

Charting a New Path for Ohio's Electricity Generation and Use



Ohio's energy future is at a crossroads

One path leads to increased dependency on fossil fuels—threatening our economy and fueling global warming. The other leads to a new, smarter energy future for Ohio. Investing in clean energy alternatives—like solar and wind power—can create and protect jobs in Ohio, save families and businesses money, and make America more energy independent. Clean energy is also the most effective solution to the threat of global warming. We can start making progress right away using proven technology, and then draw on American innovation to take us the rest of the way with new technologies.

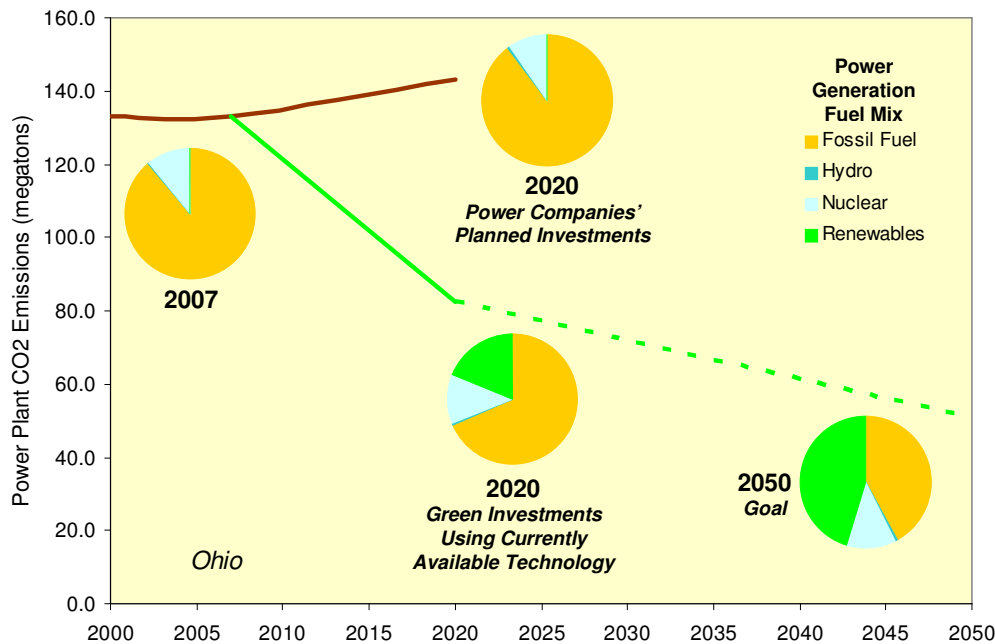
How does Ohio generate electricity today?

In 2007, electric power generated in Ohio primarily came from coal (84.2 percent), and nuclear (10.8 percent). Most utilities intend to continue relying heavily on fossil fuels in the coming decade. Ohio power companies plan to increase the energy generation from coal by 4.1 percent. Less than 0.1 percent of electricity generated in Ohio is expected to come from renewable sources like wind, solar, geothermal, and biomass under current plans.

Ohio has a choice to invest in a cleaner energy future

Ohio can achieve a new energy future by making better investments as utilities replace increasingly aged infrastructure and expand capacity. An important first step is for Ohio to generate at least 20 percent of electricity from renewable sources by 2020, a goal readily achievable with today's technology. Continuing to convert 15 percent of the state's energy portfolio to renewable energy sources each decade could yield an energy profile of at least 65 percent renewables by 2050.

Ohio can also benefit from improved energy efficiency. Technologies are available that could reduce demand nationally by 20 to 30 percent over the next decade. Innovations in energy efficiency should allow us to keep demand constant after 2020, even as the population grows.



