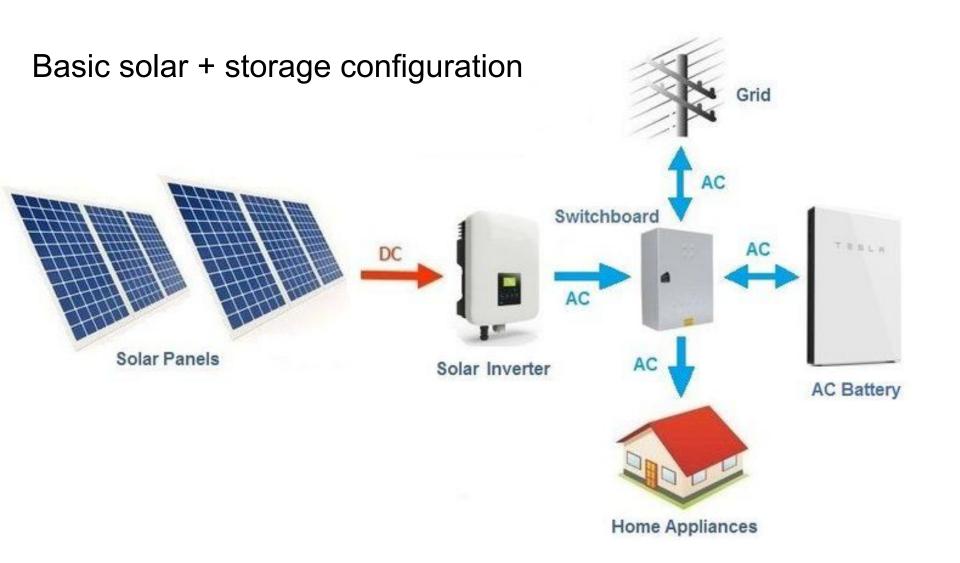
Total Charges = \$13.94



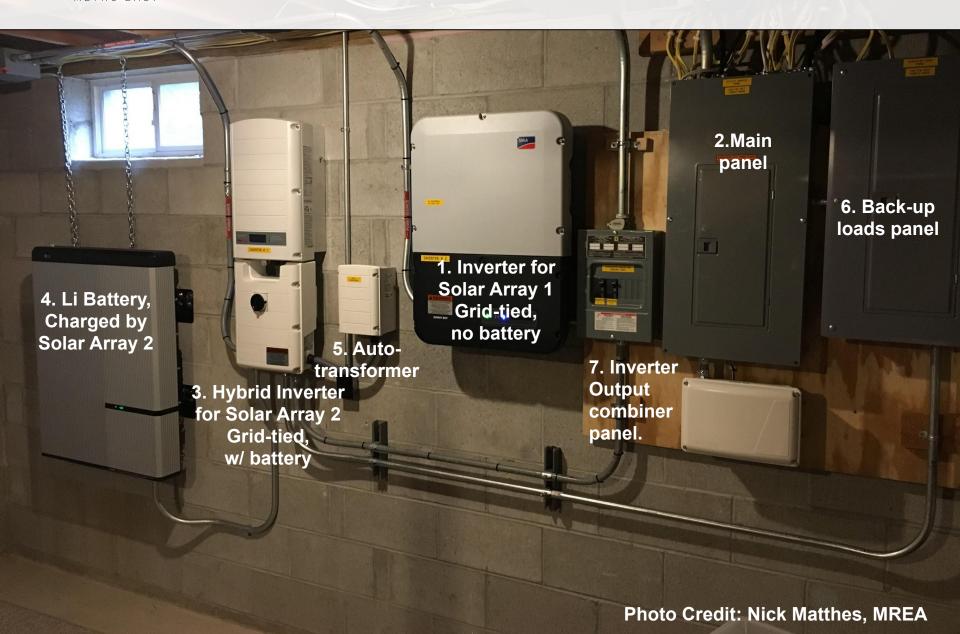








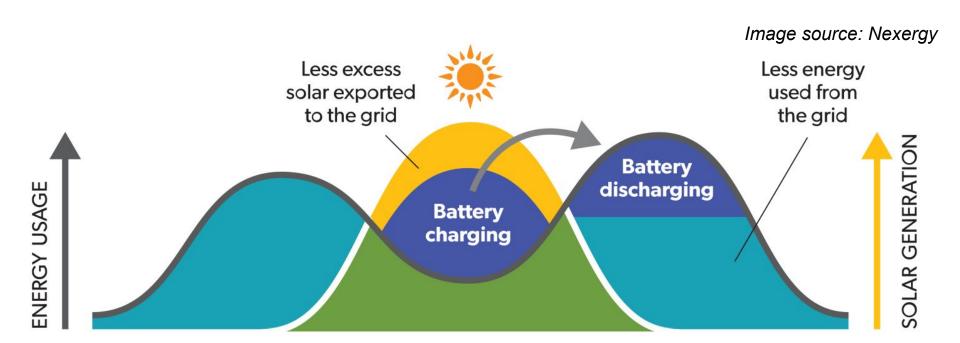






### Financial cases for batteries

- **Time of Use (TOU)** If your utility charges you different rates depending on the time of day that electricity is being used...
- Demand Charges Some utilities have demand charges, meaning your electricity rate varies based on your peak demand, which is the period of time during the billing cycle that you use the greatest amount of electricity (usually calculated in 15 minute increments).
