

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.

What if I have some trees or shading?

The general rule is for panels to have full sun from 9 a.m. to 3 p.m. year round. 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 \$50. 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 \$10,000–\$35,000 for system sizes 2-10 kW, before credits or rebates. Knowing your electrical usage and obtaining multiple proposals is recommended.

What kind of incentives are there for solar?

For 2021, RPU has a solar electric rebate of \$500 per newly installed solar photovoltaic (PV) system that is 2.0 kW DC or larger. The rebate is available, on a first-come, first-served basis.

Also available is the 2021 federal tax credit of 26% for solar energy. Businesses and non-profits can get 100% non-debt financing through the PACE program and businesses may also use the Modified Accelerated Cost Recovery System (MACRS) accelerated depreciation.

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 8-12 year range with a Return on Investment (ROI) in the 6-9% range, with a projected system lifetime of 30 years or more. For commercial customers, payback times are typically less due to the MACRS depreciation available to businesses and economies of scale.

What is net metering?

Net metering is available to residential and commercial customers who install solar electric systems that are sized 40 kW and under. It allows customers to send excess energy from their solar system back to the grid

during the day, and receive a 1:1 kilowatt-hour credit for that energy. When the sun goes down, they 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.

