

Nebraska Strategic Energy Codes Plan

Critical Pathways to 90% Compliance

Nebraska Compliance Toolkit

June 2011



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Summary

A Plan to Achieve 90% Energy Code Compliance in Nebraska

The goal of this Strategic Energy Code Plan is to develop an approach for the ongoing improvement of building energy code policy adoption, implementation, and compliance in Nebraska. Part I of the Plan is the Nebraska Gap Analysis Report developed by Building Codes Assistance Project (BCAP) and the Nebraska Energy Office (NEO) in June 2011.¹ Major sections featured in the Gap Analysis Report include:

- An overview of Nebraska construction industry statistics and trends for residential and commercial buildings;
- Identification of current adoption, implementation, enforcement, and compliance issues surrounding the Nebraska Energy Code;
- Strategies for improving code adoption and enforcement policies;
- Strategies for industry-supported training and education; and
- Strategies for meeting 90 percent compliance throughout the state.

Critical Pathways: Four Action Items Towards 90% Compliance

Part II of this Strategic Energy Code Plan is the development and implementation of the following four action items considered critical pathways to achieving 90% compliance with the Nebraska Energy Code:

- *Action Item #1:* Expand the state's role as a facilitator for the Nebraska Building Codes Advisory Council (BCAC) and build a broader energy codes coalition for leading compliance activities.
- *Action Item #2:* Identify a continuous improvement process for energy code compliance through Measurement and Verification (M&V).
- *Action Item #3:* Continue statewide energy code training.
- *Action Item #4:* Expand outreach to builders, designers, consumers and nontraditional stakeholders.

Statewide Energy Codes Coalition

Action Item #1: Expand the state's role as a facilitator for the Nebraska Building Codes Advisory Council (BCAC) and build a broader energy codes coalition for leading compliance activities

The state should expand its role as facilitator by working with non-governmental actors, such as the Midwest Energy Efficiency Alliance (MEEA), utilities, trade associations, manufacturers, environmental organizations, and others, to build a stronger coalition of interested parties that can influence changes that lead to stronger energy code implementation. Pressure – and incentives – from multiple parties coordinated at the state level can motivate the enforcement, design, and construction professionals in ways that the state cannot achieve through mandates.

NEO should also reenergize the Nebraska Building Codes Advisory Council – perhaps by reconstituting it along the lines of the model statewide codes collaborative developed by Idaho – for the purpose of 1) assisting with the evaluation, adoption, and implementation of new energy codes, 2) consideration of new or revised processes to improve levels of code compliance, 3) expansion of energy code outreach and awareness throughout local governments, the construction industry and the general public, and 4) consideration and pursuit of other resources that could be utilized to advance energy efficiency through energy codes in Nebraska. Nebraska Energy Office (NEO) should identify key participants/stakeholders for achieving success, with participants provide geographic and industry-sector diversity. These participants should include homeowners, consumer advocates, and low income housing advocates.

Measurement and Verification (M&V)

Action Item #2: Identify a continuous improvement process for energy code compliance through Measurement and Verification (M&V)

As part of a Recovery Act-funded PNNL grant, NEO will complete the state's first baseline M&V compliance study for energy codes in 2011. NEO randomly selected 100 new homes constructed in 2010 (more than double the number prescribed by guidance from DOE) from a cross-section of home sizes and urban, suburban, and rural jurisdictions.

While contacting the homeowners about the study and offering a \$250 stipend from grant funds, NEO contracted with Home Energy Defense – a BPI and RESNET certified home rater – to perform the home inspections. These homes were rated for their compliance against the energy code in effect at the time of their construction, the 2003 IECC. Inspections began in April and the vast majority had been conducted by late June. NEO expects to complete the inspections later in the summer and hopes to receive a formal analysis of the inspections in fall 2011, with the aim of establishing a reasonable baseline compliance rate as it transitions to the 2009 IECC. The office believes this information will help lay the groundwork for future studies of compliance with the model codes as the state moves toward the Recovery Act goal of demonstrating compliance in 90 percent of new and renovated residential and commercial building space by 2017.

M&V programs present their own unique set of challenges, but two important issues stand out:

- a) There needs a plan in place to correct any noted deficiencies and provide mitigation by means of training and outreach focused on deficient areas; and
- b) Determining how to fund the M&V efforts after Recovery Act funds are no longer available produces a great deal of uncertainty. As part of this consideration, there will need to be a determination of what other states including PNNL M&V pilot states uncover regarding the most cost effective way to conduct the audit/validation process entails, what level of review is required, and what type of expertise/certification is needed by an evaluator.

Code Training

Action Item #3: Continue statewide energy code training

While NEO has been utilizing Recovery Act funds to provide extensive code training throughout Nebraska, ongoing regularly scheduled training on energy code and building science topics is essential to make gains toward the 90 percent compliance goal, even after Recovery Act funds are no longer available. Continued funding for training needs to be secured and several options include:

Other Potential Funding Resources:

Other resources might also be employed to help support future energy code adoption and implementation. BCAP recommendations on these issues include:

- Investigate and involve **key stakeholders** (perhaps through the coalition suggested in Action Item #1) in reviewing options for funding both training associated with the 2009 IECC and the costs of M&V in years after the Recovery Act funds are no longer available. A list of stakeholders is included in the Gap Analysis Report beginning on page 17.
- **Energy fee surcharge to all rate payers** (aka Systems Benefit Charge), which would involve a utility fee authorized by the Legislature that would be paid by all rate payers, used to fund all or some portion of the code training and/or M&V efforts in that utility service area.
 - *Arguments for this method:* When the new energy codes are implemented, all the rate payers served by the utility benefit, since the energy efficiency improvements result in less investment required by the utility company in new production facilities, less investment in transmission infrastructure, and less expense in mitigating environmental impacts. The energy efficiency improvements also help the utility achieve renewable portfolio standard (RPS) goals with a lower amount of renewable energy sources, which typically are more expensive sources of energy than fossil fuel sources. Each of these benefits results in lower rates for all ratepayers.
 - *Arguments against this method:* The owners/occupants of new or remodeled buildings are the prime beneficiaries of the new energy codes. It is more equitable that they ultimately bear the incremental costs than spreading them out to all ratepayers. As stated above, utilizing this would require agreement by the Public Services Commission (PSC) which could be problematic and/or time consuming. There could be legal actions opposing this approach.