About the chart: 2000, 2007 and 2020 Power Companies' Planned Investments from CARMA 1.0 (www.CARMA.org). The 2020 Green Investments projection assumes that, using currently available technology, Ohio makes (1) improvements in efficiency to reduce overall demand by 25 percent and (2) shifts away from fossil fuels so that 20 percent of power generation is from renewable energy sources. The 2050 Goal assumes (1) hydro and nuclear are unchanged, (2) continued efficiency improvements keep total demand flat, and (3) renewable energy replaces at least 65 percent of power generation formerly done through fossil fuel burning. Note that the projection of future CO₂ emissions from fossil fuels assumes no investment in carbon capture and storage.

For more information, visit www.nwf.org/globalwarming.

Making a Difference in Ohio

College campuses across Ohio are leading state efforts to go green. Ohio's greenest school is Oberlin College, which implemented programs to raise awareness of student energy consumption and help them cut back. In 2005, the school implemented a program that allows students to track their energy consumption in real time and held a competition to encourage individuals to cut back. With 80 percent of the students participating, the school was able to reduce electricity use in the dorms by 32 percent and save \$5,100 in just two weeks. Oberlin also has one of the largest solar arrays in the state.

At Ohio University, the Innovation Center has implemented energy saving features including solar panels and specially designed energy saving windows and sunshades. In 2008, Ohio State opened its first "green building." The new Nationwide and Ohio Farm Bureau 4-H Center hopes to receive national recognition and LEED certification.



Sources:

<http://www.ohio4h.org/>

<http://innovationcenter.ohiou.edu/services/index.php?page=69>

http://www.nwf.org/campusEcology/chillout/co06-07_winners.cfm

Making a dent in global warming pollution

Simply by shifting to renewable energy sources and improving energy efficiency over the next decade or so, Ohio can reduce its future carbon dioxide (CO₂) emissions from electricity generation by 42 percent compared to the business-as-usual path that utilities are following now.

Given that 46 percent of Ohio's CO₂ emissions come from electricity generation, diversifying and updating our power sources is critical for cutting the state's total global warming pollution.

Increasing Ohio's energy and economic security

Investing in renewable energy sources will reduce Ohio's dependence on fossil fuels and at the same time create new green collar jobs. A new energy future in Ohio could include:

Expanded solar power. Ohio has enough solar resources to produce 4,000 to 4,500 Whr per square meter using photovoltaic systems and 3,000 to 3,500 Whr per square meter using concentrating solar power systems. This means that devoting just 1 square mile in Ohio to solar power can provide enough electricity for about 0,900 households each year.

Expanded wind power. Ohio is currently ranked 29th for wind power, with 7 MW of existing electricity generation capacity. The American Wind Energy Association ranks Ohio 36th in terms of its future wind potential, with 416 MW of potential capacity.

Biomass power. Ohio has 19.0 million dry tons of biomass available each year that could be used to generate about 3,800 MW of electricity.

New jobs. Committing to a 30 percent growth in solar energy use in the United States will bring 1,223 jobs and \$991 million investment to Ohio.

A stronger economy. Ohio could realize as many as 11,688 jobs manufacturing wind turbines and \$3.90 billion investment in the wind industry alone if 50,000 MW of new wind energy is created on a national level.

References and Additional Reading:

American Council for an Energy-Efficiency Economy, www.aceee.org.

American Wind Energy Association, www.awea.org.

Bioenergy Feedstock Information Network, bioenergy.ornl.gov

CARMA (Carbon Monitoring for Action), www.CARMA.org.

Database of State Incentives for Renewables and Efficiency, www.dsireusa.org.

Department of Energy, Energy Efficiency and Renewable Energy, apps1.eere.energy.gov/states/alternatives/electricity.cfm.

Energy Information Administration, State Energy Data System, www.eia.doe.gov/emeu/states/_seds_updates.html.

Environmental Protection Agency, Energy CO₂ emissions by state, www.epa.gov/climatechange/emissions/state_energyco2inv.html.

Geothermal Energy Association, www.geo-energy.org.

McKinsey Global Institute, 2007: *Wasted Energy: How the U.S. Can Reach its Energy Productivity Potential*.

Political Economy Research Institute, www.peri.umass.edu.

Renewable Energy Policy Project, www.repp.org.

For more information, visit www.nwf.org/globalwarming.