Introduction to Rooftop Solar

If you’ve been thinking about installing solar panels on your home, this could be the time to do it. Thanks to the rapidly declining cost of solar panels, new state incentives, and a federal tax credit, a photovoltaic system can be a good financial investment for homeowners. However, that tax credit, which now covers 30 percent of your system’s costs, goes down to 26 percent in 2020, and then to 22 percent in 2021.

What residential solar incentives are available?
In Illinois, three separate incentives help offset the costs of installing solar:

- **1. Solar Renewable Energy Credits**: Thanks to Illinois’ Future Energy Jobs Act, passed in 2016, the state will purchase the “Solar Renewable Energy Credits,” or SRECs, that your system produces at a set dollar amount. SRECs allow you to sell the environmental value of the solar power you produce—you earn one SREC for every 1,000 kilowatt-hours. SRECs are important to states like Illinois that have laws requiring utilities to get a certain amount of power from renewables. For residential solar, this incentive is an upfront payment determined by how much energy your system is expected to produce over 15 years. Since the amount of energy generated by solar installations varies widely, the percentage of the project costs that this incentive will cover also varies. Your solar installer will help you determine how much of your project you can expect this incentive to cover.

Did you know...
The price of solar panels has declined 70% since 2010.
Source: Solar Energy Industries Association

Making Solar More Affordable in 3 Ways

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**STATE OF ILLINOIS SREC PAYMENTS**
The state of Illinois will buy the "Solar Renewable Energy Credits," or SRECs, your system produces.

For residential solar, this incentive is an upfront payment determined by how much energy your system is expected to produce over 15 years. It can cover up to 30% of the installation cost.

Ask your solar installer how much this incentive will cover and how you’ll receive the credit. Ideally, the credit would simply be deducted from your installation bill.

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**FEDERAL TAX CREDIT**
This tax credit, which now lets you deduct 30% of your solar project costs from your federal taxes, drops to 26% in 2020 and 22% in 2021.

If 30% of your project costs amount to more than you paid in federal taxes in a single year, the credit will roll over for up to the next 5 years.

*Note: You must pay federal taxes to benefit.*

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**NET METERING**
On bright days your solar panels often produce more energy than your home is using at that moment.

That excess electricity is sent back to the grid and you’ll receive bill credits in a process called "net metering."

These credits help cover your electricity costs when your panels are not generating power. They also roll over month-to-month and help reduce your bill during less sunny winter months.

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**IMPORTANT**: You only receive the SREC and federal tax credit if you purchase your system. These credits are not available to people who lease solar systems.
2. The Federal Solar Investment Tax Credit: This tax credit lets you deduct 30 percent of your solar project costs from your federal taxes. The credit is available through 2019, but it drops to 26 percent in 2020 and 22 percent in 2021. This incentive does not depend on how much energy your system produces, but you must pay federal taxes in order to benefit. If 30 percent of your project costs amounts to more than you paid in federal taxes in a single year, you’ll receive the rest of your incentive the following year. (For example, if 30 percent of your project costs is $5,000 but you only paid $3,000 in taxes, you’ll receive a $3,000 credit in the first year and then $2,000 the following year).

3. On-bill Credits from your Electric Utility: Once you have installed your system, it’s likely you will not always be using 100 percent of the electricity it produces in real time. If your system is connected to your utility’s grid, excess electricity is sent back to the grid and you’ll receive bill credits for that electricity in a process called “net metering.” These credits help maximize your monthly bill savings and ensure you’re credited for every kilowatt-hour (kWh) your system produces, which helps pay off the remaining installation costs faster. They also help cover the cost of the electricity your household uses when your panels are not generating energy (i.e. cloudy days or nighttime). Your unused credits expire every April and do not “cash out,” so it is wise to make sure your system does not produce more electricity than your expected annual usage.

Note: All residential customers of the regulated electric utilities (ComEd, Ameren, MidAmerican) can participate in “net metering.” If you have a municipal electric utility or cooperative, check to see if it too offers “net metering.”

Is my roof ready for solar?
The ideal residential solar installation balances your energy needs, your roof’s generation potential, and the costs of the system. Ask these questions to help determine if your home is suitable for solar panels—but remember that an on-site evaluation by a solar installer will provide the best estimation of your home’s potential.

1. How much of your roof is shaded?
Check out an aerial view of your home on Google Maps. If you can’t see the majority of your roof, you may not get enough sunlight to justify the costs of installing your own system.