- **Net Metering** If the excess generation from your solar array is credited at avoided cost rates (i.e. wholesale electricity prices)....





# Options & Considerations Part 3 of 5







# **Flexible Installation Options**













# It's time for a poll!





# **Every Home Is Different**

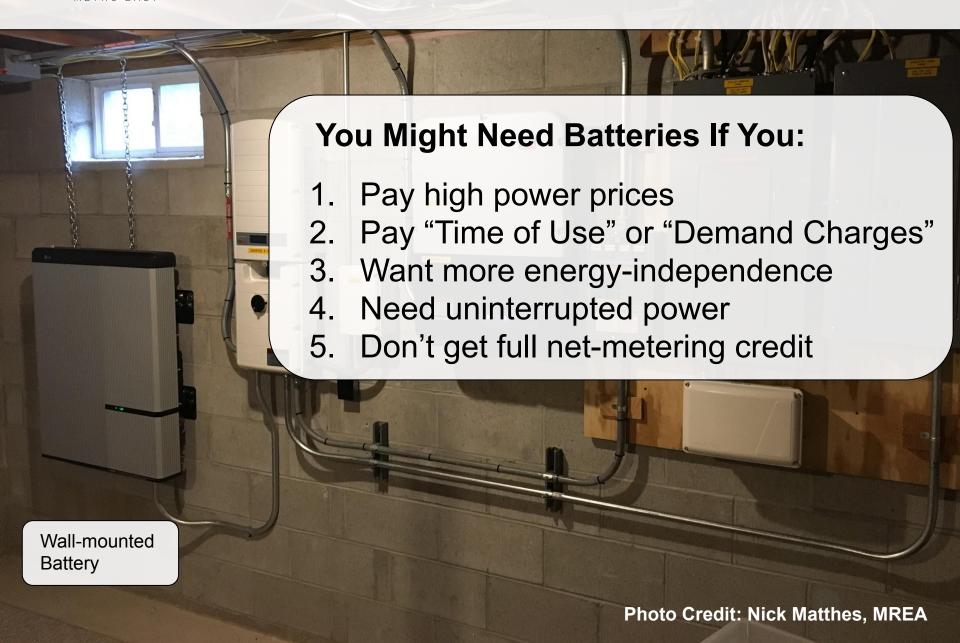


- System size and design
- Age & type of roof
- Panel type
- Inverter type
- Slope, height of roof
- Complexity of electrical interconnection
- Multiple PV arrays
- Energy storage?

