

**From:** [Jim Carpenter](#)  
**To:** [Clerk](#)  
**Subject:** Yes to solar grant application!  
**Date:** Monday, February 19, 2024 11:55:15 AM  
**Attachments:** [Fact Sheet - WHY SOLAR.pdf](#)

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Morning, Lisa

Please let our Commissioners know we totally support this great application going forward. Leelanau Energy's fact sheet puts it all in perspective.

Thanks.

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Jim Carpenter and Becky Reynolds  
Leland, Mi



- Facts and information from Leelanau Energy -

# Why Solar? Why Now?

## Solar Energy, Free & Infinite

**There are many myths shared widely about solar energy. We offer this brief fact sheet to assist the reader with facts and science to help address their concerns.**

### **Free and Infinite.**

Fact: In the span of one hour, the earth receives enough sunshine to meet the energy needs of the entire world for one year.

### **Solar (along with wind) is the cleanest, most sustainable energy source**

Coal plants are the largest producers of carbon emissions, which contribute to global warming. Just one household rooftop solar system can reduce pollution by 100 tons of CO<sub>2</sub> carbon dioxide in its lifetime - and yes, this includes the energy it took to manufacture the solar panels.

### **Solar efficiency continues to grow**

Solar panel efficiency has increased from 6% in 1954 to over 40% on high-efficiency panels today. Most solar panels have 25 year warranties, but many of the earliest installed panels are still working 40 years later at 80% efficiency or more.

### **Growth and Cost of Solar**

In the last decade alone, solar in the US has experienced an average annual growth rate of 24%. In 2023, 80% of new energy generation installed in the US was clean energy with the same percentage predicted for 2024.

As of 2022, more than 263,000 Americans work in solar at more than 10,000 companies in every U.S. state. In 2022, the solar industry generated nearly \$35 billion of private investment in the American economy. <https://www.seia.org/>

### **Addressing your concerns**

#### **Glare from Solar Panels**

First, note that in order for a solar panel to produce electricity, it must capture solar radiation. Thus, any solar radiation reflected off a panel is efficiency lost. Manufacturers have worked hard to construct solar panel surfaces so that the least possible sunlight is reflected elsewhere. Given this, consider that if anyone would be concerned about glare, it would be the aviation industry - charged with protecting the lives of millions of passengers each year. Yet airports across the US and the globe have become major adopters of solar energy.

In 2020, a University of Colorado Denver researcher found that 1 in 5 airports in the U.S. had installed some kind of solar component to their power grid. Denver International Airport had become one of the largest solar projects in the U.S., with 42,614 solar panels on a total of 56 acres. Indianapolis International Airport was another early adopter: The IND Solar Farm is the “largest solar farm on airport real estate in the world” and produces 36.1 million kilowatt hours per year, enough to power 3,650 homes each year.

List of other airports with solar:

<https://panethos.wordpress.com/2022/06/09/airport-solar-energy-production-in-the-united-states/>

### **Weather Damage**

In fact, most manufacturers test and certify their solar panels to withstand hail up to one inch in diameter falling at 50 miles per hour. Today's solar panels are engineered to be extremely resilient against high winds and heavy rain. Most solar panels are certified to withstand hurricane force winds.

Even so, damaged solar panels with cracks on the surface will still work. However, these abnormalities can cause solar production to decrease. The panel may not operate at maximum efficiency.

Yes, most insurers extend coverage to solar panels as long as the damage is covered under your policy. Examples of covered perils in homeowners insurance include wind, fire, lightning strikes, hail, and damage from a fallen tree.

### **Recycling Solar Panels**

Many people ask whether solar panels can be recycled. The answer is yes. While the exact proportions depend on the type of solar panel, typically 95% or more of a panel is composed of the common materials glass, aluminum and plastic. The balance is made up of silicon and other more unusual materials (again, dependent on the specific type of panel), the good news is that the more rare the material, the greater its value in recycling. But the bottom line is that today, too many panels end up in landfills. There is hope in sight. To date, because solar is a relatively new industry, there has not been enough aged-out panels to make recycling them profitable. But as quantities of retired panels increase, profitability becomes possible with a number of companies entering this new field.

Bottom line, this is an issue that needs to be addressed. But PV waste is minuscule compared to that of other industries and electronics. For more, see this excellent article: <https://cleantechnica.com/2023/10/13/nrel-explodes-solar-panel-waste-myths/>

### **Who Supports Clean Energy?**

#### **The world gets it ...**

In 2022, the total global photovoltaic capacity increased by 228 GW, with a 24% growth year-on-year of new installations. As a result, the total global capacity exceeded 1,185 GW by the end of the year. Asia was the biggest installer of solar in 2022, with 60% of new capacity and 60% of total capacity.

### The U.S. gets it ...

By year end 2017 the United States ranked 2nd in the world behind China in solar generation capacity. In 2023 the amount of solar generation in the US surpassed that of both coal and nuclear energy. In 2023 80% of new generation installed in the US was clean energy with the same percentage estimated to be true for 2024.

