

How I came to have Solar Panels on my Roof

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I have been a fan of solar energy for quite awhile. I love the idea of using the gift of sunlight to generate power for those things that have become necessities in our modern world. Watching solar power develop feeds my hope and optimism for the future.

Being a renter all my adult life, solar panels on the roof were not an option. I found myself checking out the solar power systems for camping; thinking, if nothing else, I could put in a system that charged my cell phone and laptop. It would be a start – and looked like could be done within my budget.

Then my mother passed away in 2015, bringing changes to our lives - including the need to find affordable housing. In late June we became first time home owners with all the responsibilities and possibilities that entails. Installing solar panels on the roof was one of those possibilities.

Our first step was to connect with Heidi Joos and Ivy Booth to check out their experience. They gave us the name of Rebecca Lundberg of Powerfully Green, who installed their system. She would know the current incentive programs as well as whether the option would work on our house.

Rebecca is a wonderful resource. She checked out the house using satellite images, put together possibilities and shared with us what incentive programs would be available. She explained the concept of net metering. In Minnesota the utility company must purchase the power you generate at the same rate you purchase their electricity. They buy all the power you generate and then sell back to you what you need, charging you, or paying you, the net difference. This system allows you to install panels without needing to invest in the not-yet-up-to-par and very expensive battery system needed to balance out the difference between when the panels generate power and when you need it. In addition, when the panels are generating more power than you need, the extra power becomes a source of renewable energy for the community, reducing the need for the utility to use fossil fuels.

We were also eligible to participate in a program in which Xcel will pay us an additional eight cents per every Kilowatt hour generated over the year for 10 years. This program is an environmental offset for the company. This is in addition to any net metering income. The annual payment goes with us, as the original investors, if we sell the house.

Rebecca shared how she had built up the solar on her house over time – bit by bit – with the aim of generating enough power to come to a net zero balance with the utility company. One does not need to put a net zero system in all at once.

Getting to net zero has two parts, generating power and reducing use. The solar panel installation includes a monitoring system which tracks power generated and power used in real time, making it fun to become more aware of how we use energy.

The area of our roof that was best to generate solar power fits eight panels. The system is projected to cover a third to a half of our electricity needs (I think it will do more given our power usage) and, at under \$12,000, was affordable for us. The current Federal tax credit for adding solar power to a home and the bit of my inheritance that did not go to the house down payment covered about half the cost.

I checked with my credit union for ways to come up with the rest. I also met with a financial advisor to review our options and confirm that we could afford this project. I had some Roth IRA money in a cash account I decided to use. I saw this as a re-investment of the money for my not-too-far-in-the future retirement. The system will be providing a discount on my electric bill for at least 25-35 years!

The panels were connected to the grid in mid-November 2015 and I was surprised to see how much energy was generated so late in the year. With winter, short hours of low angle sunlight and snow covering the panels meant little was generated. With longer days and clearer skies we have enjoyed watching the green bubble, showing power sold to Xcel, appear on the monitor most days.

I like comparing adding solar panels to purchasing a car. Driving a new car off the lot results in immediate depreciation in value. Then there are the costs of plates and tabs, maintenance and insurance, parking and fuel. Within 10 years or so the car will need replacing. In contrast, solar panels add value to the house when installed and require no maintenance until the inverter component (ours is located in our basement) needs to be replaced in 10 -12 years. The panels protect the part of the roof they cover from damage – including hail. Instead of needing fuel, they generate power which lowers the cost of the electric bill for at least 25 to 35 years.

Some people find owning a particular car, collecting something or creating a beautiful garden gives them pleasure – well worth the investment of time and money. For me, having the panels on my roof is like that, a source of pleasure. Taking part in generating some of the power I use each day gives me a good feeling and knowing the system will pay for itself over time is a extra plus. I can't believe my dream of having solar panels on the roof is a reality.

If you are interested in seeing how the panels are doing, you can check out the link to our monitor at <http://egauge21550.egaug.es/>. I'd be happy to try and answer any questions or share more about my experience, just ask.

March 2022 update: As of March 22, 2022 the solar panels have generated 52% of the electricity used by our household. Last summer something went wrong with the equipment connecting one of the panels with the system that went unnoticed for a few weeks. Given all the panels are on the same loop, no energy was added to the grid during that time. The part was under warranty and Powerfully Green replaced it at no charge. I do check the monitoring more regularly now. Other than that, the system has passively generated electricity quietly in the background. I only wish I could add to the system.