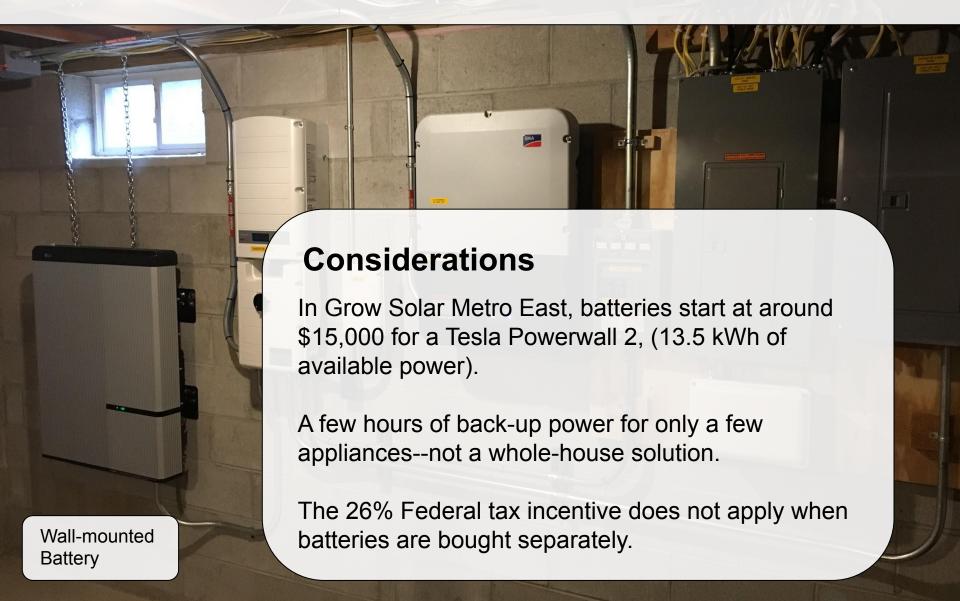
**Pricing Varies by Site & Needs** 













## IL Homeowner's Solar Rights Act

#### Section 1. Short title. This Act may be cited as the Homeowners' Solar Rights Act.

Section 5. Legislative intent. The legislative intent in enacting this Act is to protect the public health, safety, and welfare by encouraging the development and use of solar energy systems in order to conserve and protect the value of land, buildings, and resources by preventing the adoption of measures which will have the ultimate effect, however unintended, of preventing the use of solar energy systems on any home that is subject to a homeowners' association, common interest community association, or condominium unit owners' association.

Section 10. Definitions. In this Act:

"Solar energy" means radiant energy received from the sun at wave lengths suitable for heat transfer, photosynthetic use, or photovoltaic use.

"Solar collector" means:

- (1) an assembly, structure, or design, including passive elements, used for gathering, concentrating, or absorbing direct and indirect solar energy, specially designed for holding a substantial amount of useful thermal energy and to transfer that energy to a gas, solid, or liquid or to use that energy directly; or
- (2) a mechanism that absorbs solar energy and converts it into electricity; or
- (3) a mechanism or process used for gathering solar energy through wind or thermal gradients; or
- (4) a component used to transfer thermal energy to a gas, solid, or liquid, or to convert it into electricity.

"Solar storage mechanism" means equipment or elements (such as piping and transfer mechanisms, containers, heat exchangers, or controls thereof, and gases, solids, liquids, or combinations thereof) that are utilized for storing solar energy, gathered by a solar collector, for subsequent use.

"Solar energy system" means:

- (1) a complete assembly, structure, or design of solar collector, or a solar storage mechanism, which uses solar energy for generating electricity or for heating or cooling gases, solids, liquids, or other materials; and
- (2) the design, materials, or elements of a system and its maintenance, operation, and labor components, and the necessary components, if any, of supplemental conventional energy systems designed or constructed to interface with a solar energy system.

Section 15. Associations; prohibitions. Notwithstanding any provision of this Act or other provision of law, the adoption of a bylaw or exercise of any power by the governing entity of a homeowners' association, common interest community association, or condominium unit owners' association which prohibits or has the effect of prohibiting the installation of a solar energy system is expressly prohibited.

Section 20. Deed restrictions; covenants. No deed restrictions, covenants, or similar binding agreements running with the land shall prohibit or have the effect of prohibiting a solar energy system from being installed on a building erected on a lot or parcel covered by the deed restrictions, covenants, or binding agreements, if the building is subject to a homeowners' association, common interest community association, or condominium unit owners' association. A property owner may not be denied permission to install a solar energy system by any entity granted the power or right in any deed restriction, covenant, or similar binding agreement to approve, forbid, control, or direct alteration of property.