- **Utility company contributions, with associated RPS credits.** This approach would encourage utility companies to make contributions to cover all or some portion of the costs of code training and/or M&V efforts in their service area. In return, the utilities would be allowed to count some portion of the resulting energy savings as a portion of the energy-efficiency portion of the renewable energy portfolio standards.
 - *Arguments for this method:* When new energy codes are implemented with a high rate of compliance, it helps move the state of Nebraska and the nation towards a better energy future including a lower carbon footprint, more independence from foreign supplies of fossil fuels, and a stronger and more diverse state economy. Therefore, it would be good public policy to allow the utility companies to make these contributions and obtain some credit for the energy efficiency achieved towards their RPS goals.
 - *Arguments against this method:* Typically, energy efficiency achieved through new building codes does not count towards the RPS standard. If allowed, this would dilute the other efforts that are counted towards meeting the RPS goals.
- **Utilize federal funding,** such as future DOE State Energy Program (SEP) funds to help cover all or some portion of the costs of code training and/or M&V efforts.
- Utilities, as well as **other stakeholder organizations,** could promote energy codes to their audience to help transform the market to place higher demand for homes that meet the minimum statewide energy code.
- The state should seek partnerships with **manufacturers and big box retailers** to promote energy efficient products and services.
- The state should utilize the untapped resource of **product manufacturers** to grow the circle of energy code supporters at the state level. The Responsible Energy Codes Alliance (RECA) is a perfect example of how industry can be organized to be involved in energy codes.

Outreach Summary

Action Item #4: Expand outreach to builders, designers, consumers, and nontraditional stakeholders

NEO should promote and disseminate available resources and information from BCAP for stakeholders throughout the state and throughout the energy codes community.

- Nebraska Gap Analysis Report – <http://bcap-ocean.org/resource/nebraska-gap-analysis-report>
- Nebraska Strategic Energy Codes Plan – <http://bcap-ocean.org/resource/nebraska-strategic-energy-codes-plan>
- Nebraska Homeowners Energy Code Guide – <http://bcap-ocean.org/resource/homeowners-energy-code-guide-nebraska>
- Nebraska Homeowners Energy Code Checklist – <http://bcap-ocean.org/resource/homeowners-energy-code-checklist-nebraska>
- Nebraska Energy Code Training Best Practices Factsheet – <http://bcap-ocean.org/resource/energy-code-training-best-practices-nebraska>
- Nebraska Energy Code Incremental Cost Handout – <http://bcap-ocean.org/resource/incremental-cost-payback-nebraska>

- Nebraska Energy Code Incremental Cost Analysis Justification – <http://bcap-ocean.org/resource/incremental-cost-analysis-justification-nebraska>
- Nebraska RECA 2009 IECC Compliance Guide – <http://www.reca-codes.org/> (Click on “State Code Guides” on the left hand side, choose the 2009 IECC drop-down box, select Nebraska, and this guide should be available to view and print).

Other Potential Outreach Initiatives:

- Provide ready-made information on such programs to building departments to help them raise awareness within their local construction industry.
- Engage contractors, architects, and other LEED-certified professionals in the promotion of energy efficiency by providing them with ready-made marketing materials that describe the compelling and specific benefits of energy efficiency.
- Raise public demand for energy efficiency in housing by offering courses on energy efficiency via partnerships with groups that reach more rural areas of the state such as the University of Nebraska County Extension Service, which has historically addressed the energy needs of local consumers.
- The state can help to educate the general public and construction industry professionals with a energy efficient housing demonstration project. NEO could partner with museums, colleges, and local HBAs to build small demonstration homes at local museums to demonstrate the latest technologies in energy efficiency and the potential for energy and cost savings opportunity throughout Nebraska. Since energy efficiency is largely “out of sight, out of mind” to consumers, such demonstration projects would allow the public to see, touch, and learn about the what’s available on the market, helping to drive the Nebraska housing market toward modern building practices. This initiative could educate the general public and create demand for more energy efficient construction, making energy codes easier to adopt as the people become more aware and begin to demand energy efficiency in new housing. One example is the PNC Model Home Cleveland project sponsored by the Cleveland Museum of Natural History.²
- Give builders who are going the extra mile a competitive edge by recognizing every new building or home built to higher standards and seek publicity (e.g. give awards, distribute press releases) for builders who meet the Builders Challenge qualifications. Such actions will raise public awareness, drive demand for energy efficiency and raise the bar in your state for advanced homes.

¹ BCAP. “Nebraska Gap Analysis Report.” June 2011. <http://bcap-ocean.org/resource/nebraska-gap-analysis-report>

² Cleveland Museum of Natural History. *PNC Model Home Cleveland*.
<http://www.cmnh.org/site/AtTheMuseum/OnExhibit/SmartHome.aspx>