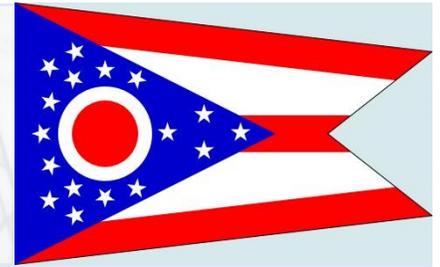


BUILDING CODES & ENERGY EFFICIENCY: OHIO



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Buildings account for almost 40 percent of the total energy use in the United States and 70 percent of our electricity use, representing a significant opportunity for energy savings. New construction is the most cost-effective point in the life of a building to establish minimum energy efficiency elements. Building energy codes serve as a logical starting point for comprehensive modern policies to reduce energy dependence and extend our natural resources. For the state of Ohio, this first step should be the adoption of the U.S. model energy codes, the **International Energy Conservation Code (IECC)** and **ASHRAE Standard 90.1**.

In February 2009, the American Recovery and Reinvestment Act (ARRA) – the federal stimulus legislation appropriating funds for a variety of state initiatives – allocated \$3.1 billion for the U.S. Department of Energy’s State Energy Program (SEP) to assist states with building energy efficiency efforts. As one of the requirements to receive these SEP grants, state governors **must certify to DOE** that their state (or applicable units of local government that authorize building codes) will implement energy codes of equal or greater stringency than the latest national model codes (currently, the 2009 edition of the IECC and Standard 90.1-2007).

Given this unprecedented opportunity to receive federal aid for building energy efficiency, it is in the state’s best economic interests to **adopt the 2009 IECC and Standard 90.1-2007 statewide** and to begin enjoying the benefits of an efficient building sector.

ECONOMIC BENEFITS

- Ohio consumers will save money well into the future by reducing utility bills, minimizing the negative impacts of fluctuations in energy supply and cost, and conserving available energy resources. Retail and office buildings constructed to meet the requirements of the IECC can be **30-40 percent more energy efficient** than typical buildings not constructed to meet any national model energy code standards.



- Monetary savings derived from codes increase a consumer's purchasing power, and help **expand the Ohio economy** by keeping local dollars in our state!

BUILDING INDUSTRY BENEFITS

- The national model code, the 2009 IECC, offers flexibility to Ohio builders and design professionals, allowing them to **optimize the cost-effectiveness** of energy efficient features in their building products, and to satisfy the variety of consumer preferences.
- The 2009 IECC also **simplifies guidelines** for builders, providing a uniform statewide code with multiple options for compliance.
- Uniformity throughout Ohio and its 88 counties will enable local jurisdictions to **pool limited resources** and combine personnel to form county-wide, regional and statewide enforcement and educational programs.

UTILITY AND ENVIRONMENTAL BENEFITS

- An energy code improves the energy efficiency performance of all new buildings and reduces demand on power generators, therefore **improving the air quality** of local communities and throughout the state.
- Electricity use is one of the leading generators of air pollution. **Rising power demand increases emissions** of sulfur dioxide, nitrous oxides and carbon dioxide. Energy codes have proven to be one of the most cost-effective means for addressing these and other environmental impacts.



A MODEL STATE ENERGY CODE FOR OHIO

The state of Ohio currently has *three different compliance paths* for the energy section of the Residential Code of Ohio. One path, **Ohio's Prescriptive Energy Requirements** (Section 1104), may allow the construction of homes that perform substantially worse in energy use than those built according to the main compliance path, the 2006 IECC. This alternative path creates confusion and may allow for lower energy efficiency, resulting in lost energy and dollar savings. In general, multiple compliance paths complicate and weaken energy codes in the long-term.

OHIO'S ALTERNATIVE PRESCRIPTIVE COMPLIANCE PATH

- ◆ According to a series of simulations conducted using the U.S. Department of Energy's REScheck program — the most widely-used compliance software tool in the nation — a home built using the Ohio alternative path **fails the performance path of the 2006 IECC by 0.7-6.5 percent** under a range of best-case to worst-case scenarios.
- ◆ The same analysis showed that this simulated home's thermal envelope performance fell substantially short of the 2006 IECC, **trading away 16-18 percent of the home's energy efficiency** in floors, walls, and ceilings.

BENEFITS OF ADOPTING THE 2009 IECC: THE NATIONAL MODEL ENERGY CODE

- ◆ New construction is the most cost-effective point in the life of a building to install good insulation, quality windows and doors, and other energy efficient measures. By mandating the provisions of the current model energy code in new buildings, Ohio home-



A coal-fired power plant in southern Ohio.

owners and businesses will benefit from the construction products and techniques currently available across the nation.

- ◆ According to DOE, the 2009 IECC will produce around **15 percent in energy efficiency gains** compared to the 2006 IECC edition.
- ◆ The 2009 IECC contains completely new requirements for duct design and installation that will **create jobs** for an entire specialization within the HVAC industry.
- ◆ Adoption and enforcement of the 2009 IECC — instead of developing weaker alternative compliance paths — will keep Ohio up-to-date with national energy efficiency standards.
- ◆ Assuming a common practice equivalent to the 2006 IECC, if Ohio updated its code to the 2009 IECC, it would **save an estimated \$98 million by 2020** and an **estimated \$186 million by 2030** in energy costs (assuming 2006 energy prices). Additionally, adopting the 2009 IECC statewide in Ohio would help **avoid 22 trillion Btu** of primary annual energy use and annual emissions of **1.5 million metric tons of CO₂** by 2030.
- ◆ The energy efficiency savings achievable from the 2009 IECC and accrued through 2030 are sufficient to pay for **two-year college degrees** from Cincinnati State Technical and Community College for approximately **15,500 state residents**.

For more information please consult the Building Codes Assistance Project website at www.bcap-energy.org.