However, for purposes of this Act, the entity may determine the specific location where a solar energy system may be installed on the roof within an orientation to the south or within 45 degrees east or west of due south provided that the determination does not impair the effective operation of the solar energy system. Each homeowners' association, common interest community association, or condominium unit owners' association shall adopt an energy policy statement regarding the location, design, and architectural requirements of solar energy systems within 120 days after an association receives a request for a policy statement or an application from an association member. An association shall disclose, upon request, its energy policy statement and shall include the statement in its homeowners' common interest community, or condominium unit owners' association declaration.

Section 25. Standards and requirements. A solar energy system shall meet applicable standards and requirements imposed by State and local permitting authorities.

Section 30. Application for approval. Whenever approval is required for the installation or use of a solar energy system, the application for approval shall be processed by the appropriate approving entity of the association within 90 days after the submission of the application. However, if an application is submitted before an energy policy statement is adopted by an association, the 90 day period shall not begin to run until the date that the policy is adopted.

Section 35. Violations. Any entity, other than a public entity, that willfully violates this Act shall be liable to the applicant for actual damages occasioned thereby and for any other consequential damages. Any entity that complies with the requirements of this Act shall not be liable to any other resident or third party for such compliance.

Section 40. Costs; attorney's fees. In any litigation arising under this Act, the prevailing party shall be entitled to costs and reasonable attorney's fees.

Section 45. Inapplicability. This Act shall not apply to any building which is greater than 30 feet in height

#### Public Act 096-1436





# **Energy Efficiency**

StraightUp Solar will reimburse up Ameren's efficiency incentive program can be to \$150 for an energy audit\*

ENERGY STAR APPLIANCES

EFFICIENCY & CONSERVATION MEASURES

AIR SEALING



\* Energy efficiency auditor must be certified by Home Performance with ENERGY STAR. See **Missouri Botanical Garden's Sustainable Living At Home** webpage for approved contractors.

& INSULATION

There are many more ways to make your home or business as efficient as possible!



