

BUILDING CODES & ENERGY EFFICIENCY: NEBRASKA



Updated January 25, 2011



Buildings account for roughly 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. Energy efficiency – through the adoption and enforcement of strong building energy codes – is the quickest, cheapest, and cleanest way to reduce energy consumption and achieve a sustainable and prosperous future. For the state of Nebraska, the next step should be the adoption of the U.S. model energy codes – the **2009 International Energy Conservation Code (2009 IECC)** and **ASHRAE Standard 90.1-2007**.

In February 2009, the American Recovery and Reinvestment Act (Recovery Act) – 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 this funding, Gov. Dave Heineman [certified to DOE](#)¹ that Nebraska would implement energy standards of equal or greater stringency than the latest national model codes – the 2009 edition of the IECC and Standard 90.1-2007.

As a condition of [accepting \\$31 million](#)² in federal SEP funding, Nebraska must now begin the legislative and infrastructure steps to successfully implement the building energy code plans submitted to DOE. It is in Nebraska’s best economic interest to **adopt and enforce the 2009 IECC and Standard 90.1-2007 state-wide** and begin enjoying the benefits of an efficient building sector.

ECONOMIC BENEFITS

- Consumers save money by reducing utility bills, minimizing the negative impacts of fluctuations in energy supply and cost, and by conserving available energy resources. Retail and office buildings constructed to meet the requirements of the IECC can be **over 30 percent more energy efficient** than typical buildings not constructed to meet national model energy standards.
- Monetary savings derived from codes increase a consumer's purchasing power, and help **expand the state’s economy** by keeping local dollars in Nebraska.

BUILDING INDUSTRY BENEFITS

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

UTILITY AND ENVIRONMENTAL BENEFITS

- Energy codes improve the energy efficiency performance of new buildings and reduce demand on power generators, therefore **improving the air quality** of local communities throughout Nebraska.
- Electricity use is a leading generator of air pollution. **Rising power demand increases emissions** of sulfur dioxide, nitrous oxides and carbon dioxide. Energy codes are a proven, cost-effective means for addressing these and other environmental impacts.



A MODEL STATE ENERGY CODE FOR NEBRASKA



Chimney Rock in western Nebraska (Credit—[Northern Magnolia](#))

Nebraska's [current energy code](#)³ for residential and commercial construction—the Nebraska Energy Code – is based on the 2003 IECC. It became effective July 1, 2005. The 2009 IECC, however, is simpler to use and achieves significant energy savings above the 2003 IECC.

The Nebraska Energy Office (NEO) is also currently analyzing the impact of implementing the 2009 IECC statewide. This is the product of a [\\$303,000 grant](#)⁴ awarded by DOE in 2008. The NEO seeks to adopt the 2009 IECC in 2011 and host a regional code training conference for code officials, designers, contractors, and other stakeholders in the building community.

When states regularly update and enforce their energy codes in coordination with the three-year model code update cycles, they ensure the consistency and continued enhancement of the benefits of model building practice. By maintaining this commitment, Nebraska can demonstrate leadership on energy efficiency issues by meeting national standards.

ENERGY RESOURCES AND EFFICIENCY

Nebraska does not have abundant fossil fuel resources, depending on coal, natural gas, and oil transported across state lines. Coal-fired power plants supply two-thirds of Nebraska's electricity generation market, with virtually all of its coal imported by rail from

Wyoming.⁵ Despite its low population size (ranked 38th in 2007), Nebraska has a high per capita energy consumption (16th) and a fairly energy-intensive economy, [ranking comparatively high](#) in energy consumption per real dollar of GDP (21st).⁶ This can leave the state vulnerable to future fluctuations in energy costs and peak demand. By adopting national baseline standards for building energy performance, Nebraska can mitigate the impacts of price uncertainty and become one of the nation's more efficient states.

AN UNTAPPED RESOURCE

With energy prices projected to rise sharply over the medium- and long-term, reducing Nebraska's energy demand will also enhance the state's energy security and stimulate its economy.

The [2009 IECC](#)⁷ improves substantially upon the 2003 IECC and will provide Nebraska households and businesses lower utility costs, increased comfort, and better economic opportunity. A [limited DOE analysis](#)⁸ of the changes from the state's current residential code to the 2009 IECC resulted in estimated **energy savings of 13 percent, or about \$236 a year** for an average new house at recent fuel prices.

Energy codes also offer large-scale gains. BCAP estimates that if Nebraska began implementing the 2009 IECC and Standard 90.1-2007 statewide in 2011 (making incremental steps toward 90 percent compliance in 2017), the state would realize **substantial savings over BCAP's business-as-usual scenario**:⁹

- By 2030, \$165 million in annual energy cost savings for households and businesses, or \$1.4 billion from 2011-30.
- By 2030, annual CO₂ emissions reductions of 700,000 metric tons, or 7.2 million from 2011-30.
- By 2030, residential sector source energy savings of 7 percent, representing annual savings of 6 trillion Btu.
- By 2030, commercial sector source energy savings of 11 percent, representing annual savings of 8 trillion Btu.

** NOTES **

For more information, please visit www.bcapi-ocean.org

¹ US DOE (http://www.energy.gov/media/NE_Gov.pdf)

² US DOE (http://apps1.eere.energy.gov/news/progress_alerts.cfm?pa_id=202)

³ BCAP (<http://bcap-ocean.org/state-country/nebraska>)

⁴ BCAP (<http://bcap-energy.org/node/272>)

⁵ US EIA (http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=NE)

⁶ US EIA (http://www.eia.doe.gov/emeu/states/sep_sum/html/pdf/rank_use_gdp.pdf)

⁷ BCAP (<http://bcap-energy.org/node/330>)

⁸ US DOE (http://www.energycodes.gov/publications/techassist/residential/Residential_Nebraska.pdf)

⁹ BCAP Code Estimator Tool simulation, August 2010