



## Office of the Ohio Consumers' Counsel

Your Residential Utility Consumer Advocate

# CONSUMERS' FACT SHEET

### Office of the Ohio Consumers' Counsel

10 West Broad Street  
Suite 1800, Columbus, OH  
43215-3485

E-MAIL:  
[occ@occ.state.oh.us](mailto:occ@occ.state.oh.us)

WEBSITE:  
[www.pickocc.org](http://www.pickocc.org)

# RENEWABLE ENERGY SOURCES SOLAR POWER



Courtesy: Dayton Power & Light

### What is solar power?

There are several ways electricity can be produced. An environmentally friendly and renewable option is to use the sun's energy. Solar power can be created when sunlight is captured by a photovoltaic system. This solar panel system is made of tightly woven cells which absorb sunlight. When the sun's rays hit the photovoltaic cells, electrons become excited and can be used as electricity to power our everyday lives.

The sun's rays are so powerful that even though only a small percentage of energy actually reaches Earth, it can be used to run a powerful electric thermal generation power plant. In this case, heat energy is collected from the sun using parabolic mirrors to evaporate water into steam to operate turbines that release electricity.

Individual buildings can be heated by the sun through passive solar heating. A building's structure is used to generate heat through a process called direct gain. The collected heat is then released throughout the building at night.

### Solar power in Ohio

Ohio has many small scale sites that use solar power, but the overall solar production in the state is minimal. Ohio currently ranks 43rd among states generating solar power, according to statistics provided by the U.S. Energy Information Administration. Data from the Solar Energy Industry Association (SEIA) shows Ohio only had a cumulative 1.9 megawatts of solar energy tied to the electric grid through 2009. That is enough energy to provide electricity to as many as 380 average homes per year.

This should change as Ohio has implemented renewable energy standards that will require 12.5 percent of all electricity sold by investor-owned electric utilities in the state to come from renewable energy. This includes 0.5 percent set aside specifically for solar. There have already been major strides to increase solar energy in the state. American Electric Power brought a 12-megawatt solar farm in Wyandot County online in April 2010. Dayton Power & Light has a 1.1-megawatt solar array in Montgomery County that has been

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The Office of the Ohio Consumers' Counsel (OCC), the residential utility consumer advocate, represents the interests of 4.5 million households in proceedings before state and federal regulators and in the courts.

The state agency also educates consumers about electric, natural gas, telephone and water issues.

For more information, please visit the OCC website at [www.pickocc.org](http://www.pickocc.org).



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producing power since March 2010. The University of Toledo also has completed a solar project that added an additional megawatt of solar-produced electricity in Ohio. In northern Ohio, Oberlin College is home to the Adam Joseph Lewis Environmental Studies Center and a 60-kilowatt solar system, which provides a substantial amount of the energy needs at the center.

Many homeowners across the state also realize the benefits of solar power to offset some or all of their electricity needs. In fact, many of these homes are featured in the annual Solar Homes Tour hosted by Green Energy Ohio.

The state also is heavily involved with the production of solar panels and other materials needed to use solar power. Fortune 500 solar company First Solar manufactures panels in Perrysburg. The Ohio plant is the only U.S. facility to build thin-film panels for the world's largest manufacturer of solar panels.

### National solar power outlook

Currently in the United States, solar power represents about 1 percent of energy used from renewable resources. The industry continues to grow (441 megawatts were added in 2009) and prices for solar panels fell in 2008 and 2009. At the end of 2009, the United States had approximately 2,108 megawatts of installed solar power, according to SEIA.

Continued growth in solar industries is expected as more renewable energy standards are adopted in the United States and incentives continue to make solar power attractive to consumers and businesses alike. Twenty-one states, including Ohio, have adopted Property Assessed Clean Energy legislation that allows homeowners to obtain financing for solar projects and pay it back through property taxes over a number of years. The federal government also offers a 30 percent tax credit for solar installations, which is available through 2016.

### Pros and cons of solar power

As with many of the renewable energy resources, solar power is an environmentally friendly electricity option that does not emit any pollutants. Using solar power:

- ▶ Reduces Ohio's dependence on fossil fuels for electricity;
- ▶ Can help offset the monthly electricity provided by a local utility;
- ▶ Improves property value;
- ▶ Allows the environmental benefits to be sold on the market for financial gain. Some Ohio investor-owned electric utilities now offer programs to purchase these renewable energy credits to help meet their state requirements;
- ▶ May allow a home's electricity to keep running while others may experience an outage; and
- ▶ May allow excess electricity to be sold to an electric utility if the solar system is tied to the electric grid.

A solar system can be expensive. A typical installed solar panel system costs on average between \$20,000 and \$35,000. But as prices fall, demand increases and financial incentives continue, solar power may be a feasible investment for some consumers.

### Additional resources

For additional information on solar power, visit these websites:

<http://development.ohio.gov/Energy/>

[www.seia.org](http://www.seia.org)

[www.solarelectricpower.org](http://www.solarelectricpower.org)

[www.eere.energy.gov](http://www.eere.energy.gov)

[www.greenenergyohio.org](http://www.greenenergyohio.org)