# What Are The Incentives? Part 4 of 5



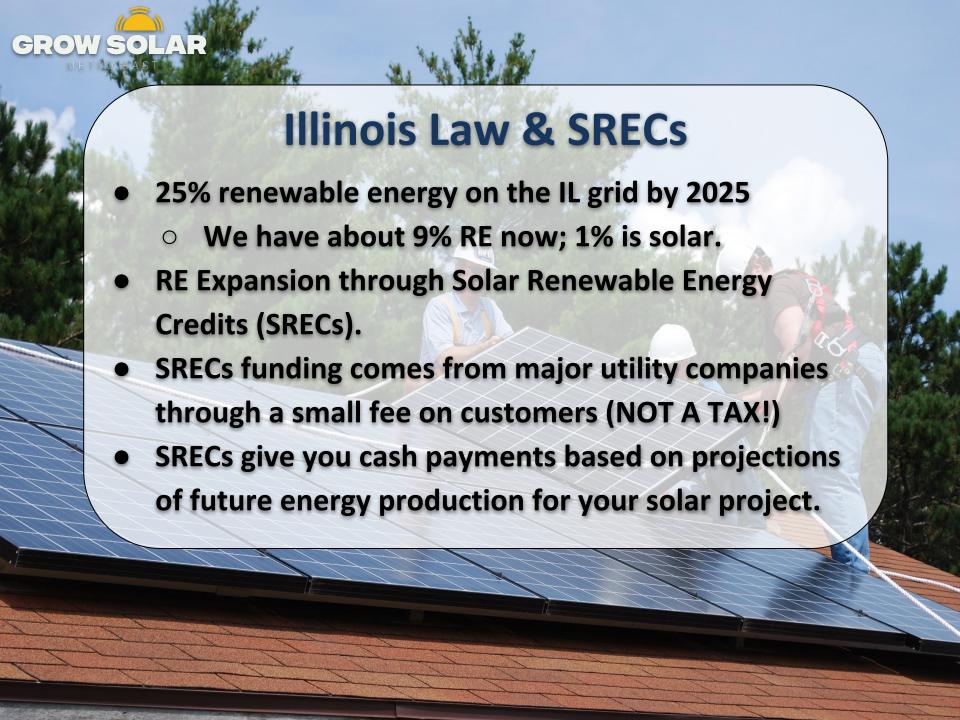


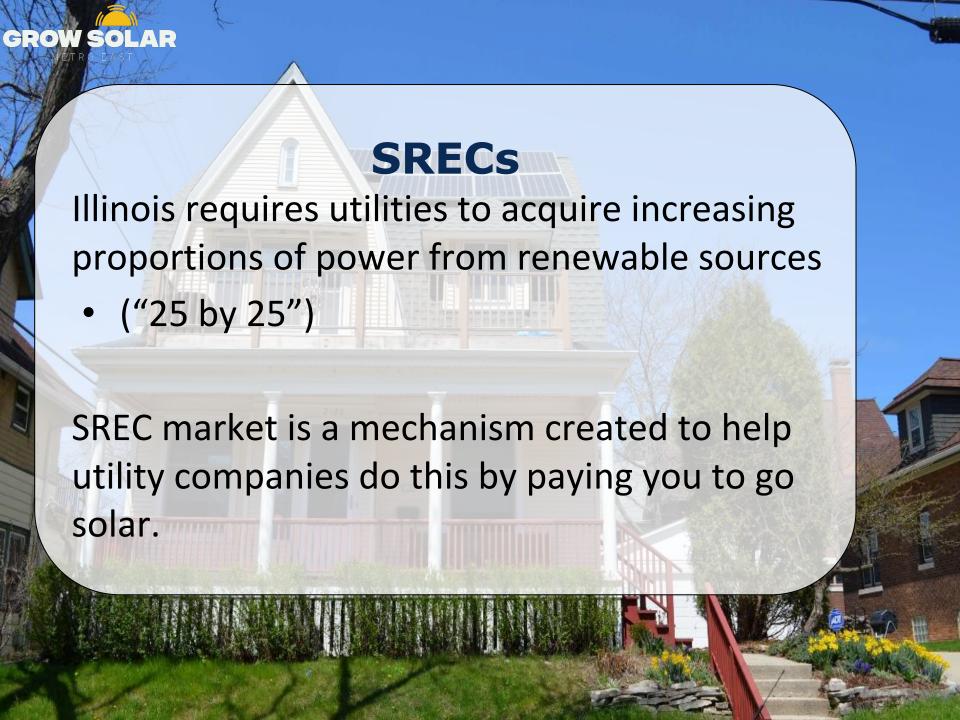


# Residential & Commercial Renewable Energy Tax Credit (Federal)

- Tax credit of 26% on qualified expenditures
  - Includes labor costs, system installation, interconnection wiring
  - Does not include new roof unless roof reinforcement is necessary to support the solar panels
- No maximum credit, but requires you have tax appetite
- Steps down to 22% in 2021. (Goes away completely for residential in 2022.)
- A home must be owned by the taxpayer but does not have to serve as the principal residence
- Incentive details at energystar.gov or irs.gov

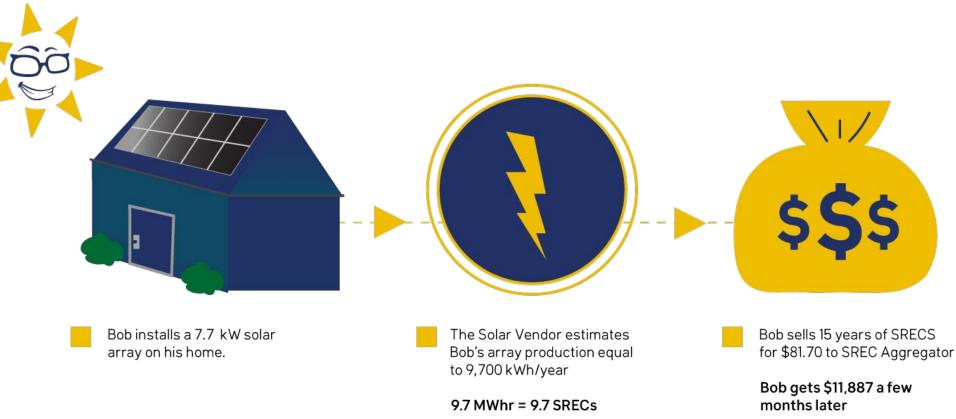








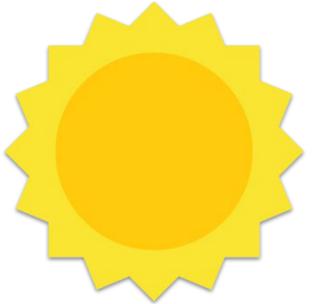
#### **Solar Renewable Energy Credits** SRECS = "Green Value"