### Michigan gets it ...

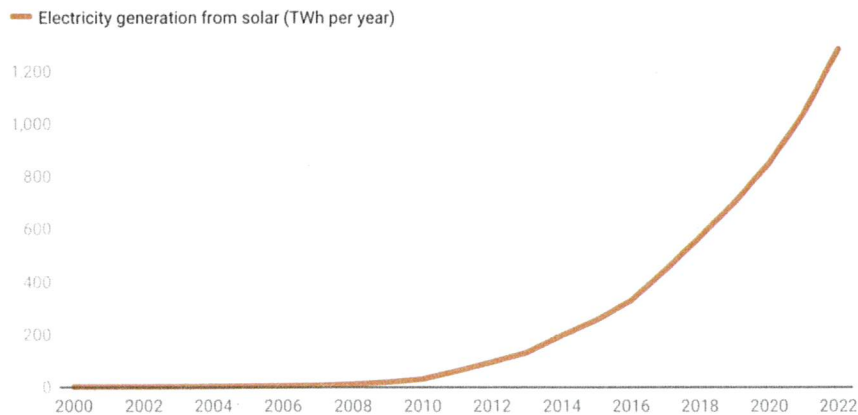
Michigan voters approve of renewable energy as evidenced by a 2018 Greenberg Quinlan Rosner study that found 72% of registered voters in Michigan supported setting a goal of generating 100% of our power from renewable energy.

And a 2019 Survey of Michigan residents by the Institute for Public Policy and Social Research at Michigan State University found that 90% of Michigan residents support more solar use in Michigan.

### Are you a visual learner?

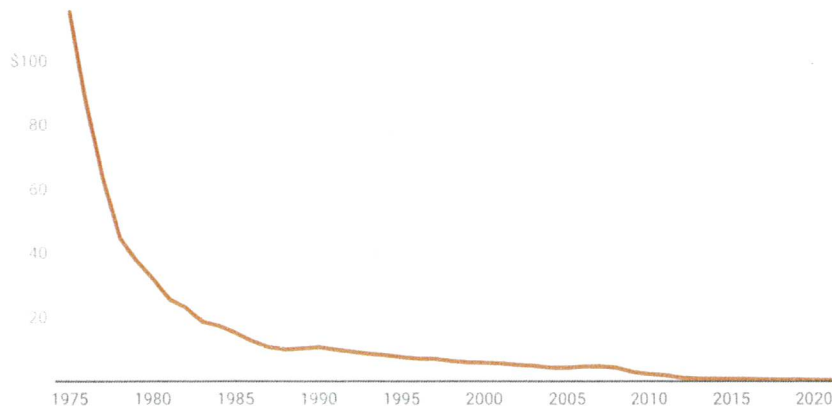
#### The growth of solar energy

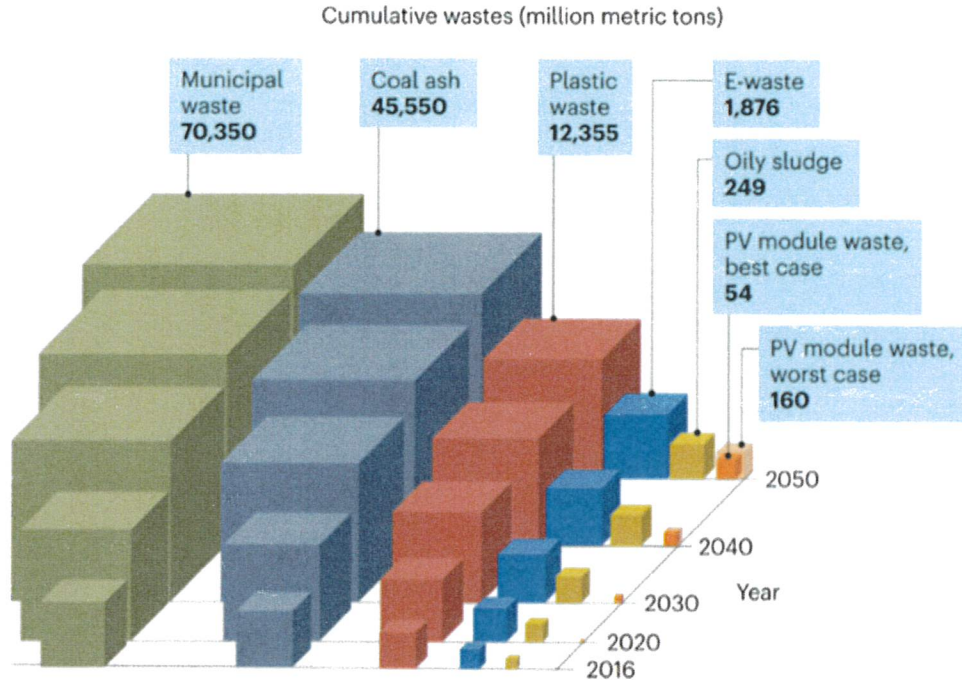
In 2000, the world generated 1 TWh of solar power. By 2022 the world generated 1,283 TWh in electricity from the sun's rays.



#### Solar panel costs fell significantly for decades

Solar photovoltaic module price (\$ per watt)





Want more? See this excellent DOE web site for a list of solar resources:  
<https://content.govdelivery.com/accounts/USEERE/bulletins/382bc16>



### What is Leelanau Energy?

Leelanau Energy is a nonprofit organization that was founded in 2008 by Leelanau citizens who shared common interests in energy and the environment. Today, we are a diverse group of your friends and neighbors coming together to educate and advocate for energy efficiency and renewable energy.

#### What we do:

- Implement energy conservation and efficiency
- Conceive, support and promote community green projects
- Advise and advocate for progressive renewable energy policy
- Inform and educate individuals, households and communities