# Welcome to Our Solar Power Hour!

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











Climate Protection and Energy Efficiency Committee | CPEEC





















# Thank You To Our Co-Host! SIERRA CLUB Piasa Palisades Group

# www.sierraclub.org/illinois/piasa-palisades





# Thank You To Our Co-Host! Glen Carbon Centennial Library

198 South Main Street | Phone: 618-288-1212 | www.glencarbonlibrary.org

# glencarbonlibrary.org





# Thank You To Our Co-Host! Mational Creat Research & Education

#### www.ngrrec.org







## watershednaturecenter.org







## www.oldbakerybeer.com







## www.columbialibrary.org





# Thank you to our Co-host!



# Investing In The Nature Of Southwestern Illinois

# www.heartlandsconservancy.org





# Thank You To Our Co-Host! MADISON COUNTY BUILDING & ZONI NG www.co.madison.il.us



# Six Mile Regional Library District Education • Information • Instruction

### www.smrld.org





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



#### 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.

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



#### 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/ resource/a-homeowners-guide-tosolar-financing-leases-loans-andppas.

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 your lease or PPA include an escalation clause that increases the amount of payments over time? If so, by how much do payments increase?

#### 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.<sup>2</sup> You can answer some questions yourself, while others can be answered by your installer or sales agent.

• 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



much a utility is paying for its RECs. (e.g., basic service or hourly pricing), Some of that information will be on you must contact the utility to enroll the Standard Disclosure Form. The in net metering. If you buy electricity 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:

Chicago 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

866-310-839

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.

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. com/SmartEnergy/InnovationTechnology/Pages/DGRebate.aspx and www.ameren.com/illinois/electric-choice/renewables/distributed-generation

ILLINOIS POWER AGENC

buy electricity from your utility

from a Retail Electric Supplier (e.g.,

through municipal aggregation or

an individual contract), you must

contact the supplier to enroll in net

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

For your PV system to participate

in Illinois Shines, an Approved Vendor

cation to the program. (The Approved

Vendor will be identified on the Stan-

will submit your PV system for appli-

PV system.

**Consumer rights** 

metering. If you later change your

#### dard 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

## GROW SOLAR

# Today's Agenda

- What is the GSME Group Buy Program?
- How does Solar Power work?
- Costs and cost-saving incentives
- How to begin your solar journey

> We will simplify a complex topic!!! <















- Open to 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, 2021
- Complementary programs: Grow Solar St. Louis & RenewSTL

# StraightUp





# About StraightUp Solar

- → Founded in 2006
- → Serves IL and MO
- → 1700+ installations
- → 85+ Employees with over 46% with NABCEP Certification
  - Won 13 MREA group buy programs
- → Certified B Corporation
- → Amicus Solar Cooperative member
- → 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.





# Configuration: How It Works...





# Inverter, the heart of the array.







# Inverter, the heart of the array.







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



Image source: Energy Sage

#### Microinverters

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



microinverters

#### **Power Optimizers**

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







Image source: Energy Sage

power optimizers

inverter



# Grid-Tied VS. Off-Grid













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





Net Metering is generally calculated on a monthly basis
 Net Metering policies vary based on utility



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







# **Reduce Your Energy Bill**

Energy Costs for 7.4kW Array



Estimated electric bill over 25 Years: 11.6 cents/kWh + 2.0% annual increase

# 25-year electricity cost post-solar: 5.6 cents/kWh Estimated 25-Year Savings: <u>\$28,065!</u>





# **Options & Considerations** Part 3 of 5







# **Every Home Is Different**

# Your PV system will be tailor-made to fit your needs.



# **Pricing Varies by Site and Needs:**

- System Design and Size
- Age and Type of Roof
- Panel Type

- Inverter Type
- Height and Pitch of Roof
- Complexity of Electrical
   Interconnection

- Multiple PV Arrays
- Energy Storage
- Transformer & Electric
   Service Upgrade



# Is Your Site Suitable for Solar?

Need a good solar "window"

- South is ideal, but East + West only reduces production ~20%
- Other Environmental Concerns
  - Shading
  - Snow / Hail
  - Wind Loading
  - Squirrels
- Homeowner's insurance may cover solar at minimal additional expense.








### Solar + Storage

#### You Might Need Batteries If You:

- 1. Pay high power prices
- 2. Pay "Time of Use" or "Demand Charges"
- 3. Want more energy-independence
- 4. Need uninterrupted power
- 5. Don't get full net-metering credit

Wall-Mounted Battery

Photo Credit: Nick Matthes, MREA



## Solar + Storage

Wall-Mounted Battery

### Considerations

- In Grow Solar Metro East, batteries start at around \$15,000 (13.5 kWh of available power).
- A few hours of back-up power for only a few appliances--NOT a whole-house solution.
- The 26% Federal tax incentive does not apply when batteries are bought separately.