- \* For <10 kW AC systems in Illinois. Does not Illustrate administrative fees.
- SREC income is taxable
  - SREC Aggregator: Carbon Solutions Group--NOT the solar vendor
  - ~5% security withhold until Year 15







# Solar Case Study









# **Customized Site Assessment**



- System size and layout
- Module type
- Inverter type
- Slope, height of roof

- Complexity of electrical interconnection
- Type of roofing material
- Multiple PV arrays





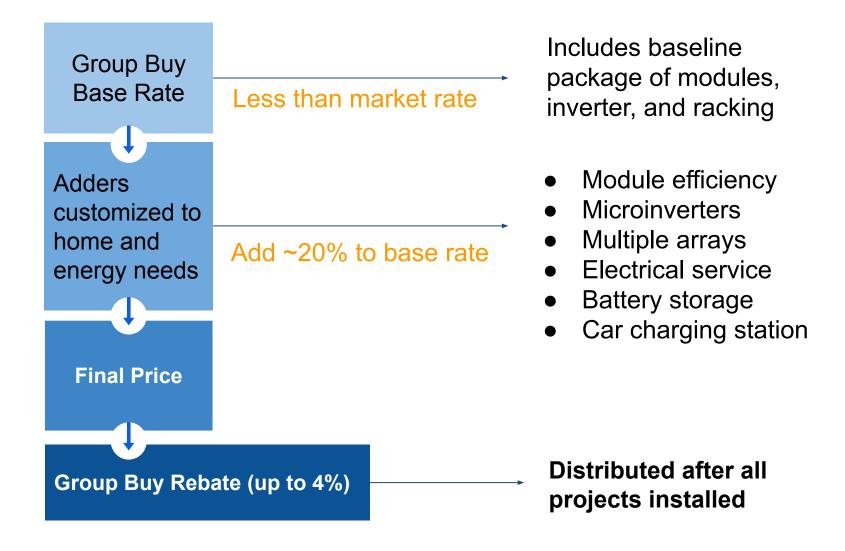
# Solar Costs Part 5 of 5







### **Pricing Structure**









ST. LOUIS

### **How It Works**

The more people go solar, the lower the price:

Base price is lower than StraightUp Solar's market rate.

VOLUME REBATES VOLUME REBATES						
TOTAL kW	>50 kW	>150 kW	>300 kW	>500 kW	>1,000 kW	>1,500 kW
NUMBER OF HOMES	7-10 HOMES	21-30 HOMES	40-55 HOMES	70-100 HOMES	140-200 HOMES	210-300 HOMES
TOTAL REBATE	.5%	1%	1.5%	2%	3%	4%

Totals from Grow Solar Metro East and Grow Solar St. Louis combine for the benefit of all!



#### **Solar System Price Spectrum**



\$20,000 Ground Mount Array, 5-6kW

\$11,500 after incentives \$185/month 12-yr loan

> \$40,000 Two Arrays, Two Roofs, 10+kW

\$10,000

One Array <4kW



\$30,000

Two Arrays, One Roof, 7-9kW





### **Financing Solar**

#### **Clean Energy Credit Union**

100% clean energy loans 1st of its kind launched 2017



- Wholly-owned by Amicus Solar members
- Choose one or both of these loan types:
  - 12-18 month loan for 26% of system cost (covers the 26% Federal Tax Credit)
  - 12-year fixed rate loan up to the remaining
    74% solar electric system cost



#### 7.2 KW Residential System

EXAMPLE	GSME Price	Market Price
Installed Cost *	\$24,048	\$30,096
26% Federal Tax Credit	-\$6,252	-\$7,824
Est Pre-tax SREC Payments	-\$10,515	-\$10,515
Max group buy savings (4%)	-\$961	\$0
Net Cost	\$6,320	\$11,757









