

Solar Photovoltaic (PV) Systems FREQUENTLY ASKED QUESTIONS FOR CUSTOMERS

How does solar work?

When sunlight hits solar cells, they produce electric current. This is fed to an inverter, often in the basement, garage, or on the back of the solar panels, which converts this energy into AC current compatible with your house and the electric grid.

RPU offers a free solar class twice a year through [Community Education](#) that also includes what to look for in a reputable solar contractor.

Does solar work in Minnesota?

Yes! Minnesota receives as much sunlight as parts of Texas and Florida, and gets more sunlight than Germany, which has more solar panels installed than the United States.

What about snow?

Solar modules are dark and typically melt the snow off quickly. Some people get soft roof rakes to pull snow off their modules, but most just let nature take its course.

Where can I put solar panels?

You'll need some roof or ground space that ideally has full sun from 9 a.m. to 3 p.m. year round, even during the low winter sun. South facing is best, though south-east and southwest can work well too. Even though trees don't have leaves on them in the winter, the shade from the branches will drastically reduce the amount of power the panels produce. Obstructed sun rays will reduce production. Your solar contractor should provide you a shade analysis. We encourage you to have a shade analysis done on your roof or at least from a ladder at the bottom of the roof. This is the best way to get an accurate idea of your actual production. A shade analysis from the ground will not be as accurate, and online shade analysis tools are also not always accurate.

What should be done to my home before installing solar panels?

A great place to start is with an energy audit. We strongly recommend taking RPU's free [Neighborhood Energy Challenge](#) workshop that is offered throughout the year. Attendees can get an energy audit for only \$75. The audit will identify the areas in your home where energy loss occurs. This can help you determine which efficiency improvements are recommended before installing solar panels, which may mean you'll save money by needing fewer panels.

What does it cost?

In the past few years, typical residential grid-tied systems have ranged from \$15,000-\$50,000 for system sizes 3-10 kW, before credits or federal incentives. Knowing your electrical usage and obtaining multiple proposals is recommended.

What kind of incentives are there for solar?

The U.S. government offers a solar tax credit that can reach up to 30% of the cost of installing a system that uses the sun to power your home or business. The solar investment tax credit is a credit you can claim on your federal income taxes. The solar investment tax credit (ITC) is not a tax deduction or a tax refund. Instead, it reduces what you owe in taxes. The credit is currently valued at 30% of your total solar photovoltaic (PV) system cost. The Inflation Reduction Act of 2022, you may qualify for a tax credit that can offset up to 30% of the total solar panel installation cost through 2032. The credit will reduce to 26% in 2033 and decrease to 22% in 2034. The ITC applies to both commercial and residential systems, and there is no cap on the amount of money it can save.

What is the projected payback?

It's very dependent on size, type of system, complexities of your home's electrical system, and how quickly electric rates inflate. For most residential customers, the projected payback is in the 9-15 year range. Anything longer than this will mean you'll take longer than average to recuperate your initial investment, and your Return of Investment (ROI) will be lower than average.

What is net metering?

Net metering is available to residential and commercial customers who install solar electric systems that are sized 40 kWac and under. It allows customers to send excess energy from their solar system back to the grid during the day. When the sun goes down, the

customer would simply buy the energy from the grid again.

What should I do before installing solar panels?

Visit our [NOVA Power Portal](#) to review all of interconnection documents. Any interconnections with RPU must be submitted through our portal for pre-approval. After you have selected a solar contractor, they can assist you in this process.

What if I have additional questions?

Please contact us at DER@rpu.org or 507-280-1500.

