



Power from Renewable Resources - Solar Power

What is solar power?

Solar power is created when electricity is generated using the sun's rays through a photovoltaic system, which includes a panel of tightly woven cells that absorb sunlight. When the sun's rays hit the photovoltaic cells, electrons are released and collected for the creation of energy.

The sun's rays are so powerful that it can be used to run an electric thermal generation power plant. In this case, heat is collected from the sun's rays by using mirrors to direct the sun's heat. This heat helps to generate steam that is used to create 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 sites that are using solar power already, but more can always be done.

In northern Ohio, Oberlin College is home to the Adam Joseph Lewis Environmental Studies Center, which has the largest solar panel installation in the state. In central Ohio, Green Energy Ohio was instrumental in installing solar panels on the roof of the carriage house at the Governor's Mansion. Commissioned in September 2004, this system has generated close to 3,400 kilowatt hours of electricity.

The state also is heavily involved with the production of solar panels and other materials needed to use solar power. First Solar in Perrysburg manufactures solar panels. It has more than tripled its production in the past two

years, mainly due to Germany purchasing panels to help run its power plants since the country has begun closing its nuclear power plants.

National solar power outlook

Currently in the United States, solar power represents around 1 percent of energy used from renewable resources. California legislators have enacted legislation that would install solar panels on the roofs of at least 1 million homes and businesses by 2018. In the 2005 Energy Policy Act, the government created a 30 percent tax credit for solar installations. Also, more than 30 states, including Ohio, have tax breaks and incentives to help spur the growth of solar power.

Pros and cons of solar power

As with many of the renewable energy resources, solar power is environmentally friendly since it does not emit any pollutants. Using solar power saves on importing fossil fuel to run power plants, which can result in monetary savings



Example of a solar panel

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to consumers. The use of solar power also diversifies the nation's fuel mix.

The economics of solar power depends on location, equipment and installation. The basic equipment is costly, with photovoltaic panels and other equipment for one home estimated between \$10,000 and \$20,000. This results in electricity from solar photovoltaic cells not being competitive with electricity from most utility companies, except in remote areas where there would be a high cost to extend power lines.

Additional resources

For additional information on solar power, visit these websites:

<http://www.odod.state.oh.us/cdd/oe/>

www.seia.com

www.solarelectricpower.org

www.eere.energy.gov

www.greenenergyohio.org

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 and resolves complaints from individuals. To receive utility information, brochures, schedule a presentation or file a utility complaint, residential consumers may call 1-877-PICKOCC (1-877-742-5622) toll free in Ohio or visit the OCC website at www.pickocc.org.

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For additional information from the Office of the Ohio Consumers' Counsel:

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