Photo Credit: Nick Matthes, MREA



## Solar + Storage





## **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 <u>expressly prohibited</u>.

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 to <u>\$300</u> for an energy audit\*

- LED lighting
- Energy Star appliances
- High Efficiency Heating and Cooling (HVAC)
- Power strips
- Air sealing & insulation
- Electricity usage habits

Ameren's efficiency incentive program can be found at AmerenIllinoisSavings.com







\* Energy efficiency auditor must be certified by Building Performance Institute or in Ameren Illinois Trade Ally Network.



# 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 2023 and then 0% in 2024.
- 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



**GROW SOLAR** 

#### GROW SOLAR

## Illinois Law & SRECs

- 25% Renewable Energy (RE) on the IL grid by 2025
  - We have about 9% RE now; ~1% is solar.
- RE Expansion through Solar Renewable Energy Credits (SRECs).
- SRECs funding comes from major utility companies through a small fee on customers (NOT A TAX!)
- SRECs give you cash payments based on projections of future energy production for your solar project.



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





\* For <10 kW AC systems in Illinois. Does not Illustrate administrative fees. SREC income is taxable



#### GROW SOLAR

## **SREC Status**

- Good News: Solar is incredibly popular!
- Not-So-Good News: SREC budget mostly depleted.
- Small number of projects receiving funding until new legislation allots more \$.
- Projects added to a waitlist will be funded as funding becomes available.
- You can still install your project, but SRECs will be delayed.

#### GROW SOLAR

## **Illinois Law & Incentives**

- 25% renewable energy on the IL grid by 2025
  - We have about 9% RE now; 1% is solar.
- Financial incentives (SRECS) presently unavailable
- State law on renewable energy is required to resume incentives program
- Call or write your legislator to support renewable energy programs!

## SRECs

Illinois requires utilities to acquire increasing proportions of power from renewable sources

• ("25 by 25")

SREC market is a mechanism created to help utility companies do this by paying you to go solar.



# Solar Costs Part 5 of 5











# **Financing Solar**

## **Clean Energy Credit Union**

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



- Partnership with 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, 15 or 20-year fixed rate loan (4.75% to 5.25%) up to the remaining 74% solar electric system cost



## **Pricing Structure**



# **Group Buy**

## **How It Works**

**GROW SOLAR** 

#### The more people go solar, the lower the price:

Total KW	>50	>150	>300	>500	>750	>1,000	>1,250
	kW	kW	kW	kW	kW	kW	kW
# Homes	7-10	21-30	40-60	70-100	110-150	150-200	180-200
	homes	homes	homes	homes	homes	homes	homes
Total Rebate	0.5%	1%	1.5%	2%	2.5%	3%	3.5%

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



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





## 7.7 KW Residential System

EXAMPLE	<b>GSME Price</b>	Market Price
Installed Cost	\$25,718	\$29,833
26% Federal Tax Credit	-\$6,687	-\$7,757
Est Pre-tax SREC Payments* (Waiting list formed for SREC payments)	-\$10,517	-\$10,517
Max group buy savings (3.5%)	-\$900	\$0
Net Cost	\$7 <i>,</i> 614	\$11,559

Example for 2-story rooftop array with premium panels, microinverters and adders







Straig

## Five Easy Steps to Solar



## **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 <u>bporter@4thebank.com</u> or 618-659-4234











# StraightUp

# Our Contact Information

→ Sign Up for a 15-Min Solar Assessment of Your Home (link is in the Chat)

 $\rightarrow$  Reach Out:

Jake Hagedorn jake.hagedorn@straightupsolar.com 636-299-1192

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





# StraightUp

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→ Sign Up for a 15-Min Solar Assessment of Your Home (link is in the Chat)

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





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Jake Hagedorn Jake.hagedorn@straightupsolar.com

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





## **REFERRAL BONUS**

StraightUp

 The first 25 people to refer someone who signs a contract will receive \$500 from StraightUp Solar

## **Become a member of MREA!**



Your support as a member makes a long lasting impact.

#### You help sustain and grow our many programs, including:

- Grow Solar Group Buy Program
- Solar on Schools Initiative
- Solar Professional Training
- Solar Ready Wisconsin Workforce Development Project
- Solar Corps Internship Program
- Rise Up Midwest, and more!

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





www.midwestrenew.org/membership



When there's a huge solar energy spill, it's just called "*A really nice day!*"

Thank you for attending! GrowSolarMetroEast.org Presenters: Kevin McKee, Virginia Woulfe-Beile, Nate Keener Feedback? Questions? PeterM@midwestrenew.org