#### 7.2 KW Residential System

#### **Grow Solar Price**

#### VS

#### **Market Price**

7.2 KW Metro East Resi Roof Array				
Installed Cost (\$3.34 Watt)	\$24,048			
26% Federal Tax Credit	-\$6,252			
Est Pre-tax SREC Payments	-\$10,515			
Max group buy savings (\$4%)	-\$961			
Net Cost	\$6,320			

7.2 KW Market Price Resi Roof Array				
Installed Cost (\$4.18/ Watt*)	\$30,096			
26% Federal Tax Credit	-\$7,824			
Est Pre-tax SREC Payments	-\$10,515			
Group buy savings	\$0			
Net Cost	\$11,757			





## Five Easy Steps to Solar

1

2

3

4

5

**Get Started** 

Share basic information about your home with a Solar Support Specialist to start the process.

Set Custom
Plan

Receive a
customized
system
layout,
proposal, and
contract from
a Project
Developer.

Project Guidance

Work with your Project Manager through the engineered design and permitting process

Install & Energize

Set a date for our highly-trained installation crew to build, inspect, and energize your system. **Enjoy!** 

Enjoy your new solar array!





### **Solar Financing Options**

#### **Clean Energy Credit Union**

- 100% clean energy loans--1st of its kind launched 2017
- Wholly-owned by Amicus Solar members
- Choose one or both of these loan types:
  - •12-18 month loan for 30% of system cost (covers the 30% Federal Tax Credit)
  - •12-year fixed rate loan up to the remaining 70% solar electric system cost

#### The BANK of Edwardsville

- Special solar application for Credit Express Home Equity Line of Credit loan
- Contact Brad Porter, Glen Carbon Banking Manager at bporter@4thebank.com or 618-659-4234

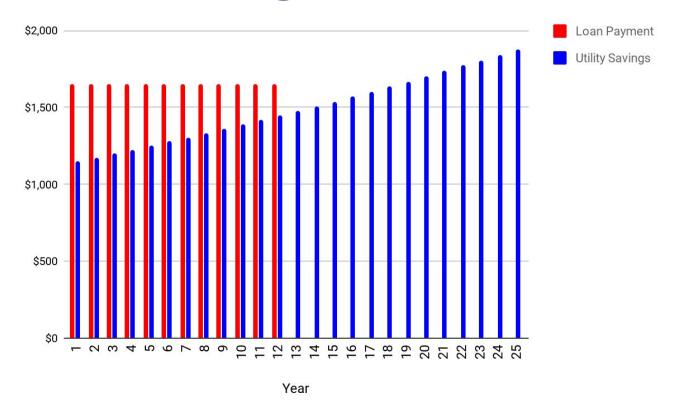








### **Financing Schedule**

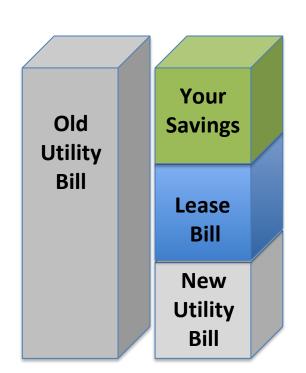






# **New Opportunity: Residential Lease**

#### **Residential Lease**



20-year Lease options:

- 10% below current utility rates (0% escalator) OR,
- 20% below current utility rates (2% escalator)

Lease Option Provided by SUNPOWER®

- Includes a Production Guarantee
- Lease participants relinquish tax credits & SREC payment rights





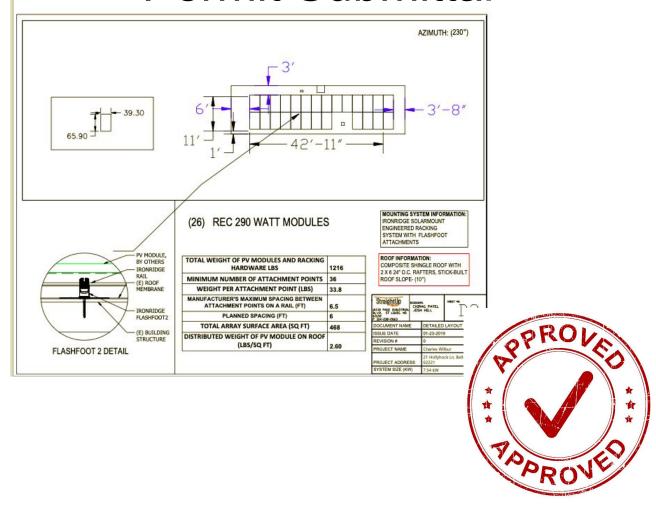
(26) REC 290 WATT MODULES
(1) SOLAREDGE 6000 W INVERTER







# Engineered Drawings - Permit Submittal

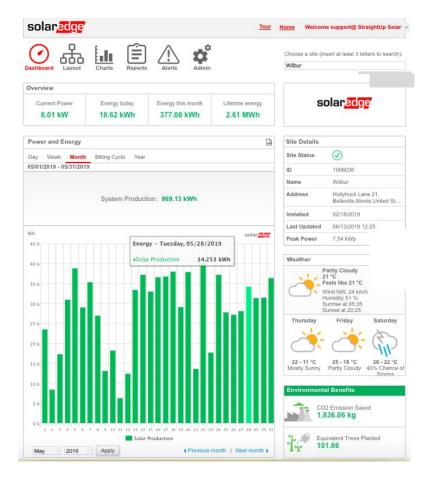








### **Home Energy Report**













# Stay Informed: Become a Member of the MREA!



# Promoting renewable energy, energy efficiency, and sustainable living through education and demonstration.

- \$20 Off All Courses
- Invite to Virtual Membership Meeting
- Access to Clean Energy Credit Union
- Subscription to Newsletter
- Free Online Tutorials
- Free Rise Up! Publication Mailed to You

Everyone who goes solar through the program gets a FREE Basic Family Membership!





# StraightUp

### Our Contact Information

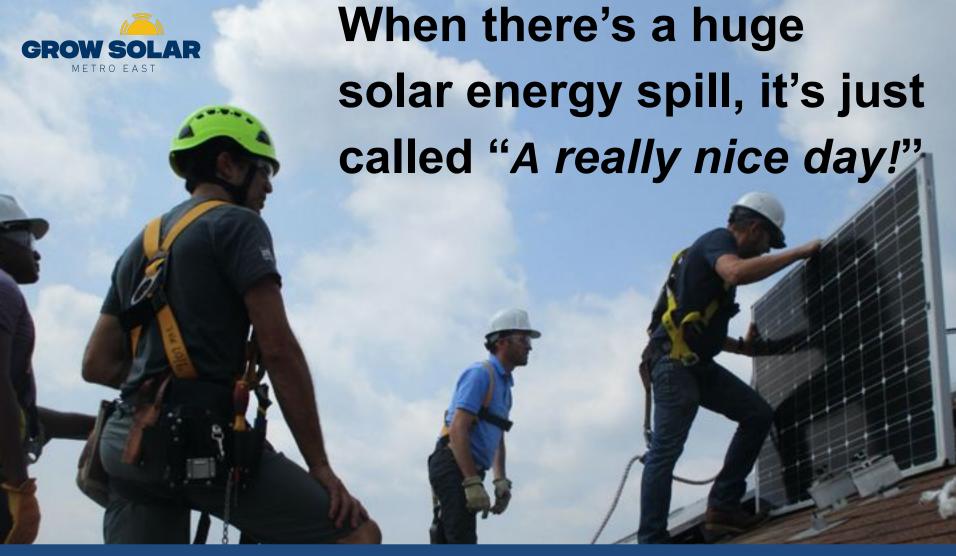
- → Sign Up for a 15
  Minute Solar
  Assessment of Your
  Home
  (link is in the Chat)
- → Reach out:

  Brent Ritzel

  brent.ritzel@straightupsolar.com

  314-662-2693
- → Get More Information:
   StraightUpSolar.com
   844-97-SOLAR





# Thank you for attending! GrowSolarMetroEast.org

Presenters: Kevin McKee, Virginia Woulfe-Beile, or Sheila Voss Feedback? Questions? PeterM@midwestrenew.org