O·H·I·O ENVIRONMENTAL COUNCIL

# Global Warming Solutions

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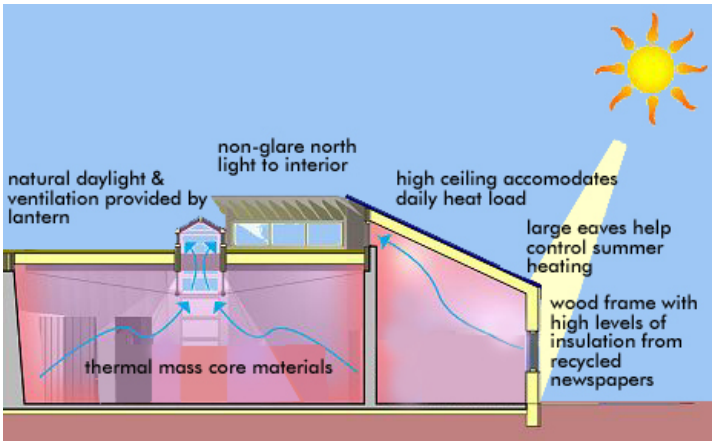
# Electric & heating efficiency

## …investing now to cut down on $CO_2$ emissions




Green building design can minimize energy requirements and take advantage of passive solar heating and natural convection to remove excess heat.

Making use of electric and heating efficiency strategies reduces greenhouse gases and saves money. As long as new products and technology improvements are possible, the ability to invest in efficiency will be available. Investing in efficiency for electricity and natural gas can go a long way in cutting Ohio's $CO_2$ emissions.

## Technology Options

Reducing electricity and heat demand involves:

### Products

Improving the efficiencies of appliances, electronics, heating and cooling systems, and lighting are all opportunities to reduce the use of electricity and natural gas. There are two efficiency standards: (1) the Energy Star program and (2) mandatory federal and state appliance standards. Buying products that meet these standards can help reduce your carbon footprint.

Read all details of the OEC's global warming study, Ohio Climate Road Map, Part 2 at *www.theOEC.org*.

## the OEC's Top Ten

1. Carbon bio capture
2. Carbon geological capture
3. Bio products
4. Methane emission reductions
5. Greenhouse gas markets
6. **Electric & heating efficiency**
7. Vehicle efficiency
8. Wind & solar power
9. Low or no-carbon energy systems
10. Cleaner diesel

### Building Design and Maintenance

The design and maintenance of a building can significantly impact its energy use. Programmable thermostats and zone heating and cooling systems (reduce heating/cooling in unused areas) are important energy-saving strategies. In commercial buildings, integrated space and water heating systems contribute significantly to lowering energy requirements.

### Industrial Process Efficiency

Creating industrial products can be very energy intensive. Optimizing industrial process system energy use can save large amount of energy. For example, in the glass industry, the use of pure oxygen-fueled furnaces that burn at higher temperatures and new heat resistant materials saves energy.

### Combined Heat and Power (CHP)

CHP is the generation of heat and power in a single process. A combustion boiler burns fossil fuel or bio mass to drive electrical generators which create electricity and heat that can be used for industrial processes and heating. Currently, commercially common CHP installations achieve a reduction of over 30% in $CO_2$ emissions over coal-fired power stations. In addition, CHP reduces $CO_2$ 10% compared to gas-fired combined cycle gas turbines.

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# Recommendations for a better Ohio

## Combined Heat & Power (CHP) - utilize the Ohio Energy Loan Fund

The Office of Energy Efficiency should work with potential CHP customers and developers to create a streamlined, user friendly program to specifically promote combined heat and power.

## Combined Heat & Power (CHP) - develop markets

The Ohio Department of Development, large industrial trade associations, and other customer representatives should develop a program to help educate potential mid-sized customers about the opportunity for CHP.

## Establish transparent standardized interconnection

The Public Utilities Commission of Ohio should develop a system that provides transparent tracking of how electric transmission and distribution companies apply Institute of Electrical and Electronics Engineers standards.

## Promote the Demand Side Management (DSM) program

DSM is a program that helps reduce the need for additional base load electricity generation by reducing the growth demand for electricity. The primary focus of DSM is to provide incentives for electricity customers to use more energy-efficient products. In 2004, 14,000 megawatts of peak load electricity reduction in the U.S. was met through DSM. Ohio should develop a DSM program that is able to function in the current electric utility restructured environment or in a "re-regulated" environment which is subject to rigorous accounting, in order to track the effectiveness of the program. (For details see p. 27 of Ohio Climate Road Map, Part 2.)

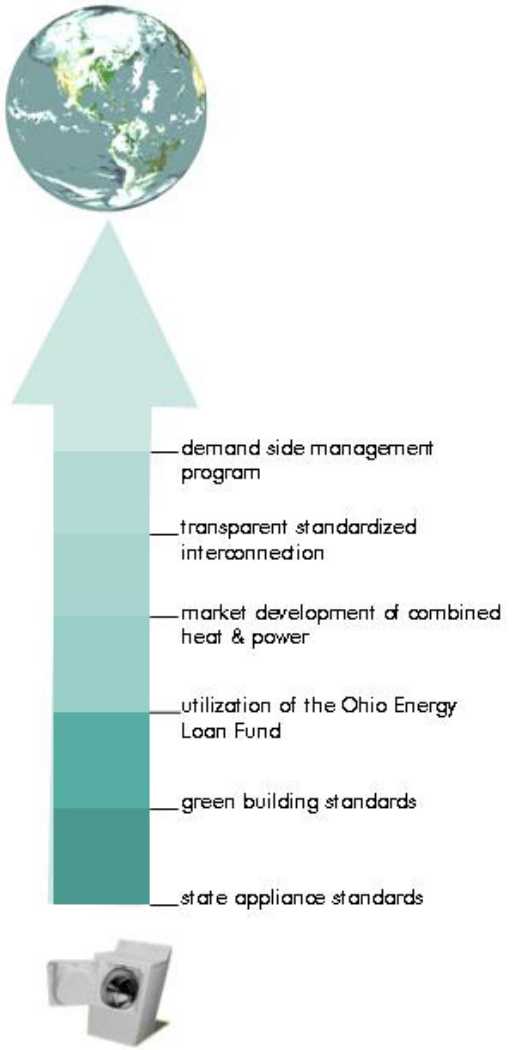
## Adopt green building standards and state appliance standards

The state should adopt a program to promote the use of green building designs and systems for state governments and universities in Ohio. The state should also adopt appliance and equipment efficiency standards.

## Foundation for Action

- The Public Utilities Commission of Ohio is considering a proposed program by Duke Energy that would invest $8 million annually into demand side management for electricity and natural gas.
- Ohio is home to manufacturers of energy efficient products such as insulation by Owens-Corning and energy efficient washers by Whirlpool.
- The Ohio Energy Loan Fund was established to provide an incentive for Ohioans to start energy efficiency and renewable energy projects.
- Proposed legislation (HB 251-Uecker) would require the Dept. of Administrative Services to develop efficiency standards for state-funded facilities. It would also force the Office of Energy Efficiency to provide technical assistance for state purchasing, as well as other Energy efficient actions.

Energy Star qualified clothes washers use 50% less energy per load and can save 25 gallons of wa-ter per load.




**Toward a cleaner earth**