2. How old is your roof?
Replacing your roof after installing a solar panel system creates additional costs, so most developers recommend installing a system on a relatively new roof.

3. Can the size, shape and slope of your roof support solar panels?
South-facing roofs that sit at an angle of 15 to 40 degrees tend to be the best. East and west facing roofs can often work too, but may require about 20 percent more panels to generate the same amount.

4. What type of material is your roof?
Asphalt, tile and metal roofs tend to be an easier surface for installing solar panels. Slate and wood roofs are more difficult to install solar panels on and make for more expensive installations.

5. Can I install panels somewhere other than my roof?
Not all residential solar systems are installed on a roof. If you have open land that gets a lot of sun, a ground mount system could be a good alternative to installing a system on your house.

How do I find solar installers?
If you think rooftop solar would be a good fit for you, contact solar installers in your area to get quotes for your project. Comparing as many solar options as possible can help you avoid paying inflated prices for your system. CUB recommends talking to at least three installers before signing any contracts. Find residential solar installers near you by visiting the Illinois Solar Energy Association website: www.illinoissolar.org/residential-installers.

What are my options for financing my solar system?
There are many different ways to finance a solar installation on your home. CUB recommends going with whatever option is best for you.

Purchasing vs. Leasing.
Some solar installers offer the option of leasing solar panels instead of purchasing them outright. When you lease solar panels, you typically pay a monthly fee to the installer and do not own the panels or receive any of the federal or state incentives directly. Rather, the installer owns the system, receives the incentives, and ideally passes the savings onto you. While usually requiring no upfront cost, solar panel leasing agreements are still a big commitment and can end up costing you more over the long-term.

How to pay for your system if you want to own it.
If you want to own your solar panel system, you have

Did you know...
Homeowners who get 3 or more quotes from installers save at least 10%.
Source: U.S. Dept. of Energy’s National Renewable Energy Laboratory (NREL)
options when it comes to paying for it. Generally, there are two types of loans that can help pay for your system.

1. Bridge loan: A bridge loan covers the period between installing your system and receiving your federal and state incentives.

2. Solar loan: After subtracting your federal and state incentives from your total installation costs, you can finance the remaining cost of your system with a solar loan. Many different institutions offer solar loans, from traditional banks and credit unions to the solar panel manufacturers themselves.

What other questions should I consider?

1. How much energy can your roof generate?
   Solar installers will help you determine how much electricity a system will generate over time, but if you’re interested in roughly estimating your home’s generation potential, check the National Renewable Energy Laboratory’s calculator: http://pvwatts.nrel.gov/.

2. How much energy do you use?
   Look at your home’s typical energy usage. How much do you use each month and annually? Are there energy efficiency upgrades you can make before installing solar? Minimizing your home’s energy usage FIRST can keep you from paying for more panels than necessary.

Can residential solar panel owners participate in “real-time pricing”?
ComEd and Ameren customers with rooftop solar installations can still participate in their utility’s real-time pricing program (“Hourly Pricing” for ComEd, “Power Smart Pricing” for Ameren). In fact, solar customers often benefit from real-time pricing, which charges participants a market rate that can change hourly. That’s because they can pull electricity from their panels during hot summer afternoons and avoid paying peak prices for electricity. (Note: If you have an electric vehicle, adding real-time pricing makes even more sense. Charge your vehicle at night, when prices are typically lower, and your net metering credits will cover more of your car-charging expenses.)

What about alternative electric suppliers?
Residential solar panel owners can have an alternative electric supplier, but be careful. These alternative suppliers are often overpriced. Plus, if you make any changes to your electric supplier — whether it’s switching from supplier to supplier or between a supplier and your utility — you will lose any unused net metering credits on your account. We’ve also gotten reports that not all alternative electric suppliers offer net metering, even though it is required by law (CUB is pressuring regulators to enforce this).

Can I use solar to disconnect from the power grid?
Until battery technology gets more affordable and efficient, using solar panels to completely disconnect from the utility’s distribution grid won’t be practical for most households. While it is possible to use batteries to store that excess electricity (instead of sending it back to the grid), integrating battery storage is typically not worth the additional cost. If you choose to keep your solar system entirely “off-grid” — meaning it’s not connected to the power grid — you also wouldn’t be eligible for state solar incentives.

How do I learn more?
Visit the Illinois Solar Energy Association website, at www.illinoissolar.org, and read these additional resources: